



UNDERGRADUATE EDUCATION COMMITTEE (UEC)

April 21, 2017 - 10:00 AM

A225

AGENDA

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Page

#### 1. APPROVAL OF THE AGENDA

##### 1.1.

#### 2. APPROVAL OF UEC MINUTES

4 - 11      2.1. UEC draft minutes: March 24, 2017

#### 3. PROGRAMS AND COURSES

12 -      3.1. **Upgrading and University Preparation: Course outlines**

22      New course: ENGL 064, Fundamental English

New course: COMP 092, Provincial-Level Computer Studies: Computer Applications

MOTION: To approve the ENGL 064 and COMP 092 course outlines as presented.

23 -      3.2. **Graphic and Digital Design: Course outline**

27      New course: MEDA 222, Design Ethos and the Creative Practitioner

MOTION: To approve the new MEDA 222 course outline as presented.

28 -      3.3. **Graphic and Digital Design: Program changes**

32      Change to program requirements: Graphic and Digital Design extended minor

MOTION: To approve the changes to the Graphic and Digital Design extended minor as presented, effective September 2017.

33      3.4. **Applied and Technical Studies: New program**

New program: Aircraft Maintenance Engineer M-License certificate

MOTION: To recommend approval of the Aircraft Maintenance Engineer M-License certificate as presented.

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### **3.5. Applied and Technical Studies: Course outlines**

New course: AMRT 100, Introduction to Standard Aviation Practices  
New course: AMRT 101, Aerodynamics and Aircraft Construction  
New course: AMRT 102, Aircraft Reciprocating Engines  
New course: AMRT 103, Aircraft Reciprocating Engine Systems  
New course: AMRT 200, Hydraulic and Pneumatic Systems and Landing Gear  
New course: AMRT 201, Aircraft Structural Repair  
New course: AMRT 202, Basic Electricity for Aircraft  
New course: AMRT 203, Aircraft Electrical Systems  
New course: AMRT 300, Propellers and Propeller Systems  
New course: AMRT 301, Aircraft Gas Turbine Engines  
New course: AMRT 302, Aircraft Gas Turbine Engine Systems  
New course: AMRT 303, Aircraft Rigging  
New course: AMRT 304, Rotary Wing Aircraft  
New course: AMRT 400, Aircraft Instrumentation  
New course: AMRT 401, Aircraft Electronics  
New course: AMRT 402, Aircraft Systems  
New course: AMRT 403, Maintenance Practices I  
New course: AMRT 404, Maintenance Practices II

MOTION: To approve creation of the course code AMRT (Aircraft Maintenance and Repair Technician).

MOTION: To approve the AMRT course outlines as presented.

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### **3.6. Engineering: program changes**

Change to entrance requirements: Engineering Transfer program

MOTION: To recommend approval of the Engineering Transfer program entrance requirements as presented, effective September 2017.

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### **3.7. Fine Arts: Program changes**

Change to program requirements: Bachelor of Fine Arts

MOTION: To approve the changes to the Bachelor of Fine Arts program requirements as presented, effective September 2017.

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### **3.8. Health Sciences: Program changes**

Change to grading policy: Health Care Assistant certificate

MOTION: To approve the change to the Health Care Assistant grading policy as presented, effective September 2017.

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### **3.9. Indigenous Studies: Program changes**

Change to programs: Indigenous Studies major and minor

MOTION: To approve the changes to the Indigenous Studies major and minor as presented, effective September 2017.

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**3.10. Mathematics and Statistics: Program changes**

Change to program requirements: Mathematics major (BA)

Change to program requirements: Mathematics extended minor (BA)

Change to program requirements: Mathematics minor (BA and BGS)

Discontinuation: Mathematics extended minor (Statistics option) (BA)

Change to program requirements: Mathematics minor (Statistics option) (BA and BGS)

Change to program requirements: Mathematics major (BSc)

Change to program requirements: Mathematics minor (BSc)

Change to program requirements: Mathematics minor (Statistics option) (BSc)

MOTION: To approve the changes to the Mathematics major, extended minor, minor, and minor (Statistics option) for the Bachelor of Arts as presented, effective September 2017.

MOTION: To recommend that the Mathematics extended minor (Statistics option) for the Bachelor of Arts be discontinued, effective September 2017.

MOTION: To approve the changes to the Mathematics major, minor, and minor (Statistics option) for the Bachelor of Science as presented, effective September 2017.

**4. OTHER BUSINESS/DISCUSSION ITEMS**

**4.1. Admissions Subcommittee report**

**4.2. Transfer Credit Subcommittee report**

**4.3. Policy Subcommittee report**

**5. INFORMATION ITEMS**

**5.1. Minor course changes** (outlines will be available at [www.ufv.ca/calendar/courseoutlines](http://www.ufv.ca/calendar/courseoutlines))

AH 101, 102

ANTH 102, 130

BUS 343, 344

PHYS 093

**6. ADJOURNMENT**



## **UNDERGRADUATE EDUCATION COMMITTEE (UEC) MEETING**

March 24, 2017  
10:00 AM - A225  
Abbotsford Campus

### **DRAFT MINUTES**

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**PRESENT:** Donna Alary, Adrianna Bakos, Maria Bos-Chan, Sue Brigden, Rhonda Colwell, John English, Peter Geller, Nancy Goad, David Johnston, Bruce Kirkley, Emilio Landolfi, Teresa Piper, Mary Saudelli, Eric Spalding, Arashpreet Tamber, Ben Vanderlei, and Simon Xi

**ABSENT:** Heather Comeau, Vlad Dvoracek, Shirley Hardman, David McGuire, Samantha Pattridge, Kirsten Robertson, Jared De Bruin, Elaine Newman, and Ceilidh Hart

**GUESTS:** Allan Arndt, Alan Cameron, Karin Jager, Lynn Kirkland-Harvey, Judy Larsen, Seonaigh MacPherson, Steven Marsh, Corinne Richardson, Steven Schroeder, Hilary Turner, Frank Ulbrich, Wenona Victor

**RECORDER:** Amanda Grimson

#### **1. APPROVAL OF THE AGENDA**

#### **2. APPROVAL OF UEC MINUTES**

##### **2.1. UEC draft minutes: February 24, 2017**

**MOTION:**

To approve the minutes as presented.  
CARRIED

#### **3. COURSES AND PROGRAMS**

##### **3.1. Business: Program changes**

Changes to program: Bachelor of Business Administration

UEC reviewed this item on March 24, 2017, and asked that additional data be presented to support this change. F. Ulbrich (School of Business Director) noted that only three students in the current data will be affected by reducing the allowable time to completion, but this number may increase over time. The objective of this change is to give students a more realistic expectation of program length.

There were some concerns that there may still not be enough evidence for this change, and that it may be out of sync with other institutions.

**MOTION:**

To recommend the changes to the Bachelor of Business Administration as presented, effective September 2017.  
CARRIED  
OPPOSED: 1

##### **3.2. Peace and Conflict Studies: Course outlines**

Changes including prerequisites: PACS 400

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There were concerns at the Feb. 24, 2017 UEC meeting regarding the hours for this course, and S. Schroeder (Peace and Conflict Studies representative) indicated that the hours could be amended to 45, with all hours listed as seminars.

**MOTION:**

To approve the PACS 400 course outline as amended:

- Total hours changed from 60 to 45
- Typical hours: "Seminars/tutorials/workshops" changed to 45

CARRIED

**3.3. Adult Education: TESL program changes**

Changes to program: Teaching English as a Second Language certificate

S. MacPherson (Adult Education department head) noted that this certificate is not awarded without a degree, although students can complete it while completing a degree. This aligns with TESL Canada's requirement that students have a degree in order to be eligible for certification.

Some calendar copy edits were discussed. A statement will be added to the introductory paragraphs of that echoes the completion requirements section (required CGPA of 2.67), and the completion requirements section will be clarified to indicate that the 2.67 CGPA applies to the TESL courses. Entrance requirement #2 should also link directly to TESL Canada's requirements.

**MOTION:**

To recommend the change to the TESL program as presented, effective September 2017.

CARRIED

OPPOSED: 2

ABSTENTIONS: 2

**3.4. Adult Education: TESL course outlines**

Discontinuation: TESL 302, 303, 304, 305, 311

These courses will be removed from the calendar as of September 2017, but will remain active until May 2019 for any students who may have been in the process of completing the previous version of the certificate program.

**MOTION:**

MOTION: To approve the discontinuance of TESL 302, 303, 304, 305, and 311, effective May 2019.

CARRIED

Review with changes including title, prerequisites, and course number: TESL 400 (formerly TESL 300)

New course: TESL 408, Applied Linguistic in Second Language Education

Review with changes including title, prerequisites, and course number: TESL 410 (formerly TESL 310)

New course: TESL 420, Curriculum and Assessment in Second Language Ed.

Review with changes including title, prerequisites, and course number: TESL 433 (formerly TESL 333)

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**MOTION:**

To approve the new and revised TESL 400, 408, 410, 420, and 433 course outlines as presented.

CARRIED

ABSTENTION: 1

**3.5. Biology: Course outlines**

Change to prerequisites: BIO 202, 220

Review with changes including prerequisites: BIO 210

**MOTION:**

To approve the BIO course outlines as presented.

CARRIED

**3.6. Communications: Course outlines**

Review with changes including title: CMNS 380

Review with changes including prerequisites: CMNS 420

**MOTION:**

To approve the CMNS 380 and 420 course outlines as presented.

CARRIED

Review with changes including title, prerequisites, and equivalent course: CMNS 125

Discontinuation: CMNS 155

**MOTION:**

To approve the CMNS 125 course outline and discontinuation of CMNS 155 as presented.

CARRIED

**3.7. Communications: Program changes**

Change to programs using CMNS 155:

- Bachelor of Agriculture, Horticulture major
- Associate of Arts
- Bachelor of Arts
- Liberal Arts diploma
- Communications minor
- Professional Communication Essentials certificate
- Bachelor of Arts (Criminal Justice)
- Criminal Justice diploma
- Early Childhood Education certificate
- Bachelor of Arts in Child and Youth Care
- Bachelor of Arts in Child and Youth Care – Child Protection specialization
- Engineering Physics diploma in Mechatronics
- Bachelor of Fine Arts
- Graphic and Digital Design diploma
- Bachelor of Arts in Global Development Studies
- Bachelor of General Studies
- Bachelor of Kinesiology
- Bachelor of Science

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- Bachelor of Social Work
- Community Support Worker certificate
- Health and Human Services certificate
- Social Services diploma
- Social Services diploma – First Nations option
- Theatre diploma
- Visual Arts diploma

**MOTION:**

To approve the changes to programs using CMNS 155 as presented, effective September 2017.

CARRIED

**3.8. English: Course outlines**

New course: ENGL 298, Special Topics in Creative Writing

**MOTION:**

To approve the ENGL 298 course outline as presented.

CARRIED

**3.9. English as a Second Language: Course outlines**

Changes including title, prerequisites, and course number and designation:

- EAP 054 (formerly ESL WG54)
- EAP 056 (formerly ESL S56)
- EAP 058 (formerly ESL RV58)
- EAP 064 (formerly ESL WG64)
- EAP 066 (formerly ESL S66)
- EAP 068 (formerly ESL RV68)
- EAP 070 (formerly ESL R70)
- EAP 073 (formerly ESL V73)
- EAP 074 (formerly ESL WG74)
- EAP 075 (formerly ESL BS75)
- EAP 076 (formerly ESL S76)
- EAP 084 (formerly ESL WG 84)

M. Bos-Chan (ESL department head) noted that not all ESL courses are being changed at this time; these are the courses that have been most frequently offered in the last several years.

**MOTION:**

To approve the creation of the course code EAP (English for Academic Preparation).

CARRIED

**MOTION:**

To approve the EAP course outlines as presented.

CARRIED

**3.10. Geography: Course outlines**

Change to total hours: GEOG 103

Changes including title and total hours: GEOG 116, 202, 303, 304

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Changes including title, prerequisites, and total hours: GEOG 201, 302, 307, 315

Changes including total hours: GEOG 219/BIO 219, GEOG 419/BIO 419

Changes including total hours: GEOG 253, 353, 402, 454, 458

Changes including prerequisites and total hours: GEOG 308, 453

Changes including prerequisites and total hours: GEOG 319/BIO 319:

**MOTION:**

To approve the GEOG 103, 116, 201, 202, 219/BIO 219, 253, 302, 303, 304, 307, 308, 315, 319/BIO 319, 353, 402, 419/BIO 419, 453, 454, and 458 course outlines as presented.

CARRIED

Changes including title: GEOG 241

Changes including prerequisites: GEOG 346, 460

**MOTION:**

To approve the GEOG 241, 346, and 460 course outlines as presented.

CARRIED

Changes including title, prerequisites, and cross-listing as GD 464: GEOG 464

Changes including title, prerequisites, and cross-listing as GD 466: GEOG 466

The merits of cross-listing were discussed in relation to the proposed GEOG/GD courses, as was the tuition differential for Graphic Design courses. Higher fees for GD courses were intended to offset the cost of using the GD labs, but these courses will not use those labs. The Dean's office had not yet confirmed whether the tuition differential will be waived for these courses, although this is likely.

**MOTION:**

To approve the GEOG 464/GD 464 and GEOG 466/GD 466 course outlines as presented.

CARRIED

OPPOSED: 1

**3.11. Graphic and Digital Design: Course outlines**

New course: GD 357, Digital Project Management for Creative Practitioners

There was concern regarding the learning outcome verb "understand". The department will be asked to provide a different verb, and submit to the UEC Screening Subcommittee for final confirmation.

**MOTION:**

To approve the GD 357 course outline as amended:

- Learning outcome #10 ("understand the digital discovery process...") will be revised to include a measurable verb

CARRIED

**3.12. Graphic and Digital Design: Program changes**

Change to program requirements: Graphic and Digital Design extended minor

This item was postponed to the April 21, 2017 meeting.

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**3.13. Indigenous Peoples Knowledge: Course outlines**

Changes including title: IPK 100

Changes including title and prerequisites: IPK 101, IPK 344/ANTH 344/SOC 344

Discontinuation: IPK 121, 122

New course: IPK 201, Introduction to Indigenous Resurgence

Changes including prerequisites: IPK 331/POSC 336; IPK 401, 402, 404; IPK 477/BIO 477

Changes including title, prerequisites, and total hours: IPK 332, 386

Changes including title, credits, and total hours: IPK 386

Change to total hours: IPK 403

There were concerns regarding the measurability of some of the verbs used in the learning outcomes for IPK 100. W. Victor (Indigenous Studies representative) will work with A. Grimson to submit revisions to the UEC Screening Subcommittee for final confirmation.

As the content of IPK 101 is actually being changed significantly, this will be offered as a new course, IPK 102, rather than a revision to IPK 101. The proposed IPK 201 will similarly be changed to IPK 202.

**MOTION:**

To approve the IPK course outlines and discontinuations as amended:

- IPK 100 learning outcomes will be revised to include measurable verbs
- IPK 101 changed to IPK 102, rather than revision to IPK 101
- IPK 201 changed to IPK 202

CARRIED

**3.14. Modern Languages: Course outlines**

Review with changes including prerequisites: FREN 101, 102

Review with changes including total hours: GERM 101, 102

Review with changes including prerequisites: JAPN 102

Review with changes: RUSS 101, 102

Review with changes including prerequisites: RUSS 201, 202

**MOTION:**

To approve the FREN, GERM, JAPN, and RUSS course outlines as presented.

CARRIED

**3.15. Theatre: Course outlines**

Changes including title and prerequisites: THEA 112

Changes including prerequisites: THEA 215

Changes including title and prerequisites: THEA 311

Changes including total course hours: THEA 312

New course: THEA 314, Postmodern Approaches to Physical Performance

Changes including prerequisites: THEA 315

Changes including prerequisites and total course hours: THEA 316

Changes including prerequisites, total course hours, and course number: THEA 450-351 (formerly THEA 351 450)

Changes including prerequisites and total course hours: THEA 451

Changes including title and total course hours: THEA 352

Changes including title, prerequisites, total course hours, and course number: THEA 452 (formerly THEA 353)

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**MOTION:**

To approve the Theatre course outlines as presented.

CARRIED

ABSTENTION: 1

**3.16. Theatre: Program changes**

Change to program requirements: Theatre diploma

Change to program requirements: Theatre extended minor and minor

**MOTION:**

To recommend the changes to the Theatre diploma as presented, effective September 2017.

CARRIED

ABSTENTION: 1

**MOTION:**

To approve the changes to the Theatre extended minor and minor as presented, effective September 2017.

CARRIED

ABSTENTION: 1

**3.17. Social, Cultural, and Media Studies: Course outlines**

Changes including title: SOC 250/GDS 250

**MOTION:**

To approve the SOC 250/GDS 250 course outline as presented.

CARRIED

ABSTENTION: 1

**3.18. Psychology: Course outlines**

Review with changes including prerequisites: PSYC 491

**MOTION:**

To approve the PSYC 491 course outline as presented.

CARRIED

**3.19. Upgrading and University Preparation: Course outlines**

New course: MATH 092, Algebra and Functions

New course: MATH 093, Trigonometry and Conics

Questions were raised regarding how upcoming changes to the high school curriculum will impact these courses. J. Larsen (UUP representative) noted that those changes are being monitored and revisions will be made as necessary, but pre-calculus is a relatively stable subject. There is also the need to prepare students for first-year calculus, and UUP will continue to communicate with the Mathematics and Statistics department to monitor how changes at this level will impact prerequisites for university-level courses.

**MOTION:**

To approve the MATH course outlines as presented.

CARRIED

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**4. OTHER BUSINESS/DISCUSSION ITEMS**

**4.1. Admissions Subcommittee report**

**4.2. Transfer Credit Subcommittee report**

**4.3. Policy Subcommittee report**

**5. INFORMATION ITEMS**

**5.1. Minor course changes** (outlines will be available at  
[www.ufv.ca/calendar/courseoutlines](http://www.ufv.ca/calendar/courseoutlines))

COMP 061, 062, 071, 081, 091

ENGL 310, 312, 350, 352, 361

GD 101

GEOG 314, 360, 364

IPK 277

MATH 085

THEA 111, 211

VA 390

**5.2. Standing Committees of Senate Rules for the Conduct of Business**

Revisions approved by Senate March 10, 2017

**5.3. Discontinuance of Adventure Tourism Training certificate**

**6. ADJOURNMENT**

The volume for this meeting was unusually large; in the future, measures may need to be taken to prevent having so many items come to a single meeting.

The meeting was adjourned at 12:43 pm.

**Memo for New Course: English 064**

**To:** Curriculum Committee, Faculty of Access and Continuing Education (FACE); Dr. Sue Brigden, Dean

**From:** Julia Dodge, Sheryl Newton, Upgrading and University Preparation (UUP) department

**Date:** March 9, 2017

**Subject:** Proposal for a new course Fundamental English 064

1. Rationale for the new course:

The UUP department currently offers fundamental-level ABE courses (e.g., ENGL 062; ENGL 063) that run for half a semester (i.e., 45 hours of contact time for each course) rather than a full semester. This delivery model does not meet the needs of those fundamental-level students who require more time to acquire the learning outcomes. This new course, ENGL 064, will run as a full-semester course with 90 hours of contact time so that students have more time to develop the foundational skills required for success in subsequent courses. ENGL 064 will be offered as an alternative to ENGL 062 and 063.

2. How this new course fits into program:

This fundamental-level English course is the first level of the provincial Adult Basic Education (ABE) English program.

3. Explain how the course learning outcomes align with the learning outcomes of the program:

The goal of Fundamental ABE English is to prepare students to succeed in Intermediate ABE English (071). The focus of the course will be on meeting the core competencies required at exit to ensure a solid foundation of requisite, basic skills. ENGL 064 aligns with other UUP ABE English courses as follows:

*Fundamental ABE English (ENGL 064): Mastery of various sentence structures; introduction to paragraph writing*

*Intermediate ABE English (ENGL 071): Mastery of various paragraph structures; introduction to the academic essay*

*Advanced ABE English (ENGL 081): Mastery of the academic essay; introduction to the research paper*

*Provincial ABE English (ENGL 091): Mastery of the literary essay; introduction to technical and professional writing*

4. Will this course be required by any program beyond the discipline?

No

5. Which program areas have been consulted about the course?

UUP English Working Group; UUP Department; ESL Department; Fundamental English Provincial Articulation Working Committee

6. What consideration has been given to indigenizing the curriculum?

"To create a culturally safe educational environment and foster a sense of belonging for Indigenous learners" (Strategic Plan Goal #4), English 064 will provide the time and space for students to see the interconnectedness of the distinct skills taught in Fundamental English and include written and oral Indigenous content that supports the personal and cultural identity of learners.

7. If this course is not eligible for PLAR, explain why:

The UUP department uses an internal assessment and placement process

8. Explain how each of the following will affect the budget for your area or any other area:

- a. Credit value: full-semester course will be 3 credit
- b. Class size limit: no change
- c. Frequency of offering: no change
- d. Resources required: no change

9. Are field trips required for this course?

No

10. Estimate of the typical costs for this course, including textbooks and other materials:

Tuition \$403.86 (2016/17); materials \$25; textbooks \$25 (or less). Most English 064 students will be eligible for the full BC Adult Upgrading Grant (AUG), which covers these costs. Free, online resources will be made available to students.



ORIGINAL COURSE IMPLEMENTATION DATE: January 2018  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval) April 2023  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------------|----|------------------|--|------------------------|--|--------------------------------------------|--|----------------------------|--|----------------------|--|--------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> ENGL 064                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Fundamental English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Access and Continuing Education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | <b>Department:</b> Upgrading & University Preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br><p>This course develops proficiency in: reading comprehension of short passages; basic vocabulary analysis and development; various sentence compositions; fundamental grammar and spelling rules; goal setting, time monitoring, and oral expression of ideas and opinions. An introduction to paragraph writing is included.</p> <p>Note: This course is not designed for English as a second language students.<br/>                 Note: Students with credit for ENGL 063 cannot take this course for further credit.</p>                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           | One of the following: ENGL 053 with a C or better, ENGL 062 with a C- or better, or UUP department permission (assessment may be required).                                                                                                                                                                                                                                                                                                                                                                                      |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s): <b>ENGL 061; ENGL 062 &amp; 063</b><br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                               |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OREg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 90</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Lecture hours</td> <td style="text-align: center;">45</td> </tr> <tr> <td>Seminars/tutorials/workshops (in class)</td> <td style="text-align: center;">45</td> </tr> <tr> <td>Laboratory hours</td> <td></td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td style="text-align: right;"><b>Total</b></td> <td style="text-align: center;"><b>90</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 45 | Seminars/tutorials/workshops (in class) | 45 | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>Total</b> | <b>90</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 45        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Seminars/tutorials/workshops (in class)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 45        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>90</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           | <b>Maximum enrolment (for information only): 25</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> once per semester                                                                                                                                                                                                                                                                                                                                                       |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b> Greg St. Hilaire                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date approved:</b> March 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           | <b>Date approved:</b> March 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date of posting:</b> April 7, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> Sue Brigden                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> March 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | <b>Date of meeting:</b> April 21, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                                         |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

**ENGL 064**
**University of the Fraser Valley Official Undergraduate Course Outline**
**Page 2 of 2**
**Learning Outcomes**

Upon successful completion of this course, students will be able to:

1. Demonstrate competence in decoding and analyzing vocabulary and short passages for meaning
2. Write effective, grammatically correct sentences using a variety of structures
3. Write short, structured paragraphs on familiar topics
4. Demonstrate effective problem solving, time management, and study skills for completing assignments
5. Exhibit effective listening and speaking skills to ask questions, present information, and express ideas

**Prior Learning Assessment and Recognition (PLAR)**

☐ Yes ☒ No, PLAR cannot be awarded for this course because placement is by internal UUP department assessment

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

May vary by instructor. Typically includes lecture, in-class discussions, group work, assigned readings and writings, testing of assignments, student-led activities

**Grading system:** Letter Grades: ☒ Credit/No Credit: ☐ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

| Author (surname, initials) | Title (article, book, journal, etc.)                                  | Current ed.              | Publisher   | Year |
|----------------------------|-----------------------------------------------------------------------|--------------------------|-------------|------|
| 1. Ivits, Shantel          | BC Reads: Adult Literacy Fundamental English Readers and Course Packs | <input type="checkbox"/> | BCCampus    | 2016 |
| 2. Watson, W et al         | ABE Int. Grammar                                                      | <input type="checkbox"/> | Prov. of BC | 1999 |
| 3. Bromberg, M et al       | 504 Absolutely Essential Words                                        | <input type="checkbox"/> | Barron's    | 2012 |
| 4. Glazier, T et al        | The Least You Should Know About English                               | <input type="checkbox"/> | Nelson      | 2014 |
| 5.                         |                                                                       | <input type="checkbox"/> |             |      |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

USB flash drive; UVF print card (approx. \$15)

**Typical Evaluation Methods and Weighting**

|                   |     |              |     |                   |   |            |      |
|-------------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:       | %   | Assignments: | 50% | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests:    | 25% | Lab work:    | %   | Field experience: | % | Shop work: | %    |
| Oral Presentation | 25% | Other:       | %   | Other:            | % | Total:     | 100% |

**Details (if necessary):**
**Typical Course Content and Topics**

1. Reading and vocabulary development
2. Sentence and paragraph writing and revising; journaling
3. Grammar and spelling development
4. Oral Communication, study skills and time management

**Memo for New Course**

To: **Dr. Sue Brigden, Dean, Faculty of Access and Continuing Education, UFV**

From: **Jan Oosterhof-Contant, Chair, Computer Working Group  
Upgrading and University Preparation**

Date: April 12, 2017

Subject: **Proposal for new course: Provincial Computer Studies - Computer Applications (Computers 092)**

1. Rationale for new course:

As indicated in the Memo for Course Changes for **Provincial Computer Studies – Graphics and Publishing (Computers 091)**

“The BC Articulated Learning Outcomes for the Provincial Level Computer Course states “because of the wide and ever expanding nature of computing applications, it is both impossible and undesirable to include all outcomes in a single course. A computing studies course at the provincial level will consist of a **minimum of two** from the following categories” of which there are **10 categories**. Consequently, any two Provincial Computer courses taught at UFV or throughout the province can be 100% different and still meet the prescribed learning outcomes for a Provincial Level Computer Course.

However, today’s students require computing acuity in more than 2 of the optional modules as prescribed in the BC Articulated Provincial Level Computer Course. Therefore, we propose that UFV’s Computers 091 be preserved as originally approved at UFV with only minor edits and deletions as required for the modules to match the BC Articulated Outcomes and that a second Provincial Level Course be created to include those modules currently articulated in the BC Articulated Provincial Level Computer Course that are not included in the **revised UFV’s Computers 091** course.”

The current articulated Computers 091 course at the Provincial level affords UFV the ability to create and offer two equally rigorous provincial level computer courses. The proposed courses are structured so that Computers 091 is more ‘artistically’ focused, while Computers 092 is more ‘applications’ focused; neither Computers 091 nor Computers 092 will replicate what is currently taught in Computer 100 level courses at UFV. Instead, the material taught in these courses will introduce students to a broad scope of current computer terminology and applications commonly used today. This division of learning outcomes also gives students an opportunity to choose which of the two (or both) courses is more amenable to their academic and employment needs.

In addition, the way in which the provincially articulated Computers 091 is currently designed makes it impossible to cover many of the key modules that are relevant for students today. Currently, the only way for students to access those modules that are

## Comp 092 – New Course Memo

not covered and yet important for academic or workplace skill development would be to repeat the Computers 091 course with the hope that different modules will be covered the second time.

Instead, offering a second 09 level course seems more prudent. A second clearly prescribed course (Computers 092) makes it possible for students to know what to expect from each 09 level course when registering. If the 09 level course remains as one course, students will only know that they will cover any 2 of 10 possible modules depending on the instructor.

Creating a second provincial level computer course also ensures that the 09 level courses at UFV will be taught consistently because the learning outcomes for each course will be covered within the semester. Moreover, any instructor teaching either course will have clear guidelines as to what learning outcomes are expected to be covered in each course.

2. How this new course fits into program(s):

Computers 092 will enhance the scope of computer applications and terminology that is currently available for students. Moreover, the course will be attractive to folks in the broader UFV community who will recognize the value of taking the course to upgrade their computer skills for academic and workplace skill development.

Another argument for adding a second provincial level computer course is that, currently, provincial level course options at UFV are limited for students wishing to graduate from UFV with an Adult Dogwood Diploma. Offering Computers 092 will give upgrading students an additional course option to meet their graduation requirements; it has been confirmed that students will be able to use Computers 091 and Computers 092 as two separate qualifying courses towards graduation requirements.

3. Explain how the course learning outcomes align with the learning outcomes of the program(s):

Students who complete Computers 092 will develop skills to meet the following learning outcomes as taken from the Institutional Learning Outcomes:

**1. Demonstrate information competency**

- a. gather, organize, and critically examine information
- b. effectively use technology as a tool to gather and evaluate information
- c. recognize the need to gather information from a variety of perspectives
- d. use information ethically

**2. Analyze critically and imaginatively**

- a. engage in the examination of ideas, issues, and problems
- b. organize information logically
- c. use divergent thinking to expand on ideas

Comp 092 – New Course Memo

3. **Use knowledge and skills proficiently**
    - a. demonstrate knowledge and skills specific to computer technology
    - b. apply their knowledge and skills to a variety of situations
  4. **Initiate inquiries and develop solutions to problems**
    - a. demonstrate a curiosity that results in inquiry
    - b. propose questions that encourage deliberation
    - c. evaluate the benefits and challenges of different solutions
  5. **Communicate effectively and respectfully.**
    - a. effectively present information using a variety of media
4. Will this course be required by any program beyond the discipline? **No** If so, how will this course affect that program or programs?
  5. Which program areas have been consulted about the course? **Upgrading and University Preparation, Faculty of Access and Continuing Education, and the BC Provincial Articulation Committee**
  6. If a new discipline designation is required, explain why: **N/A**
  7. What consideration has been given to indigenizing the curriculum?
    - a. **Incorporate Circle of Courage philosophy<sup>i</sup> into curriculum:**
      - i. creating a safe learning community where each learner feels welcomed and comfortable and affords learners a sense of emotional connection to instill the core value of belonging
      - ii. respecting the right for independence – instructor models, nurtures, demonstrates concepts, and gives feedback while encouraging learners to make decisions, solve problems, and show personal responsibility.
      - iii. providing opportunities for self-mastery through sequenced practice without competition
      - iv. identifying positive contributions of all learners
    - b. **Students will be encouraged to create their projects/assignments around topics that are relevant to their cultural, personal, or academic interests.**
  8. If this course is not eligible for PLAR, explain why: **N/A**
  9. Explain how each of the following will affect the budget for your area or any other area:  
**The fees for Comp 092 will be the same as the fees for Comp 091. There will be no additional instructor costs to UFV because Computers 091 will now be offered once a year, and Computers 092 will be offered once a year. Previously Computers 091 was offered two semesters a year. However, enrollments in Computers 091 have gone down due to tuition costs. It is anticipated that some students may enroll in both Computer 09 level courses, which will increase revenues. Further, those students who previously did not complete Computers 092 may also choose to**

Comp 092 – New Course Memo

**enroll in the course. Two Provincial Level courses may also result in a slight increase in overall enrollment.**

- a. Credit value **3 credits – no change**
- b. Class size limit **24 students – no change**
- c. Frequency of offering **annually – no additional costs**
- d. Resources required (labs, equipment) **Whereas Computers 091 was originally taught 2 times a year, Computers 091 will only be taught one semester and Computers 092 will be taught the alternate semester, so this does not affect resources required. Moreover, it is likely that the courses will be offered online.**

10. Are field trips required for this course? **No**

11. Estimate of the typical costs for this course, including textbooks and other materials:

**Optional Textbook - \$65.00; Portable Storage Device - \$10.00; Print card - \$2.00**

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<sup>i</sup> Source: Reclaiming Youth Network. "The Circle of Courage Philosophy." 2007.



ORIGINAL COURSE IMPLEMENTATION DATE: January 2018  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval) April 2023  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note: The University reserves the right to amend course outlines as needed without notice.**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------|----|------------------|--|------------------------|--|--------------------------------------------|--|---------------------------------------------|----|----------------------|--|--------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> COMP 092                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Provincial-Level Computer Studies: Computer Applications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Computer Applications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Access and Continuing Education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Department:</b> Upgrading and University Preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>This provincial-level computing course teaches intermediate and/or advanced computer skills in networking, programming, spreadsheets, database management, and online technologies. Students will use computer skills to develop problem solving and critical thinking skills and apply computer applications to real-life and workplace situations.                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | COMP 071 or equivalent. Note: Students should have basic English proficiency in order to be successful in this course.                                                                                                                                                                                                                                                                                                                                                                                                           |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                                  |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 90</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Instructor Guided Demonstration</td><td style="text-align: right;">10</td></tr> <tr><td>Online tutorials</td><td style="text-align: right;">15</td></tr> <tr><td>Laboratory hours</td><td></td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities and project work</td><td style="text-align: right;">65</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: right;"><b>90</b></td></tr> </table> |           | Instructor Guided Demonstration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10 | Online tutorials | 15 | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities and project work | 65 | Other contact hours: |  | <b>Total</b> | <b>90</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Instructor Guided Demonstration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online tutorials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 15        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities and project work                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 65        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>90</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Maximum enrolment (for information only):</b> 24<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> annually-alternate semesters                                                                                                                                                                                                                                                                                                                                            |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b> Greg St. Hilaire                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           | <b>Date approved:</b> September 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Date approved:</b> September 23, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | <b>Date of posting:</b> April 13, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> Dr. Sue Brigden                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | <b>Date approved:</b> September 23, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Date of meeting:</b> April 21, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                  |    |                  |  |                        |  |                                            |  |                                             |    |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

## Learning Outcomes

*Because of the dynamic nature of technology today, students will be taught how to think through the processes involved in using computer applications so that they gain the confidence and knowledge to become life-long technology users. This provincial-level computer course will cover an overview of the following categories with a comprehensive study of a minimum of four categories.*

Upon successful completion of this course, students will be able to:

### 1. Networking

- a. state advantages and disadvantages of using networks
- b. describe different network configurations (LAN, WAN, etc.)
- c. describe and diagram different network topologies (point-to-point, star, bus, etc.)
- d. describe the advantages and disadvantages of different network data transmission media (twisted pair, coaxial cable, optical fiber, and wireless)
- e. list and describe common network operating systems and network protocols
- f. describe various server models, including file servers and client/server systems
- g. list Internet/intranet similarities and differences
- h. describe management issues, including traffic analysis and security

### 2. Programming

***The Programming option is not to be considered as equivalent to or as a replacement for the Computer Science course articulated at the provincial level. The emphasis of the Computer Science course is software engineering. This option, focusing primarily on the elements of programming, introduces the learner to programming fundamentals. The learner will write programs in a high level language that demonstrate output only and input-process- output operations.***

- a. test, debug, and modify program code
- b. define data types and assign meaningful identifiers to constants and variables
- c. use input statements to access the keyboard and use output statements to display text and graphics
- d. use conditional expressions to alter program flow
- e. use iteration structures to create loops
- f. write simple procedures
- g. write programs to demonstrate mathematical processing and simple character and graphic manipulations

### 3. Advanced Spreadsheets

- a. enter, format, and edit data
- b. use and write advanced formulas
- c. create and modify charts and pivot tables
- d. create reports
- e. manage and analyze data
- f. create macros or use a programming language to customize a spreadsheet
- g. design a spreadsheet to analyze, interpret, and project outcomes in an applied situation

### 4. Database Management

- a. design and create flat file and relational databases
- b. maintain and modify the structure of existing databases
- c. correctly formulate queries
- d. create and edit forms
- e. create and edit reports
- f. explain various social and ethical issues involving databases

### 5. Online Technologies

- a. develop an online electronic portfolio which contains projects that demonstrate proficiency with computer software
- b. describe the concept of cloud computing and utilize cloud-based applications such as word processing, spreadsheets, online collaboration, photo-editing, online storage
- c. utilize electronic means for time and calendar management, task (to do) lists, user ID management, notes, and bookmark (favourite) synchronization
- d. create and publish a blog that includes text, pictures, and hyperlinks
- e. add and update an entry on a wiki
- f. create and publish an online video
- g. describe software that can be used to remotely access another computer
- h. describe the process to set up a home wireless network, configure encryption, connect computers to the network, and connect to wireless networks in other locations
- i. describe the benefits of Bluetooth technology, examples of Bluetooth devices, and Bluetooth setup procedures.
- j. compare and contrast various mobile computing technologies

### Prior Learning Assessment and Recognition (PLAR)

☒ Yes      ☐ No, PLAR cannot be awarded for this course because

### Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Instructional methods course will include demonstration and online instruction; online resources will be used extensively in this course.

COMP 092

University of the Fraser Valley Official Undergraduate Course Outline

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**Grading system:** Letter Grades: ☒ Credit/No Credit: ☐ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

**Typical Text(s) and Resource Materials**

|    | Author (surname, initials) | Title (article, book, journal, etc.)                                                  | Current ed.                         | Publisher        | Year |
|----|----------------------------|---------------------------------------------------------------------------------------|-------------------------------------|------------------|------|
| 1. | Townsend, Hain, Wolf       | Skills for Success                                                                    | <input checked="" type="checkbox"/> | Pearson          | 2013 |
| 2. | Connor, J.                 | Programming: Computer Programming for Beginners - Learn the Basics of Java, SQL & C++ | <input checked="" type="checkbox"/> | ISBN: 1518662587 | 2015 |
| 3. |                            |                                                                                       |                                     |                  |      |
| 4. |                            |                                                                                       |                                     |                  |      |
| 5. |                            |                                                                                       |                                     |                  |      |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

Access to a computer and a Portable Storage Device

**Typical Evaluation Methods and Weighting, which differs slightly between instructors**

|                |     |              |     |                   |   |            |      |
|----------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:    | 15% | Assignments: | 20% | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: |     | Projects     | 30% | Field experience: | % | Shop work: | %    |
| Portfolio:     | 35% | Other        |     | Other:            | % | Total:     | 100% |

**Details (if necessary):**

Instructors may choose to use portfolio, graded assignments, projects, or a combination of these and quizzes **plus** a final exam so that all methods and weightings combined equal 100%.

**Typical Course Content and Topics**

**1. Networking**

- a. network operating systems, protocols, and server models
- b. network data transmission media
- c. configurations, network topologies, internet/intranet, and management issues

**2. Programming**

- a. program code, data types, identifiers, input and output statements, conditional expressions
- b. iteration structures
- c. simple procedures and programs

**3. Advanced Spreadsheets**

- a. data, formulas, charts,
- b. customize, design, analyze, interpret spreadsheets

**4. Database Management**

- a. flat file and relational databases
- b. structure of databases,
- c. formulate queries, create and edit forms and reports
- d. social and ethical issues involving databases

**5. Online Technologies**

- a. online electronic portfolio
- b. cloud computing
- c. time and calendar management
- d. blogs, wikis, and online video
- e. home wireless network and Bluetooth technology

**Memo for New Course**

To: CACC, Alisa Webb

From: Graphic + Digital Design, BFA Major Working Group

Date: March 27, 2017

**Subject: Proposal for new course MEDA 222 Design Ethos and the Creative Practitioner**

1. Rationale for new course:

A lower-level introductory course focussed on design ethos and the role of the creative practitioner in the process of marketing, a range of marketing contexts, and how creative practitioners bring value to a marketing strategy. This knowledge is essential to real world creative practice.

2. How this new course fits into program(s): This course supports all BFA disciplines and any other UFV students interested in the creative side of marketing. The course introduces a range of marketing contexts including events, services, philanthropy, activism, and business; human-centered and empathetic approaches in the marketing process; and creative practitioners as agents of change. In future, this course will become a requirement in the Graphic and Digital Design diploma, the proposed BFA Major in graphic and digital design, and the Bachelor of Media Arts.

*Note: Adding this course to a program will usually require a program change request.*

3. Explain how the course learning outcomes align with the learning outcomes of the program(s):

- Apply critical thinking skills to visual communication problems
- Understand and utilize processes, tools and technology used in graphic design practice
- Develop strategies for planning, producing, and disseminating visual communications.
- Demonstrate a working knowledge of the creative industry
- Demonstrate functional competence with principles of visual organization, visual language, typography and theory as applied to visual communication problems.
- Apply business practices, ethics, and self-promotional strategies for professional development.
- Instil the value of creative practice in a range of professional settings
- Demonstrate an understanding of diverse creative and cultural practices in regional and global contexts

The course also meets outcomes for the Bachelor of Media Arts:

- Evaluate their role as content creators, and analyze the social impact of their work.
- Employ the basic skills required to run a small or self-employed business in this sector, including skills in project management, labour management, client relations, marketing and financial planning.
- Pitch ideas to funders using oral or written presentations.

4. Will this course be required by any program beyond the discipline? If so, how will this course affect that program or programs? BFAPC, Graphic and Digital Design, and Media Arts.

5. Which program areas have been consulted about the course? BFA Program Committee, BMA Program Committee, School of Business, and Arts Advising
6. If a new discipline designation is required, explain why: None
7. What consideration has been given to indigenizing the curriculum? The course enables the opportunity for projects with an indigenous focus.
8. If this course is not eligible for PLAR, explain why:
9. Explain how each of the following will affect the budget for your area or any other area:
  - a. Credit value – 3
  - b. Class size limit – 27
  - c. Frequency of offering – 1 x per year
  - d. Resources required (labs, equipment) – Mac, Adobe CC, Flexible classroom with moveable tables and chairs.
10. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded? Yes, field work is required using local transportation.
11. Estimate of the typical costs for this course, including textbooks and other materials: \$100

**CWC comments and responses:**

- Has the School of Business been consulted regarding possible overlap with this course?

*The School of Business has been consulted and the attached course includes recommended changes received from the Director and one of the marketing faculty.*



ORIGINAL COURSE IMPLEMENTATION DATE: January 2018  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval) April 2023  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------|----|------------------|--|------------------------|----|--------------------------------------------|--|----------------------------|--|----------------------|--|--------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> MEDA 222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Course Full Title:</b> Design Ethos and the Creative Practitioner                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Design Ethos                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Faculty:</b> Faculty of Humanities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Department (or program if no department):</b> Graphic Design                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Calendar Description</b><br><br>Explore and experience the role of the creative practitioner in the marketing process and as an agent of change. Discover how design brings value to products, services, causes, or events; create persuasive marketing experiences; implement in the field; and assess their impact.                                                                                                                                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                          |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>Transfer credit requested (OREg to submit to BCCAT):<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (if yes, fill in transfer credit form)<br><br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Total Hours:</b> 60<br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Lecture hours</td><td style="text-align: right;">24</td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: right;">24</td></tr> <tr><td>Laboratory hours</td><td></td></tr> <tr><td>Field experience hours</td><td style="text-align: right;">12</td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td></td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: right;"><b>60</b></td></tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 24 | Seminars/tutorials/workshops | 24 | Laboratory hours |  | Field experience hours | 12 | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>Total</b> | <b>60</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 24        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 24        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>60</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Maximum enrolment (for information only):</b> 27<br><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> Annually                                                                                                                                                                                                                                                                                                                                                             |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Department / Program Head or Director:</b> Karin Jager                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Date approved:</b> January 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Date approved:</b> January 13, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date of posting:</b> March 10, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Dean/Associate VP:</b> Jacqueline Nolte                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Date approved:</b> January 13, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Date of meeting:</b> April 21, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |    |                  |  |                        |    |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                          |  |

MEDA 222

University of the Fraser Valley Official Undergraduate Course Outline

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## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Articulate the roles of design ethos and of a creative practitioner in the marketing process
- Identify the creative practitioner as a change agent
- Describe target audiences and communications components
- Articulate the objectives of particular community groups, organizations, corporations, services, events, and/or activities as they relate to a marketing strategy
- Identify how a creative strategy can serve civic engagement to benefit the individual and society
- Execute a creative strategy for a sample product, service, cause, or event
- Prepare a creative brief
- Present a creative brief
- Generate concepts for collateral based on a creative brief
- Develop persuasive visual design content for marketing collateral
- Create content for social media
- Assess the ethics of persuasion in relation to their own civic identity and participation

## Prior Learning Assessment and Recognition (PLAR)

☒ Yes      ☐ No, PLAR cannot be awarded for this course because

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Project-based applied learning, guest lectures, presentations, and field work.

**Grading system:** Letter Grades: ☒ Credit/No Credit: ☐      Labs to be scheduled independent of lecture hours: Yes ☐ No ☐

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

|    | Author                           | Title (article, book, journal, etc.)                                                              | Current ed.                         | Publisher               | Year |
|----|----------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------|------|
| 1. | Visocky O'Grady, J., O'Grady, K. | A Designer's Research Manual: Succeed in Design by Knowing Your Clients and What They Really Need | <input checked="" type="checkbox"/> | Rockport Publishers     | 2009 |
| 2. | MacDonald, Bruce                 | The Bridge: The Role of Design in Marketing                                                       | <input checked="" type="checkbox"/> | Morgan James Publishing | 2008 |
| 3. | Solis, Brian                     | X: The Experience When Business Meets Design                                                      | <input checked="" type="checkbox"/> | Wiley                   | 2015 |
| 4. | O'Reilly, T.                     | This I know: Marketing Lessons from Under the Influence.                                          | <input checked="" type="checkbox"/> | Knopf                   | 2017 |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

Macintosh Computer, Adobe CC, internet, printing, supplies for product/event development as per course project.

## Typical Evaluation Methods and Weighting

|                |   |              |     |                   |     |            |      |
|----------------|---|--------------|-----|-------------------|-----|------------|------|
| Final exam:    | % | Assignments: | 80% | Midterm exam:     | %   | Practicum: | %    |
| Quizzes/tests: | % | Lab work:    | %   | Field experience: | 20% | Shop work: | %    |
| Other:         | % | Other:       | %   | Other:            | %   | Total:     | 100% |

**Details (if necessary):**

## Typical Course Content and Topics

### Week 1

Course introduction: What is marketing? What is design ethos? Why is it relevant to creative practitioners?

Introduction to markets. More than just consumers and customers: Social responsibility, human-centered experiences, sustainability, ethics, and civic engagement. How designers consider end-user experiences, the solution, and benefits. The discovery process and design inquiry in the broader context, design action, and its impact.

Review of course outline, establishing marketing teams. Brainstorming themes for a class project.

### Week 2

The marketing process. The structure of a marketing agency vs. the client-side management structure. Roles and responsibilities and working with creatives. The creative practitioner as an agent of change. Identify course project(s) – product, service, cause or event. Articulating a human-centered approach. Where are people communicating about their chosen project? Review existing marketing case studies. Conduct an analysis of the strengths, weaknesses, opportunities and threats (SWOT) of specific contexts.

Project work: Summarize the organization and current product, service, cause or event. Outline the objective and assess the need. Project 1 assigned.

### Week 3

An introduction to consumers and target markets and why they are an important aspect of a marketing strategy.

Project work: Determine a potential audience for a simple sample product, service, cause or event. Create persona(s).

Project 1 due & Project 2 assigned.

**Week 4**

Articulating comparative matrices and how they can be used to determine your point of difference and niche.  
Project 2 due & Project 3 assigned.

**Weeks 5-12**

Students will develop a simple sample product, service, cause or event and execute a marketing strategy to gain an appreciation of the various components and roles of marketing and creative practitioners in the marketing process.

**Week 5**

Understanding the need for a competitive analysis. Develop an appreciation for how marketing defines the need, benefit, reason-to-believe, dramatic difference, and call-to-action. Understand how the creative brief is used to articulate how to fulfill the target market's need for a product, service, cause or event considering implicit values of profit, efficiency, effectiveness, fairness, social impact and environmental impact.

Project work: Analyze the competition for a simple sample product. Examine the product, service, cause or event benefit and define the point of difference/niche. What message do you want to communicate?

Project 3 due & Project 4 assigned. Create, conduct and evaluate market research on your competitors.

**Week 6**

Understanding how products are developed through critical inquiry and based on research to date, determine the best marketing approach, direction and execution for everything (awareness, trial, and repeat/. Understand the role creative messaging in the product development. Project 5 assigned & Project 4 due.

Project work: Define/create a simple sample product, service, cause, or event. . Outline the personality, emotional rewards, product and service benefits and feature

**Week 7**

Understanding the importance of distribution, touch points, and positioning in the in the marketing process... Looking at audience personas. Reflecting on creative practitioners as agents of change.

Project 5 due & Project 6 assigned.

Project work Determining distribution, touch points, and positioning for a simple sample product, service, cause, or event to gain an appreciation of the various components and roles of marketing and creative practitioners in the marketing process...

**Week 8**

Understanding how marketing communications is used as a strategic tool and the role of creative practitioner in developing communication components. How does communication work? What are marketing communications components? Advertising, sales promotion, social media, traditional and non-traditional marketing collateral. Guerilla marketing. Creative briefs.

Project 6 due & Project 7 assigned. Create and produce an advertising and promotional strategy for your sample product, service, cause, or event. Develop creative briefs.

**Week 9**

Introduction to persuasion and the ethics of persuasion. Creating persuasive content. Using empathy and a human-centred approach. Utilizing visual marketing collateral and social media for creating experiences.

Project 7 due. Project 8 assigned. Implementing strategies and working with creative briefs.

**Weeks 10-12**

Understanding the various activities, roles and responsibilities in implementing a marketing strategy.. Understanding the role of key performance indicators for assessing impact and results. Implementing digital communication tools for different audiences and goals – Facebook, Twitter, Instagram, Mailchimp, Eventbrite, Crowdfunder, Adobe Spark, Hootsuite, landing pages, Google Ads, AdRoll. The role of search engine optimization (SEO). The role of Google AdWords in visual marketing strategies and social media extensions, how to create a report and determine improvements in the overall creative strategy.

Project work: Implementing marketing strategies for your simple sample product, service, cause, or event to gain an appreciation of the various components and roles of marketing and creative practitioners in the marketing process

**Week 12**

Project 9 assigned: Assessing impacts (positive and negative), and conducting self-evaluations.

**Week 13**

Project 8 and 9 due: Present marketing strategy for your sample product and the achieved results.

**Memo for Program Changes**

To: Alisa Webb

From: Karin Jager, GDD Department head and Chair of BFA GDD Major Program Working Group

Date: January 5, 2017

**Subject: Program change Bachelor of Fine Arts, Graphic Design Extended Minor**

1. Summary of changes (select all the apply):

- ☐ Program revision that requires new resources
- ☒ Addition of new course options or deletion or substitution of a required course
- ☐ Change to the majority of courses in an approved program
- ☐ Change to the duration, philosophy, or direction of a program
- ☐ Addition of a new field of specialization, such as a concentration
- ☐ Change in requirements for admission
- ☐ Change in requirements for residency or continuance
- ☐ Change in admission quotas
- ☐ Change which triggers an external review
- ☐ Deletion of a program not included in the Program Discontinuance policy
- ☐ Other – Please specify:

2. Rationale for change(s):

- The addition of VA101 Figure Drawing provides an alternative to VA113 Introduction to Drawing in the BFA Extended Minor. Both courses meet the drawing skills requirement for the BFA Extended Minor.
  - *MEDA 222 Design Ethos, Marketing and the Creative Practitioner* provides a solid introduction to the role of the creative practitioner in the world of marketing. This course supports all BFA disciplines using a project-based approach. The methods apply to a range of relevant contexts including events, services, philanthropy, activism and business. **Note: This course is in the approval process and will only be added when final approval is received.**
  - *MEDA 469 Design Thinking for Creative Leadership* offers an opportunity for students to work collaboratively with a range of disciplines using design thinking problem-solving methodology. The course emphasizes creative leadership and builds on skill sets innate to design practice.
3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes: N/A
4. What consideration has been given to indigenizing the curriculum? The addition of these course options enables students to explore an expanded range of indigenous contexts due to the project-based structure and delivery in the field.
5. Will additional resources be required? If so, how will these costs be covered? None.

6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program? These courses provide more choice.
7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline? No.
8. Identify any available resources that will be used to accommodate the program changes. (e.g. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.). The Mission campus GDD labs and dedicated classrooms provide the equipment and flexibility for these courses: D227 and D245 (a mixed use lab with 15 iMacs and 12 laptop seats).
9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed. No.
10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.  
*To be submitted by Jacqueline Nolte.*

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1

Program Revision

### **Graphic and Digital Design extended minor**

The Graphic and Digital Design extended minor may be paired with the Visual Arts major as part of the Bachelor of Fine Arts program, or with any other BFA extended minor as listed in the BFA section of the calendar.

Please note that the Graphic and Digital Design minor and extended minor culminate in upper-level courses that require a series of sequential skills obtained over several semesters. Introductory courses are offered in the fall, and students should expect to take sequential courses over the following winter, fall, and winter semesters to complete required coursework.

High demand graphic and digital design courses and directed studies (GD 498 and GD 499) are available during the summer semesters.

Some high-demand courses are available during the summer semesters.

High demand graphic and digital design courses and directed studies (GD 498 and GD 499) are available during the summer semesters. GD courses are generally not offered in the summer semesters except for GD 498 or GD 499.

The Graphic and Digital Design extended minor offers optional streams in Dynamic Media, Interactive Design, Communication Design, or Visual Identity.

1. Dynamic Media: GD 203, GD 216, and GD 303

This stream is image based and introduces motion graphics, video, kinetic typography, and character design for design projects and storytelling.

2. Interactive Design: GD 202, GD 204, and GD 358

This stream focuses on design for digital screens including websites, tablets, and mobile devices. Students are introduced to interface design, development, UX, and content management.

3. Communication Design: GD 101, GD 260, and GD 317

This stream introduces publishing, promotion, information design, and social responsibility. The emphasis is on problem solving and human-centered solutions in print and digital media.

4. Visual Identity: GD 101, GD 260, GD 374, and GD 375

This stream offers a foundation in communication design and introduces the field of brand identity including logo design, packaging design, and sustainability principles.

Upon successful completion of the Graphic and Digital Design extended minor, students will be able to:

- Demonstrate functional competence with principles of visual organization, visual language, typography, and theory as applied to visual communication problems.
- Apply critical thinking skills to visual communication problems.

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2

Program Revision

- Understand and utilize processes, tools, and technology used in graphic design practice.

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[2016 11 27-2017 02 21](#)

3

Program Revision

This section specifies the extended minor requirements only. Please refer to the Bachelor of Fine Arts section for information on additional requirements.

Lower-level requirements: 18 credits

1. GD 102 or AH 203
2. GD 154, GD 157, and GD 159
3. 6 credits of 100- or 200-level GD courses ([MEDA 222 may also be used for this requirement](#)):

For the Dynamic Media stream, choose GD 203 and GD 216.

For the Interactive Design stream, choose GD 202 and GD 204.

For the Communication Design stream, choose GD 101 and GD 260.

For the Visual Identity stream, choose GD 101 and GD 260.

~~Other lower-level courses include GD281 and MEDA 222.~~

Upper-level requirements: 15 credits

1. GD 361
2. 12 credits of 300- or 400-level GD courses (VA 360 [and MEDA 469](#) may also be used for this requirement):

For the Dynamic Media stream, choose GD 303.

For the Interactive Design stream, choose GD 358.

For the Communication Design stream, choose GD 317.

For the Visual Identity stream, choose GD 374 and GD 375.

~~Note: GD 281, GD 357, GD 498, and GD 499~~[MEDA 222 and MEDA 469 may also be used to meet ~~ing~~ GDD extended minor requirements.](#)

~~Other upper-level courses include GD357, MEDA 469, GD498 and GD499.~~

Memorandum

Date: February 10, 2017  
To: University-Wide Notification  
From: John English, Dean, Faculty of Applied and Technical Studies  
Re: Proposed new program to be submitted to the expedited approval process

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The Faculty of Applied and Technical Studies proposes a new certificate program called the Aircraft Maintenance Engineer M-license (AME M-license). The program is complementary to the existing Aircraft Maintenance Engineer S-license that prepares graduates to work on aircraft structure whereas the proposed M-license will prepare graduates to work on the mechanical systems of aircraft.

The proposed M-license program will follow strict Transport Canada prescribed content and require Transport Canada approval and oversight. UFV has the required personnel and staffing required by Transport Canada to offer approved programs by virtue of the existing S-license program.

The program is proposed to be “for-profit” targeted to international students and is customized for a contracted cohort intake that will be recruited and prepared by a private technical English language preparatory school (Dorset College) that specializes in—and has a lengthy successful track record—recruiting and preparing international students for applied and technical programs. Dorset contracts UFV under the terms of an articulation agreement for a minimum flat fee and requires UFV commit to specific deadlines for UFV program start (initially proposed to be October 2017).

The program runs on timelines that are not synchronized to academic semesters. It will be offered over 64 weeks in an intensive learning format. Infrastructure and space is available at the UFV Aerospace Campus at Abbotsford International Airport.

The Faculty of Applied and Technical Studies seeks to use the expedited approval process as it meets the following criteria prescribed in Policy 21:

There is funding available from an external source with time constraints.

There is a clearly demonstrable opportunity for revenue generation to specific demand with time constraints.

**Note:** The program proposal and additional documents will be available in *S:\Groups\UEC\2017-04-21...*



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note:** The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|----|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Number of Credits:</b> 8 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Introduction to Standard Aviation Practices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Standard Aviation Practices                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about standard shop practices, workplace safety, the fundamental concepts of aircraft design and construction, the types of tooling used in aerospace, various calibration techniques and the fundamentals of approved parts and materials.                                                                                                                                                                                                                                                                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                             |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OREg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 120</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td>45</td> </tr> <tr> <td>Laboratory hours</td> <td>60</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td>15</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>120</b></td> </tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 45 | Laboratory hours | 60 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 15 | Other contact hours: |  | <b>Total</b> | <b>120</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 60         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 15         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>120</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Explain safety policies and University of the Fraser Valley (UFV) regulations
- Explain WHMIS and use MSDS sheets
- Explain basic Mathematical concepts
- Explain basic Physics concepts
- Identify, select, and use aerospace tooling
- Explain tool calibration techniques
- Identify, select, and use approved parts and materials for aerospace applications
- Perform shop projects as identified on the master lesson plan

**Prior Learning Assessment and Recognition (PLAR)**

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

| Author (surname, initials) | Title (article, book, journal, etc.)          | Current ed.                         | Publisher   | Year |
|----------------------------|-----------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook  | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration               | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. Fraser, Bill            | CARS for the AME – 8 <sup>th</sup> Edition    | <input checked="" type="checkbox"/> | Bill Fraser | 2016 |
| 5.                         |                                               | <input type="checkbox"/>            |             |      |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

**Typical Evaluation Methods and Weighting**

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

**Typical Course Content and Topics**

**COURSE COMPONENTS:**

- A1 Explain course objectives and expectations
- A2 Explain responsibilities of students and instructors
- A3 Explain principles of the “successful student” program
- B1 Comply with company and government safety regulations
- B2 Identify and reduce fire, health, and safety hazards
- B3 Identify types and classes of fires and extinguishers
- B4 Identify and handle hazardous materials and use PPE
- C1 Use Imperial and Metric systems of measurement
- C2 Perform calculations and conversions for shop math
- C3 Describe matter and energy
- C4 Describe work, power, force, and motion
- C5 Describe gas and fluid mechanics
- D1 Use hand tools
- D2 Use power tools

**AMRT 100****University of the Fraser Valley Official Undergraduate Course Outline**

Page 3 of 3

- D3 Use measuring and layout tools
- D4 Explain tool calibration
- E1 Describe aircraft hardware
- E2 Perform exercises using aircraft hardware
- E3 Describe approved parts for aerospace application
- E4 Describe bogus parts

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:
  - AMRT 100-P1 (MSDS Research Project)
  - AMRT 100-P2 (Cable Clamp Project)
  - AMRT 100-P3 (Bucking Bar Project)
  - AMRT 100-P4 (Parts Identification)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 100-T1 (Workplace Safety and WHMIS)
- AMRT 100-T2 (Mathematics and Physics)
- AMRT 100-T3 (Tools and Measuring Devices)
- AMRT 100-T4 (Approved Parts and Materials)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|----|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 101                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Number of Credits:</b> 8 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aerodynamics and Aircraft Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Aerodynamics & Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br><p>This course provides students with a knowledge of fixed and rotary wing aerodynamics and introduces them to technical drawings, structural maintenance, repair, and inspection. Students will perform basic tasks using ferrous, non-ferrous, and non-metallic materials.</p>                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                             |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OREg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 120</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td>45</td> </tr> <tr> <td>Laboratory hours</td> <td>60</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td>15</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>120</b></td> </tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 45 | Laboratory hours | 60 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 15 | Other contact hours: |  | <b>Total</b> | <b>120</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 60         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 15         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>120</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Describe aerodynamics and flight stability
- Describe high speed aerodynamics
- Describe rotary wing aerodynamics
- Extract information from technical publications and interpret aircraft drawings
- Describe the major assemblies of fixed and rotary wing aircraft
- Explain truss, semi-monocoque, and monocoque construction
- Perform basic tasks using ferrous, non-ferrous, and non-metallic materials.

**Prior Learning Assessment and Recognition (PLAR)**

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

| Author (surname, initials) | Title (article, book, journal, etc.)          | Current ed.                         | Publisher   | Year |
|----------------------------|-----------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook  | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration               | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. Fraser, Bill            | CARS for the AME – 8 <sup>th</sup> Edition    | <input checked="" type="checkbox"/> | Bill Fraser | 2016 |
| 5.                         |                                               | <input type="checkbox"/>            |             |      |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

**Typical Evaluation Methods and Weighting**

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

**Typical Course Content and Topics:**
**COURSE COMPONENTS**

- A1 Describe aerodynamics and flight stability
- A2 Describe high speed aerodynamics
- A3 Describe rotary wing aerodynamics
- B1 Extract information from technical publications
- B2 Interpret aircraft drawings
- C1 Describe major assemblies of fixed and rotary wing aircraft
- C2 Describe wing and rotor arrangements and their construction
- C3 Explain truss, monocoque, and semi-monocoque, construction
- D1 Describe ferrous materials
- D2 Describe non-ferrous materials
- D3 Describe non-metallic materials

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:  
AMRT 101-P1 (Technical Information Extraction)  
AMRT 101-P2 (Basic Blueprint Reading-Transfer to Pattern)  
AMRT 101-P3 (Metal Working with Ferrous Metals)  
AMRT 101-P4 (Metal Working with Non-Ferrous Metals)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 101-T1 (Aerodynamics)
- AMRT 101-T2 (Technical Information and Drawings)
- AMRT 101-T3 (Aircraft Structural Components)
- AMRT 101-T4 (Aircraft Structural Materials)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 102                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Number of Credits:</b> 8 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Reciprocating Engines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about the design, maintenance, inspection, overhaul, and operating principles of reciprocating engines and will perform an engine disassembly, inspection, and reassembly.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OREg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 120</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: center;">45</td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">75</td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">0</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>120</b></td></tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 45 | Laboratory hours | 75 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>120</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 45         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 75         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>120</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 102

University of the Fraser Valley Official Undergraduate Course Outline

Page 2 of 3

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe reciprocating engine design and construction
- Describe operating principles
- Describe diesel engine technology
- Describe engine operation, instrumentation, and maintenance
- Perform engine removal, disassembly, and reassembly

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-----------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT    | 2008 |
| 4. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 5.                         |                                                 | <input type="checkbox"/>            |           |      |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 40% | Lab work:    | % | Field experience: | % | Shop work: | 60%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Describe reciprocating engine design and construction
- A2 Describe operating principles
- A3 Describe diesel engine technology
- B1 Describe engine operation, instruments, and maintenance
- B2 Describe engine removal and overhaul
- B3 Perform engine removal and overhaul
- B4 Perform engine reassembly
- B5 Perform engine inspection and installation

### LEARNING STEPS:

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:  
AMRT 102-P1 (Engine Removal and Overhaul)  
AMRT 102-P2 (Engine Reassembly)  
AMRT 102-P3 (Engine Installation and Inspection)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 102-T1 (Aircraft Reciprocating Engines)
- AMRT 102-T2 (Reciprocating Engines – Maintenance and Overhaul)
- AMRT 102-T3 (Reciprocating Engines – Installation and Inspection)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 103                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | <b>Number of Credits:</b> 8 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Reciprocating Engine Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Reciprocating Engine Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>This course provides students with introductory knowledge of the design, maintenance, inspection, and testing of systems used on aircraft reciprocating engines. A lesson on the principles of troubleshooting is included.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prelcorequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 120</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td style="text-align: center;">45</td> </tr> <tr> <td>Laboratory hours</td> <td style="text-align: center;">75</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td style="text-align: right;"><b>Total</b></td> <td style="text-align: center;"><b>120</b></td> </tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 45 | Laboratory hours | 75 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>120</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 45         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 75         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>120</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 103

University of the Fraser Valley Official Undergraduate Course Outline

Page 2 of 3

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe engine induction systems
- Describe engine exhaust systems
- Describe engine fuel system
- Describe engine starting systems
- Describe engine ignition systems
- Describe engine lubrication systems
- Describe engine cooling system
- Describe engine fire detection and protection systems
- Describe the principles of troubleshooting
- Perform reciprocating engine troubleshooting

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-----------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT    | 2008 |
| 4. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 5.                         |                                                 | <input type="checkbox"/>            |           |      |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 40% | Lab work:    | % | Field experience: | % | Shop work: | 60%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Describe engine induction system
- A2 Describe engine exhaust system
- A3 Describe engine fuel system
- A4 Describe engine starting system
- A5 Describe engine ignition system
- A6 Describe engine lubrication system
- A7 Describe engine cooling system
- A8 Describe engine fire detection/protection
- B1 Describe the principles of troubleshooting
- B2 Perform reciprocating engine troubleshooting

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Interpret manufacturer's troubleshooting charts
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a "pass" to provide proof of competency:  
AMRT 103-P1 (Engine Induction/Exhaust)  
AMRT 103-P2 (Engine Fuel, Starting, Ignition)  
AMRT 103-P3 (Engine Lube, Cooling, and Fire Systems)  
AMRT 103-P4 (Engine Troubleshooting)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 103-T1 (Engine Induction/Exhaust)
  - AMRT 103-T2 (Engine Fuel System)
  - AMRT 103-T3 (Engine Starting/Ignition)
  - AMRT 103-T4 (Engine Lube, Cooling, and Fire Systems)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note:** The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|-----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Number of Credits:</b> 10 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Hydraulic and Pneumatic Systems and Landing Gear                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Hydraulics and Landing Gear                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about basic hydraulic and pneumatic systems and move on to more complex installations in modern aircraft. Students will also be introduced to landing gear systems, including wheels, brakes, and tires used on aircraft.                                                                                                                                                                                                                                                                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prel/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                             |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 150</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td>45</td> </tr> <tr> <td>Laboratory hours</td> <td>105</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td>0</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>150</b></td> </tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 45 | Laboratory hours | 105 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>150</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 105        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>150</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Describe rigid and flexible fluid lines
- Perform tasks using rigid and flexible fluid lines
- Describe the principles of hydraulic and pneumatic power
- Perform tasks within a hydraulic system
- Perform tasks within a pneumatic system
- Describe landing gear components and operation
- Perform landing gear maintenance tasks
- Describe aircraft braking systems
- Describe anti-skid and autobrake systems

**Prior Learning Assessment and Recognition (PLAR)**

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

| Author (surname, initials) | Title (article, book, journal, etc.)          | Current ed.                         | Publisher   | Year |
|----------------------------|-----------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook  | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration               | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. GAH Company             | General Aircraft Hardware Company – Handbook  | <input checked="" type="checkbox"/> | GAH Company | 2016 |
| 5.                         |                                               | <input type="checkbox"/>            |             |      |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

**Typical Evaluation Methods and Weighting**

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 40% | Lab work:    | % | Field experience: | % | Shop work: | 60%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

**Typical Course Content and Topics:**

**COURSE COMPONENTS:**

- A1 Describe rigid fluid lines
- A2 Perform tasks using rigid fluid lines
- A3 Describe flexible fluid lines
- A4 Perform tasks using flexible fluid lines
- B1 Describe the principles of hydraulic power
- B2 Describe hydraulic system components and design
- B3 Describe hydraulic power systems
- B4 Perform tasks in a hydraulic system
- C1 Describe principles of pneumatic power
- C2 Describe pneumatic power systems
- C3 Perform tasks in a pneumatic system
- D1 Describe types and arrangement of landing gear
- D2 Describe landing gear components and operation
- D3 Describe other types of landing gear

- D4 Perform landing gear maintenance tasks
- E1 Describe aircraft wheels, tubes, and tires
- E2 Perform tasks for aircraft wheels, tubes, and tires
- E3 Describe aircraft braking systems
- E4 Describe anti-skid and autobrake systems
- E5 Perform tasks in a braking system

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:
  - AMRT 200-P1 (Rigid Fluid Line Fabrication and Test)
  - AMRT 200-P2 (Flexible Fluid Line Fabrication and Test)
  - AMRT 200-P3 (Hydraulic Component-Inspect, Service, Test)
  - AMRT 200-P4 (Pneumatic System Duct Inspection)
  - AMRT 200-P5 (Landing Gear Inspect and Service)
  - AMRT 200-P6 (Wheel and Tire Maintenance)
  - AMRT 200-P7 (Brake System-Inspect and Service)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 200-T1 (Hydraulic Power Systems)
- AMRT 200-T2 (Pneumatic Power Systems)
- AMRT 200-T3 (Landing Gear Systems and Maintenance)
- AMRT 200-T4 (Wheel and Brake Systems)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|-----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Number of Credits:</b> 10 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Structural Repair                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Aircraft Structural Repair                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about structural damage assessment, repair limits, and the types of inspection used for sheet metal structures. Students will fabricate parts from sheet metal and composite material.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prelcorequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                 |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 150</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: center;">45</td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">105</td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">0</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>150</b></td></tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 45 | Laboratory hours | 105 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>150</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 45         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 105        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>150</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |     |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe fabrication of sheet metal structure
- Describe structural fasteners
- Remove sheet metal damage and fabricate replacement parts
- Perform skin repairs with flush and surface patches
- Describe the types of repairs to composite material
- Perform composite material fabrication, damage repair, and inspection
- Explain maintenance tasks for transparent plastic materials.

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)          | Current ed.                         | Publisher   | Year |
|----------------------------|-----------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook  | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration               | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. GAH Company             | General Aircraft Hardware Company – Handbook  | <input checked="" type="checkbox"/> | GAH Company | 2016 |
| 5.                         |                                               | <input type="checkbox"/>            |             |      |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 40% | Lab work:    | % | Field experience: | % | Shop work: | 60%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Describe fabrication of sheet metal structures
- A2 Describe structural fasteners
- A3 Perform sheet metal fabrication
- B1 Remove sheet metal damage
- B2 Fabricate repair parts
- B3 Perform skin repairs with surface and flush patches
- B4 Perform final repair inspection
- C1 Describe composite material aircraft structure
- C2 Describe repairs to composite aircraft structure
- C3 Perform tasks for composite structure
- C4 Perform final inspections
- D1 Describe transparent plastic structures
- D2 Explain maintenance tasks for transparent plastics

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:  
AMRT 201-P1 (Sheet Metal Fabrication)  
AMRT 201-P2 (Corrosion Identification and Removal)  
AMRT 201-P3 (Sheet Metal Repair)  
AMRT 201-P4 (Composite Material Fabrication and Repair)  
AMRT 201-P5 (Final Inspection-Composite Repair)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 201-T1 (Sheet Metal Fabrication)
- AMRT 201-T2 (Sheet Metal Repair and Corrosion Removal)
- AMRT 201-T3 (Composite Aircraft Structure and Transparent Plastics)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 202                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Number of Credits:</b> 10 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Basic Electricity for Aircraft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about the use of AC and DC power systems in aircraft and the components used to protect and regulate electrical power.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 150</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: center;">75</td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">75</td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">0</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>150</b></td></tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 75 | Laboratory hours | 75 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>150</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 75         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 75         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>150</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe the principles of basic electricity
- Describe DC power generation systems and perform basic tasks in a DC power system
- Describe AC power generation systems and perform basic tasks in an AC power system
- Describe measuring instruments and perform circuit analysis
- Describe AC and DC motors and generators
- Service electrical system components

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)          | Current ed.                         | Publisher   | Year |
|----------------------------|-----------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook  | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration               | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. GAH Company             | General Aircraft Hardware Company-Handbook    | <input checked="" type="checkbox"/> | GAH Company | 2016 |
| 5.                         |                                               | <input type="checkbox"/>            |             |      |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Describe basic electricity-theory and principles
- A2 Describe Static Electricity
- A3 Describe Sources of Electricity
- A4 Describe current electricity and Ohms Law
- A5 Describe the construction of electrical circuits
- B1 Describe DC Power terms and values
- B2 Describe aircraft batteries
- B3 Perform maintenance tasks for DC power systems
- C1 Describe AC power generation
- C2 Describe AC circuits
- C3 Describe electron control devices
- C4 Perform maintenance tasks for AC power systems
- D1 Describe electrical generators
- D2 Describe electrical alternators
- D3 Describe motors and starting systems
- D4 Inspect and service electrical system components

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:  
AMRT 202-P1 (Current Electricity-Worksheet)  
AMRT 202-P2 (Electromagnet Construction)  
AMRT 202-P3 (Multimeters and Measurement-DC)  
AMRT 202-P4 (Electrical Circuit Construction)  
AMRT 202-P5 (Battery Charging and Circuit Analysis)  
AMRT 202-P6 (Multimeters and Measurement-AC)  
AMRT 202-P7 (Inspection and Servicing AC/DC Motors)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 202-T1 (Basic Electricity)
- AMRT 202-T2 (DC Electrical Power)
- AMRT 202-T3 (AC Electrical Power)
- AMRT 202-T4 (Electrical Motors and Generators)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note: The University reserves the right to amend course outlines as needed without notice.**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 203                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Number of Credits:</b> 8 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Electrical Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about electrical system power control and distribution, build basic wiring harnesses, and perform troubleshooting to determine the causes of faults.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prelcorequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 120</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: center;">40</td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">80</td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">0</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>120</b></td></tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 40 | Laboratory hours | 80 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>120</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 40         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 80         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>120</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Describe electrical circuits for small and large aircraft
- Describe electrical distribution and control in large aircraft
- Explain wiring diagrams and their symbols
- Use electrical system test equipment
- Perform maintenance tasks for electrical systems and troubleshoot faults
- Describe aircraft wiring installation
- Perform wire installation and harness construction
- Perform maintenance tasks using aircraft electrical connectors

**Prior Learning Assessment and Recognition (PLAR)**

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

| Author (surname, initials) | Title (article, book, journal, etc.)          | Current ed.                         | Publisher   | Year |
|----------------------------|-----------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook  | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration               | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. GAH Company             | General Aircraft Hardware Company – Handbook  | <input checked="" type="checkbox"/> | GAH Company | 2016 |
| 5.                         |                                               | <input type="checkbox"/>            |             |      |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

**Typical Evaluation Methods and Weighting**

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

**Typical Course Content and Topics:**
**COURSE COMPONENTS:**

- A1 Describe electrical circuits for small aircraft
- A2 Describe electrical control and distribution for small aircraft
- A3 Describe electrical circuits and control for large aircraft
- B1 Identify types and uses of aircraft wires
- B2 Describe wiring installation
- B3 Describe wire connectors and harnesses
- B4 Describe components used in electrical systems
- C1 Build electrical wiring harnesses
- C2 Use electrical system test equipment to T/S faults

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:  
AMRT 203-P1 (Battery Removal and Installation)  
AMRT 203-P2 (Service/Test and Alternator and Generator)  
AMRT 203-P3 (Basic Wiring Practices)  
AMRT 203-P4 (Electrical Harness Construction and Testing)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course  
AMRT 203-T1 (Aircraft Electrical Circuits)  
AMRT 203-T2 (Aircraft Wiring)  
AMRT 203-T3 (Electrical Circuit Maintenance)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note: The University reserves the right to amend course outlines as needed without notice.**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           | <b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Propellers and Propeller Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Propellers & Propeller Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about the types and functions of propellers, including propeller pitch and speed control systems and indication. Students will perform basic maintenance on propellers and will install propellers on engines.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prel/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 60</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: center;">30</td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">30</td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">0</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>60</b></td></tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 30 | Laboratory hours | 30 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>60</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>60</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 300

University of the Fraser Valley Official Undergraduate Course Outline

Page 2 of 3

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe theory and design of propellers
- Describe types and functions of propellers
- Describe methods of controlling propeller pitch
- Describe propeller control systems
- Describe propeller indication and ice control systems
- Describe propeller installation
- Install propellers
- Explain propeller maintenance practices
- Perform propeller inspection and minor repair
- Perform propeller adjustment and minor repair

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher   | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. GAH Company             | General Aircraft Hardware Company-Handbook      | <input checked="" type="checkbox"/> | GAH Company | 2016 |
| 5. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- |    |                                                          |
|----|----------------------------------------------------------|
| A1 | Describe theory and design of propellers                 |
| A2 | Describe types and functions of propellers               |
| B1 | Describe methods of controlling propeller pitch          |
| B2 | Describe propeller control systems                       |
| B3 | Describe propeller indication and ice protection systems |
| C1 | Describe propeller installation                          |
| C2 | Describe propeller maintenance practices                 |
| C3 | Perform propeller adjustment and minor repair            |

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:  
AMRT 300-P1 (Propeller Inspection)  
AMRT 300-P2 (Propeller Control-Worksheet)  
AMRT 300-P3 (Propeller Installation, Test, and Adjustment)  
AMRT 300-P4 (Propeller Minor Repair)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 300-T1 (Propellers-General)
- AMRT 300-T2 (Propeller Control and Indication)
- AMRT 300-T3 (Propeller Installation and Maintenance)
- AMRT 300-T4 (Approved Parts and Materials)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 301                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           | <b>Number of Credits:</b> 6 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Gas Turbine Engines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about the design, maintenance, inspection, and testing of aircraft gas turbine engines, including lessons on the inspection of gas turbine engines using the manufacturer's specific data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prelcorequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 90</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="padding: 2px;">Lecture hours</td> <td style="width: 50px;"></td> </tr> <tr> <td style="padding: 2px;">Seminars/tutorials/workshops</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="padding: 2px;">Laboratory hours</td> <td style="text-align: center;">60</td> </tr> <tr> <td style="padding: 2px;">Field experience hours</td> <td></td> </tr> <tr> <td style="padding: 2px;">Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td style="padding: 2px;">Online learning activities</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="padding: 2px;">Other contact hours:</td> <td></td> </tr> <tr> <td style="text-align: right; padding: 2px;"><b>Total</b></td> <td style="text-align: center; padding: 2px;"><b>90</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 30 | Laboratory hours | 60 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>90</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 60        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>90</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 301

University of the Fraser Valley Official Undergraduate Course Outline

Page 2 of 3

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe turbine engine design and construction
- Describe turbine engine operating principles
- Describe engine instrumentation
- Perform engine removal and installation
- Perform turbine engine inspection

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher   | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. GAH Company             | General Aircraft Hardware Company – Handbook    | <input checked="" type="checkbox"/> | GAH Company | 2016 |
| 5. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Describe turbine engine design and construction
- A2 Describe operating principles
- B1 Describe engine instruments
- B2 Perform engine removal and overhaul
- C1 Perform turbine engine inspection

### LEARNING STEPS:

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

- Practical assessments must indicate a “pass” to provide proof of competency:  
AMRT 301-P1 (Engine Maintenance Procedures)  
AMRT 301-P2 (Engine Inspections)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 301-T1 (Engine Operating Principles)
- AMRT 301-T2 (Engine Maintenance Procedures)
- AMRT 301-T3 (Engine Inspection Criteria)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note:** The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 302                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Number of Credits:</b> 6 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Gas Turbine Engine Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Aircraft Gas Turbine Engines                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about the design, maintenance, inspection, and testing of systems used on aircraft gas turbine engines. The course includes lessons on troubleshooting faults in gas turbine engine systems.                                                                                                                                                                                                                                                                                                                |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prel/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                          |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 90</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td>45</td> </tr> <tr> <td>Laboratory hours</td> <td>45</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td>0</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>90</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 45 | Laboratory hours | 45 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>90</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 45        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 45        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>90</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 302

University of the Fraser Valley Official Undergraduate Course Outline

Page 2 of 3

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe turbine engine induction systems
- Describe turbine engine exhaust systems
- Describe turbine engine fuel systems
- Describe turbine engine starting systems
- Describe turbine engine ignition systems
- Describe turbine engine lubrication systems
- Describe turbine engine cooling
- Describe turbine engine fire detection and protection systems
- Perform gas turbine engine troubleshooting exercises

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)             | Current ed.                         | Publisher   | Year |
|----------------------------|--------------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook     | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                  | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. GAH Company             | General Aircraft Hardware Company-Handbook       | <input checked="" type="checkbox"/> | GAH Company | 2016 |
| 5. Jeppesen                | A&P Technician – &Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Describe turbine engine induction system
- A2 Describe exhaust system
- A3 Describe fuel system
- A4 Describe starting system
- A5 Describe ignition system
- A6 Describe engine lubrication system
- A7 Describe turbine engine cooling
- A8 Describe fire detection/protection systems
- B1 Review principles of troubleshooting
- B2 Perform gas turbine engine troubleshooting

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

Practical assessments must indicate a “pass” to provide proof of competency:

- AMRT 302-P1 (Engine Induction, Exhaust, Fuel)
- AMRT 302-P2 (Engine Starting and Ignition)
- AMRT 302-P3 (Engine Oil System Servicing)
- AMRT 302-P4 (Gas Turbine Engine Troubleshooting)

**THEORY EXAMINATION(S):**

Formative exams and quizzes throughout the course

- AMRT 302-T1 (Gas Turbine Induction and Exhaust)
- AMRT 302-T2 (Gas Turbine Fuel Systems)
- AMRT 302-T3 (Gas Turbine Starting and Ignition)
- AMRT 302-T4 (Gas Turbine Lubrication, Cooling, and Fire Protection)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note:** The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 303                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Number of Credits:</b> 6 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Rigging                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Aircraft Rigging                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about basic aircraft stability, and procedures for rigging cable-controlled and push-pull rod-controlled systems. There is also a lesson on working with powered flight control systems.                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                          |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OREg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 90</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td>30</td> </tr> <tr> <td>Laboratory hours</td> <td>60</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td>0</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>90</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 30 | Laboratory hours | 60 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>90</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 60        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>90</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 303

University of the Fraser Valley Official Undergraduate Course Outline

Page 2 of 3

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Explain aircraft stability and control
- Describe aircraft surface balancing procedures
- Perform cable installation, adjustment, and rigging procedures
- Perform push-pull rod installation, adjustment, and rigging procedures
- Describe adjustments for hydraulically powered flight control systems

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher   | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-------------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT      | 2008 |
| 4. GAH Company             | General Aircraft Hardware Company-Handbook      | <input checked="" type="checkbox"/> | GAH Company | 2016 |
| 5. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen    | 2011 |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Review Aircraft Axis
- A2 Review Aircraft Stability
- A3 Describe flight controls
- B1 Describe cable construction
- B2 Perform cable maintenance and testing
- C1 Describe push-pull rod control systems
- C2 Perform push-pull rod system rigging
- D1 Describe powered flight control systems
- D2 Describe safety precautions for powered flight controls

### LEARNING STEPS:

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

Practical assessments must indicate a “pass” to provide proof of competency:

- AMRT 303-P1 (Cable Control System Inspection)
- AMRT 303-P2 (Cable Control System Rigging)
- AMRT 303-P3 (Perform Cable Repair)
- AMRT 303-P4 (Hydraulically Powered Controls-Worksheet)

**THEORY EXAMINATION(S):**

Formative exams and quizzes throughout the course

- AMRT 303-T1 (Stability and Control)
- AMRT 303-T2 (Cable Controlled Systems)
- AMRT 303-T3 (Push-Pull Rod Controlled Systems)
- AMRT 303-T4 (Hydraulically Powered Control Systems)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note:** The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 304                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | <b>Number of Credits:</b> 10 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Rotary Wing Aircraft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about the types of helicopter control systems, drive systems, standard maintenance practices and techniques used to control rotor vibration.                                                                                                                                                                                                                                                                                                                                                                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                            |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 150</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td>75</td> </tr> <tr> <td>Laboratory hours</td> <td>75</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td>0</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>150</b></td> </tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 75 | Laboratory hours | 75 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>150</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 75         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 75         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>150</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Describe rotary wing aircraft configurations
- Review the physics of flight for rotary wing aircraft
- Describe the types of flight controls used in helicopter control
- Describe rotary wing vibration and dampening
- Explain main and tail rotor drive systems
- Describe rotorcraft rigging procedures
- Perform maintenance tasks on helicopters

**Prior Learning Assessment and Recognition (PLAR)**

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-----------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT    | 2008 |
| 4. Jeppesen                | A&P Technician – Helicopters Textbook           | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 5. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

**Typical Evaluation Methods and Weighting**

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

**Typical Course Content and Topics:**
**COURSE COMPONENTS:**

- |    |                                                                        |
|----|------------------------------------------------------------------------|
| A1 | Describe configurations for Rotary Wing aircraft                       |
| A2 | Describe forces acting on the main rotor                               |
| A3 | Describe helicopter flight conditions                                  |
| B1 | Describe rotorcraft controls                                           |
| B2 | Describe rotorcraft stabilization                                      |
| B3 | Describe rotorcraft vibration and dampening                            |
| C1 | Describe helicopter power systems                                      |
| C2 | Explain rotor drive systems                                            |
| D1 | Describe rotorcraft rigging procedures                                 |
| D2 | Perform alignment and balance for semi-rigid rotor head                |
| D3 | Perform Track and Balance (simulated) of a main rotor head             |
| D4 | Perform testing, t/s, repair, removal, and adjustment of dynamic parts |

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

Practical assessments must indicate a “pass” to provide proof of competency:

- AMRT 304-P1 (Helicopter Flight and Controls - Worksheet)
- AMRT 304-P2 (Transmission Inspection and Servicing)
- AMRT 304-P3 (Helicopter Rigging)
- AMRT 304-P4 (Rotor Head Alignment and Balance)
- AMRT 304-P5 (Helicopter Maintenance Practices)

**THEORY EXAMINATION(S):**

Formative exams and quizzes throughout the course

- AMRT 304-T1 (Helicopter Configurations)
- AMRT 304-T2 (Helicopter Controls)
- AMRT 304-T3 (Helicopter Drive Systems)
- AMRT 304-T4 (Rotorcraft Maintenance Practices)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Instrumentation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Aircraft Instrumentation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about pressure- and temperature-monitoring instruments, gyroscopic instruments, directional indicating instruments, electronic instruments, and instruments used to identify the status of aircraft systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prel/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                     |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 60</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Laboratory hours</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td style="text-align: right;"><b>Total</b></td> <td style="text-align: center;"><b>60</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 30 | Laboratory hours | 30 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>60</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>60</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 400

University of the Fraser Valley Official Undergraduate Course Outline

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## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe pressure and temperature measuring instruments
- Describe gyroscopic instruments and inertial reference systems
- Describe directional indicating instruments
- Describe electronic instruments
- Describe fuel quantity and fuel flow measuring instruments

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-----------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT    | 2008 |
| 4. Jeppesen                | A&P Technician – Helicopters Textbook           | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 5. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Describe pressure measuring instruments
- A2 Describe temperature measuring instruments
- A3 Describe Pitot-Static systems
- B1 Describe the principles of gyroscopes
- B2 Describe Gyroscopic instruments
- B3 Describe Inertial Reference Units and GPS
- C1 Describe Compass operation
- D1 Describe fuel quantity, pressure, and fuel flow systems
- E1 Describe EADI and EHSI
- E2 Describe auxiliary instruments and components
- E3 Describe Instrument Mounting

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

Practical assessments must indicate a “pass” to provide proof of competency:

- AMRT 400-P1 (Pressure/Temperature Gauge Self-Tests)
- AMRT 400-P2 (Pitot-Static Maintenance and Testing)
- AMRT 400-P3 (Gyroscope Servicing and Test)
- AMRT 400-P4 (Simulated Compass Swing)
- AMRT 400-P5 (Fuel System-Self Tests)
- AMRT 400-P6 (Instrument Installation)

**THEORY EXAMINATION(S):**

- Formative exams and quizzes throughout the course
- AMRT 400-T1 (Pressure/Temperature Measuring Instruments)
- AMRT 400-T2 (Gyroscopic Instruments)
- AMRT 400-T3 (Directional Indicating Instruments)
- AMRT 400-T4 (Fuel System Instruments)
- AMRT 400-T5 (Electronic Instruments)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note: The University reserves the right to amend course outlines as needed without notice.**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 401                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Number of Credits:</b> 8 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Electronics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Aircraft Electronics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn the fundamentals of radio communications and navigational systems, the types and function of autopilot and flight management systems, the cautions for Electro Static Discharge Sensitive (ESDS) units, and will perform basic functions in electronic systems.                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 120</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: center;">60</td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">60</td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">0</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>120</b></td></tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 60 | Laboratory hours | 60 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>120</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 60         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 60         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>120</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Describe the fundamentals of radio communications
- Describe the navigational systems used in aircraft
- Describe other avionics systems such as cockpit voice recorders, flight data recorders, Traffic Collision Avoidance System (TCAS), and Weather Radar
- Describe the types of antennas used on aircraft
- Describe autopilot and flight management systems
- Describe precautions for working with Electro Static Discharge Sensitive (ESDS) units
- Perform basic electronic tasks in aircraft systems

**Prior Learning Assessment and Recognition (PLAR)**

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-----------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT    | 2008 |
| 4. Jeppesen                | A&P Technician – Helicopters Textbook           | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 5. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

**Typical Evaluation Methods and Weighting**

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

**Typical Course Content and Topics:**

**COURSE COMPONENTS:**

- A1 Describe the principles of radio operation
- A2 Describe basic radio components
- A3 Describe HF and VHF radio communications
- B1 Describe ADF
- B2 Describe VOR/DME
- B3 Discuss Area Navigation
- B4 Describe Transponders
- B5 Describe Instrument Landing Systems (ILS)
- B6 Describe the Emergency Locator Beacon (ELT)
- C1 Describe CVR and CDR systems
- C2 Describe Radio Altimeter
- C3 Describe GPWS and EGPWS
- C4 Describe weather radar
- C5 Describe TCAS system

**AMRT 401****University of the Fraser Valley Official Undergraduate Course Outline**

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- |    |                                                         |
|----|---------------------------------------------------------|
| D1 | Describe types of communication and navigation antennas |
| D2 | Describe handling, storage, and maintenance of antennas |
| E1 | Describe basic autopilot operation                      |
| E2 | Describe flight management systems                      |
| E3 | Describe flight directors                               |
| F1 | Describe precautions for ESDS units                     |
| F2 | Describe installation of circuit breakers               |
| F3 | Describe bonding, shielding, and static discharge       |
| F4 | Describe antenna installation                           |

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

Practical assessments must indicate a "pass" to provide proof of competency:

- AMRT 401-P1 (Radio Communications Worksheet)
- AMRT 401-P2 (Comm System Operational Check)
- AMRT 401-P3 (Nav System Operational Check)
- AMRT 401-P4 (Inspect/Operate Autopilot System)
- AMRT 401-P5 (Basic Avionics Installation)

**THEORY EXAMINATION(S):**

Formative exams and quizzes throughout the course

- AMRT 401-T1 (Fundamentals of Radio Communication)
- AMRT 401-T2 (Navigation Systems-1)
- AMRT 401-T3 (Navigation Systems-2)
- AMRT 401-T4 (Other Avionics Systems)
- AMRT 401-T5 (Antennas)
- AMRT 401-T6 (Autopilots and Flight Directors)
- AMRT 401-T7 (Avionics Installation and Maintenance)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note:** The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 402                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Number of Credits:</b> 6 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Aircraft Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Aircraft Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will learn about the function, purpose, components, and troubleshooting of hydraulic, pneumatic, fuel, ice and rain protection, fire protection, environmental control, and emergency equipment systems.                                                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                          |           | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OREg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 90</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td>30</td> </tr> <tr> <td>Laboratory hours</td> <td>60</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td>0</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>90</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 30 | Laboratory hours | 60 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>90</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 60        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>90</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 402

University of the Fraser Valley Official Undergraduate Course Outline

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## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe aircraft operating systems, including ice and rain protection, fire protection, environmental control, and emergency equipment
- Troubleshoot aircraft system faults using troubleshooting aids
- Perform maintenance tasks in aircraft systems

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)            | Current ed.                         | Publisher | Year |
|----------------------------|-------------------------------------------------|-------------------------------------|-----------|------|
| 1. Jeppesen                | A&P Technician – General Textbook & Workbook    | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook & Workbook   | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                 | <input checked="" type="checkbox"/> | US DOT    | 2008 |
| 4. Jeppesen                | A&P Technician – Helicopters Textbook           | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 5. Jeppesen                | A&P Technician – Powerplant Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 50% | Lab work:    | % | Field experience: | % | Shop work: | 50%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Describe fuel systems
- A2 Describe Ice and Rain protection systems
- A3 Describe Fire Protection system
- A4 Describe Environmental Control systems
- A5 Describe Emergency Systems and equipment
- A6 Troubleshoot aircraft system faults
- A7 Perform maintenance tasks in aircraft systems

### LEARNING STEPS:

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

Practical assessments must indicate a “pass” to provide proof of competency:

- AMRT 402-P1 (Fuel System Servicing)
- AMRT 402-P2 (Ice and Rain Protection-Inspect and Test)
- AMRT 402-P3 (Fire Detection System-Inspect and Test)
- AMRT 402-P4 (ECS-Inspect and Test)
- AMRT 402-P5 (System Troubleshooting)

**THEORY EXAMINATION(S):**

Formative exams and quizzes throughout the course

- AMRT 402-T1 (Aircraft Systems-1)
- AMRT 402-T2 (Aircraft Systems-2)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note:** The University reserves the right to amend course outlines as needed without notice.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 403                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | <b>Number of Credits:</b> 8 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Maintenance Practices I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>Students will perform tasks for non-destructive testing; corrosion inspection and removal; tire, wheel, and brake changes; fuel system maintenance; inspection and servicing of Environmental Control Systems (ECS); engine ground runs; weight and balance; and performance of a 100-hour inspection.                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                            |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 120</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td></td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td>30</td> </tr> <tr> <td>Laboratory hours</td> <td>90</td> </tr> <tr> <td>Field experience hours</td> <td></td> </tr> <tr> <td>Experiential (practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Online learning activities</td> <td>0</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>120</b></td> </tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 30 | Laboratory hours | 90 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 0 | Other contact hours: |  | <b>Total</b> | <b>120</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 30         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 90         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>120</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 403

University of the Fraser Valley Official Undergraduate Course Outline

Page 2 of 3

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Perform maintenance tasks in non-specific aircraft systems
- Perform maintenance tasks in aircraft systems
- Perform engine ground runs
- Perform a maintenance schedule on a helicopter and fixed wing aircraft
- Perform a weight and balance procedure

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

## Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

## Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

| Author (surname, initials) | Title (article, book, journal, etc.)              | Current ed.                         | Publisher | Year |
|----------------------------|---------------------------------------------------|-------------------------------------|-----------|------|
| 1. Jeppesen                | A&P Technician – General Textbook and Workbook    | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 2. Jeppesen                | A&P Technician – Airframe Textbook and Workbook   | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 3. AC43.13-1B/2B           | Federal Aviation Administration                   | <input checked="" type="checkbox"/> | US DOT    | 2008 |
| 4. Jeppesen                | A&P Technician – Helicopters Textbook             | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |
| 5. Jeppesen                | A&P Technician – Powerplant Textbook and Workbook | <input checked="" type="checkbox"/> | Jeppesen  | 2011 |

## Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

## Typical Evaluation Methods and Weighting

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 30% | Lab work:    | % | Field experience: | % | Shop work: | 70%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

## Typical Course Content and Topics:

### COURSE COMPONENTS:

- A1 Perform non-destructive testing (LPI)
- A2 Perform Weight and Balance on an Aircraft
- B1 Perform tire, wheel, and brake change
- B2 Perform aircraft towing
- B3 Perform aircraft jacking and levelling
- B4 Perform installation and rigging of floats/skis
- B5 Perform inspection/maintenance of combustion heater
- B6 Perform fuel system maintenance procedure
- B7 Perform maintenance on an anti-ice system
- B8 Perform maintenance on a fire detection system
- B9 Perform maintenance on an ECS component
- B10 Perform inspection/maintenance on the hydraulic system
- B11 Perform high pressure accumulator servicing
- B12 Perform engine ground run
- B13 Perform 100 hour inspection (fixed and rotary)

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

Practical assessments must indicate a “pass” to provide proof of competency:

- AMRT 403-P1: Perform NDT (Liquid Penetrant Inspection)
- AMRT 403-P2: Perform Weight and Balance on Aircraft
- AMRT 403-P3: Perform tire, wheel, and brake change
- AMRT 403-P4: Service High Pressure Accumulator
- AMRT 403-P5: Perform aircraft towing
- AMRT 403-P6: Perform aircraft jacking and levelling
- AMRT 403-P7: Perform installation and rigging of floats/skis
- AMRT 403-P8: Perform inspection/maintenance of combustion heater
- AMRT 403-P9: Perform fuel system maintenance procedure
- AMRT 403-P10: Perform operation, inspection, and testing of an anti-ice system
- AMRT 403-P11: Perform testing of a fire detection system
- AMRT 403-P12: Perform inspection and servicing of an ECS component
- AMRT 403-P13: Perform inspection/maintenance on Hydraulic system
- AMRT 403-P14: Perform high pressure accumulator servicing
- AMRT 403-P15: Perform engine ground run
- AMRT 403-P16: Perform 100 hour inspection (fixed and rotary a/c)

**THEORY EXAMINATION(S):**

Formative exams and quizzes throughout the course

- AMRT 403-T1 (Maintenance Procedures-Non Specific)
- AMRT 403-T2 (Maintenance Procedures-Systems)



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note: The University reserves the right to amend course outlines as needed without notice.**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|----|------------------|----|------------------------|--|--------------------------------------------|--|----------------------------|----|----------------------|--|--------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> AMRT 404                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Number of Credits:</b> 8 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Full Title:</b> Maintenance Practices II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | <b>Department (or program if no department):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Calendar Description:</b><br>This course applies prior learning to a number of maintenance tasks in the electrical, instrumentation, and avionics systems. There are also lessons for Canadian Aviation Regulations, Human Factors in Aviation Maintenance, and an introduction to Safety Management Systems.                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | Admission to the Aircraft Maintenance Engineer M-License certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number:<br>Cross-listed with:<br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                 |            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total Hours: 120</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: center;">35</td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">75</td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">10</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>120</b></td></tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Seminars/tutorials/workshops | 35 | Laboratory hours | 75 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 10 | Other contact hours: |  | <b>Total</b> | <b>120</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, different lettered courses may be taken for credit:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 35         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 75         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>120</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | <b>Maximum enrolment (for information only):</b><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b>                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Dean/Associate VP:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Date of meeting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                              |    |                  |    |                        |  |                                            |  |                            |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                             |  |

AMRT 404

University of the Fraser Valley Official Undergraduate Course Outline

Page 2 of 3

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Perform tasks in a typical aircraft electrical system
- Troubleshoot electrical system faults
- Perform tasks in the aircraft instrumentation system
- Perform maintenance tasks for avionics systems
- Describe Regulations and Documentation for Transport Canada Civil Aviation
- Describe Human Performance in Aircraft Maintenance (Human Factors)
- Identify the basics of Safety Management Systems

**Prior Learning Assessment and Recognition (PLAR)**

☐ Yes ☒ No, PLAR cannot be awarded for this course because Transport Canada Approval restricts PLAR

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

Presentations, online lessons, practical lab and workshop exercises

**Grading system:** Letter Grades: ☐ Credit/No Credit: ☒ Labs to be scheduled independent of lecture hours: Yes ☐ No ☒

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

|    | Author (surname, initials) | Title (article, book, journal, etc.)          | Current ed.                         | Publisher    | Year |
|----|----------------------------|-----------------------------------------------|-------------------------------------|--------------|------|
| 1. | Jeppesen                   | A&P Technician – General Textbook & Workbook  | <input checked="" type="checkbox"/> | Jeppesen     | 2011 |
| 2. | Jeppesen                   | A&P Technician – Airframe Textbook & Workbook | <input checked="" type="checkbox"/> | Jeppesen     | 2011 |
| 3. | Fraser, Bill               | CARS for the AME – 8 <sup>th</sup> Edition    | <input checked="" type="checkbox"/> | Fraser, Bill | 2016 |
| 4. |                            |                                               |                                     |              |      |
| 5. |                            |                                               |                                     |              |      |

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

- Basic toolbox
- Coveralls
- Personal safety equipment (PPE)

**Typical Evaluation Methods and Weighting**

|                |     |              |   |                   |   |            |      |
|----------------|-----|--------------|---|-------------------|---|------------|------|
| Final exam:    | %   | Assignments: | % | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 40% | Lab work:    | % | Field experience: | % | Shop work: | 60%  |
| Other:         | %   | Other:       | % | Other:            | % | Total:     | 100% |

**Details (if necessary):** The tests and shop work cannot be averaged – both sections must achieve a 70% grade to meet the minimum Transport Canada requirements.

**Typical Course Content and Topics:**

**COURSE COMPONENTS:**

- A1 Perform construction of electrical circuits
- A2 Perform electrical load analysis
- A3 Inspect and service electrical motors
- A4 Perform battery maintenance and charging
- A5 Troubleshoot electrical system faults
- A6 Remove, replace, test, troubleshoot generators/alternators
- B1 Perform functional test of a pitot static system
- B2 Perform functional test of an EGT system
- B3 Perform functional test of the FQIS system
- B4 Perform simulated compass swing
- C1 Perform check and inspection of a COMM and NAV system
- C2 Troubleshoot an avionics system using test equipment
- C3 Perform inspection and check of an autopilot system
- D1 Describe the Canadian Aviation Regulations (CARS)
- D2 Describe CAR Standards

- |    |                                                                                        |
|----|----------------------------------------------------------------------------------------|
| D3 | Describe Advisory Circulars and Alerting Documents                                     |
| D4 | Describe aircraft technical records, maintenance release, and logbook entry procedures |
| D5 | Describe the privileges of an AMO                                                      |
| E1 | Introduce the Dirty Dozen (Human Factors)                                              |
| E2 | Discuss the Dirty Dozen contributing factors for human error                           |
| E3 | Perform classroom exercises for the Dirty Dozen                                        |
| F1 | Introduce Safety Management Systems (SMS)                                              |
| F2 | Discuss the implementation of SMS in an AMO                                            |

**LEARNING STEPS:**

- Attend lectures and complete online lessons
- Perform worksheets and projects as described
- Perform projects to an acceptable level (pass/fail)
- Complete theory exams with a minimum grade of 70%

**PRACTICAL EXERCISES:**

Practical assessments must indicate a "pass" to provide proof of competency:

- AMRT 404-P1: Perform construction of an electrical circuit
- AMRT 404-P2: Perform electrical load analysis
- AMRT 404-P3: Inspect and service electrical motors
- AMRT 404-P4: Perform battery maintenance and charging
- AMRT 404-P5: Troubleshooting electrical system faults
- AMRT 404-P6: Generator/Alternator maintenance and testing
- AMRT 404-P7: Perform pitot-static test
- AMRT 404-P8: Perform functional test of EGT system
- AMRT 404-P9: Perform functional test of FQIS system
- AMRT 404-P10: Perform simulated compass swing
- AMRT 404-P11: Perform check and inspection of NAV/COMM system
- AMRT 404-P12: Troubleshoot an avionics system using test equipment
- AMRT 404-P13: Inspect and test an autopilot system

**THEORY EXAMINATION(S):**

Formative exams and quizzes throughout the course

- AMRT 404-T1 (Maintenance Procedures-Electrical System)
- AMRT 404-T2 (Maintenance Procedures-Instruments)
- AMRT 404-T3 (Maintenance Procedures-Avionics Systems)
- AMRT 404-T5 (Canadian Air Regulations-1)
- AMRT 404-T6 (Canadian Air Regulations-2)

**Memo for Program Changes**

To: Faculty of Science Curriculum Committee

From: Jeff Chizma (Head of the Physics Department)

Date: October 10, 2016

**Subject: Program change (insert program title)**

1. Summary of changes (select all the apply):

- ☐ Program revision that requires new resources
- ☐ Addition of new course options or deletion or substitution of a required course
- ☐ Change to the majority of courses in an approved program
- ☐ Change to the duration, philosophy, or direction of a program
- ☐ Addition of a new field of specialization, such as a concentration
- ☒ Change in requirements for admission
- ☐ Change in requirements for residency or continuance
- ☐ Change in admission quotas
- ☐ Change which triggers an external review
- ☐ Deletion of a program not included in the Program Discontinuance policy
- ☐ Other – Please specify:

2. Rationale for change(s):

We have many more applicants than seats available for the Engineering Transfer Program. In order to try and match the students with the best chance of success to the program, we are going to incorporate a competitive entry system. In addition, there have been some recent changes to the UBC admission rules, and they have been reflected in some changes in the Calendar language.

3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes:

N/A

4. What consideration has been given to indigenizing the curriculum?

Indigenization will always be considered in individual courses where appropriate. However, indigenization is encouraged at the program level through breadth/elective requirements where students can choose from courses where indigenization is appropriate to the course content and discipline.

5. Will additional resources be required? If so, how will these costs be covered?

N/A

6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program?

There are currently 24 seats reserved for students in the Engineering Transfer Program, with many more students applying than we have available seats. We expect that the increased stipulations on admission requirements will help select those students who will be most successful in the program. Enrolments will remain unchanged.

7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline?

N/A

8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.)

OReg has been consulted with regards to the interim grades and other entrance requirements, and they have agreed to help administer these changes going forward.

9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed.

N/A

10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

N/A

## Engineering Transfer program

UFV offers the first year of the Bachelor of Applied Science (Engineering) degree program for students wishing to transfer to the University of British Columbia or the University of Victoria. Upon completion of the UFV program, students will be allowed to enter the second-year Engineering programs at UBC and UVic without any additional qualifying courses, providing they meet the entrance requirements for the program at these institutions.

Students transferring to UBC or UVic from the UFV program with the minimum required GPA ~~are~~ ~~may be~~ ~~automatically~~ admitted to the UBC/UVic second year program. Once admitted, all students, regardless of their first-year institution, then compete for seats in different specialties based on their GPA; popular specialties have higher GPA requirements than the entrance GPA. UBC also allows admission from General Sciences, but may require a higher entrance GPA.

### Entrance requirements

Admission to the Engineering Transfer Program (ETP) is based on the following:

1. B.C. secondary school graduation or equivalent.
2. ~~Pre-Calculus 12 with at least a B. One of the following: B or better in one of Principles of Math 12 or Pre-calculus 12; or B average in MATH 094 and 095; or C+ or better in MATH 110; or at least 70% on the MDPT.~~
3. ~~Chemistry 12~~ ~~Physics 11 (Physics 12 is recommended), Chemistry 11, and Chemistry 12.~~
3. Physics 11. Physics 12 is strongly preferred.
4. English 12 or English Literature 12 with a minimum final grade of C+ or one of the other prerequisites for ENGL 105. ~~Applicants must meet the Degree/diploma-level English language proficiency requirement. For details on how this requirement may be met, see the English language proficiency requirement section of the calendar.~~

**Note 1:** UBC requires ETP transfer students to complete at least 12 of the 13 program courses in two semesters, with a minimum 2.8 GPA. Due to the demand for this program, UFV students must enrol in at least 12 of the program courses in two consecutive semesters. Admitted ETP students who do not enrol in the full program will be moved to the Bachelor of Science. Students who have already completed two or more program courses or who intend to spend two years at UFV should apply to the Bachelor of Science program instead. ~~UBC now guarantees admission only to transfer students who complete at least 12 of the 13 program courses in two semesters, with a 2.5 GPA. Due to the demand for this program, UFV admits only students who intend to complete at least 12 of the program courses in two consecutive semesters. Students who have already completed two or more program courses, students who do not intend to attempt all courses, and students who intend to spend two years at UFV should apply to the Bachelor of Science program instead.~~

Note 2: ~~Applicants~~If you are currently completing the course requirements, must submit an interim transcript with ~~your~~their application.

Note 3: Students offered conditional admission will have their files reviewed after receipt of final grades. Those falling below the complete minimum established for that year will be offered a place in the Faculty of Science.~~Students should note the prerequisites for the required ENGL 105 course.~~

Note 5: Applicants must provide an e-mail address, and they are expected to check (usually starting in March or April) regularly for mail. Students must respond to information sent to them in order to keep their application active.

Note 4: To successfully complete the Engineering Transfer program, a student must be academically strong. This program is best suited to students with a B average or better.

## **When to apply**

Applications are accepted for entrance to the Fall semester only. For application deadlines, see [Specific intake application process](#).

## **Basis for admission decision**

Seats will be competitively awarded based on the average of Chemistry 12, Physics 12, and Pre-Calculus 12. If these courses are not completed at the time of application, then the grades for the corresponding Grade 11 courses will be substituted. In all cases, if both the Grade 11 and 12 courses have been completed, then the better of the two grades will be used to calculate the GPA for admission. Students who do not have at least a B average in these three courses will not normally be considered for admission. Conditional admission may be granted to students with courses in progress at the time of application.

~~Applicants who meet the entrance requirements will be admitted in order of their application date. This date is set when an application, all required documentation, and the application fee have been submitted.~~

~~UFV admits only students who intend to complete at least 12 of the program courses in two consecutive semesters. Students who have already completed two or more program courses, students who do not intend to attempt all courses, and students who intend to spend two years at UFV should apply to the Bachelor of Science program instead.~~

**Memo for Program Changes**

To: Alisa Webb, Chair of the College of Arts Curriculum Committee

From: Shelley Stefan, Chair of BFA Program Committee

Date: Feb. 20, 2017

**Subject: Program change (Bachelor of Fine Arts)**

1. Summary of changes (select all that apply):

- ☐ Program revision that requires new resources
- ☒ **Addition of new course options or deletion or substitution of a required course**
- ☐ Change to the majority of courses in an approved program
- ☐ Change to the duration, philosophy, or direction of a program
- ☐ Addition of a new field of specialization, such as a concentration
- ☐ Change in requirements for admission
- ☐ Change in requirements for residency or continuance
- ☐ Change in admission quotas
- ☐ Change which triggers an external review
- ☐ Deletion of a program not included in the Program Discontinuance policy
- ☒ **Other – Please specify: addition of a requirement category; deletion of extraneous calendar copy.**

2. Rationale for change(s): **The original design of the BFA degree paralleled the structure of the BA degree at UFV. The upcoming launch of a new BA at UFV has triggered a comprehensive review of BFA general requirements. The update provides students with accurate course offerings in option lists and clarifies calendar copy to improve accessibility. As part of this review, the revision of BFA categories to parallel the new BA was considered, but we have opted to retain existing categories and titles at this time.**

3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes: **Neutral**

4. What consideration has been given to indigenizing the curriculum? **The BFA curriculum provides indigenous content to students at the level of declared programs; it is not embedded in the breadth requirements presented here.**

5. Will additional resources be required? If so, how will these costs be covered? **Not applicable.**

6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program? **Neutral.**

7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline? **Core requirements have not changed. However, we have expanded options for the Reasoning Lab Science requirements by adding discipline-specific options in each area. This will not impact the**

**number of sections offered but is expected to enhance subscription to existing sections of these courses.**

8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.) **N/A**
9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed. **Neutral.**
10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget. **Requested.**

**CWC comments and responses:**

- Does ARTS 100 still need to be mentioned at all, since this course has not been offered for some time?

*The reason the BFA program committee retained ARTS 100 is that we still have active students who took this course and may be able to use it toward degree requirements. However, it does create cleaner calendar requirements to omit it, and I can certainly obtain one-off approvals if I encounter students with credit for this course. Please delete reference to ARTS 100 in the writing and reasoning requirements.*

- Should the information in the Theatre practica section be updated to reflect changes in the structure of these courses? (Please confirm with the Theatre department.)

*We consulted with the Theatre department on the practica section prior to submission, and the information in the submission is what they confirmed as accurate.*

## BFA general requirements

Students in all BFA degree programs will complete the following general requirements.

### Writing requirement

Six credits from ENGL 105 (see Note 1) and any other 100-level English course, or CMNS ~~155~~125, or ~~ARTS 100~~ (see Note 2).

Note 1: Students who received an A in English 12 or equivalent (English Literature 12, English 12 First Peoples, IB English A (standard level or higher level), or AP English), ENGL 091, or ENGL 099 may replace the ENGL 105 requirement with any ENGL course numbered 108 or higher.

~~UFV's policy is that when a provincial exam is written for English 12, the higher of the school grade or the blended final grade is used.~~

Note 2: ~~The writing requirement~~written communication requirement may be met by CMNS 155 or ARTS 100 ~~can be used to meet three credits of writing requirement and meet the reasoning requirement if previously taken.~~

### Reasoning requirement

PHIL 100 or ~~AH 200~~ARTS 100.

Note: ~~The critical thinking~~reasoning requirement may be met by ARTS 100 ~~meets both the writing requirement and the reasoning requirement if previously taken.~~

### Lab Science requirement

One course from:

- ASTR 103 or 104
- BIO 100-level or higher
- CHEM 100-level or higher
- CIS 145, ~~146~~, 180, or 185, ~~or 245~~

- ~~GEOG 101, 102, 103~~ (~~previously~~~~formerly~~ [GEOG 101 and 102](#)), or 116
- [GD 204](#)
- KPE 163 or 170
- PHYS 100-level or higher
- PSYC 202 (~~see Note~~)

~~Note: This requirement may be met by PSYC 210 or PSYC 220 if previously completed.~~

#### **Elective Note: Theatre Practica**

BFA students may use a maximum of six credits from lower-level Theatre practica courses toward elective requirements in the degree program. Lower-level Theatre practica courses include THEA ~~199~~, 299, 290, and 295. Since each production represents a unique project, students may repeat THEA ~~199 or~~ 299 once, or THEA 290 or 295 multiple times for further elective credit towards the BFA degree, within the six credit maximum. Additional credit will only be granted when the work undertaken in each practicum represents a different production role.

## ~~Additional requirements for BFA with a Visual Arts major~~

~~See the **Visual Arts major** for details on course requirements.~~

### ~~Additionally, the 120 BFA credits must include:~~

- ~~• 60 studio credits, including 30 upper-level credits.~~
- ~~• 33 arts and lab science credits, including 12 upper-level credits (this includes the BFA general requirements in the areas of writing, lab science, and reasoning, as well as 21 credits in Art History).~~
- ~~• At least 15 upper-level credits that count towards the major must be completed at UFV.~~
- ~~• Bachelor of Fine Arts general requirements must be satisfied.~~

## Double extended minor requirements

Students wishing to concentrate on two subject areas can earn a Bachelor of Fine Arts degree by completing two of the following extended minors:

- **Art History** (see Note)
- **Creative Writing**
- **Fashion** ~~(if previously completed no longer offered)~~
- **Graphic and Digital Design**
- **Media and Communication Studies** (see Note)
- **Theatre**
- **Visual Arts**

Note: The BFA degree must contain at least one creative practice discipline. Extended minors in Art History and Media and Communications Studies cannot be combined with each other in the BFA degree. Students wishing to combine these two disciplines should pursue a BA degree.

To receive a Bachelor of Fine Arts degree with a double extended minor, students must complete all designated requirements in two discipline areas, plus one course from each of the following ~~two~~<sup>three</sup> areas:

- **Visual Literacy:** At least 3 credits from [ENGL 377](#), ~~FD 113~~, any Film Studies course, any Graphic Design course [except GD 102](#), or any Visual Arts course.
- **Performance Literacy:** At least 3 credits from ENGL 211, ENGL 381, [MUSC 199](#), or any Theatre course except [THEA 101](#), THEA 201-204, THEA 301, or THEA 401.
- ~~**Historical/Critical Literacy:** At least 3 credits from any Art History course, ENGL 115, ENGL 233/[THEA 203](#), ENGL 234/[THEA 204](#), ENGL 264, ENGL 364, ENGL 365, ENGL 373, FD 193, IPK 277, any MACS course, PHIL 250, PHIL 251, PHIL 252, THEA 201-204, THEA 301, or THEA 401.~~

Students admitted to the degree should seek advice from the BFA Academic Advisor regarding requirements. Declarations should be made with the BFA Academic Advisor when at least 30 credits have been completed.



**MEMORANDUM****TO:** CWC**FROM:** Nancy Goad, HCA program coordinator**DATE:** February 20, 2017**RE:** Grading policy Changes

With the changes having been approved to the grading system at UFV implemented in September 2016, the Health Care Assistant Program needs to re-align their grading system.

The HCA program currently has a passing grade of 75% for the academic courses. Until September 2016, the 75% was a "C" grade in this program. The faculty felt that it was important to retain a "C" grade as the passing grade for courses where an academic grade is given. In order to do so, the passing grade in the academic courses needs to be changed. Other HCA programs in the province use 65% as a passing grade. Faculty Council (February 10, 2016) approved a change to the passing grade for academic courses in the HCA program to 65%.

In addition, the lab and clinical courses are graded as Credit/ No Credit and this should be reflected in the continuance description in the calendar.

The calendar would be edited as follows:

Continuance

Due to the integrated nature of the courses, progression through the program requires successful completion of each course. Successful completion of each theory course requires a grade of ~~75%~~ 65% or better. Lab and clinical courses are graded as ~~satisfactory or unsatisfactory~~ credit or no credit.

**CWC comments:**

- Should a "C" grade be specified? Is there a specific reason to specify a percentage (65%), rather than a C grade (63%) minimum?

*65% is a narrower limit on this grade than the UFV "C" grade policy indicates, and 65% is the standard used by other HCA programs in the province. We felt that applicants and students should be aware of this.*

**Memo for Program Changes**

To: Amanda Grimson, UEC Committee Assistant; Jacqueline Nolte, Dean of Arts; Arts Committee Assistant

From: Dr. Wenona Victor

Date: January 18 2017

**Subject: Program change Indigenous Studies major and minor**

1. Summary of changes (select all the apply):
  - ☐ Program revision that requires new resources
  - ☒ Addition of new course options or deletion or substitution of a required course
  - ☐ Change to the majority of courses in an approved program
  - ☐ Change to the duration, philosophy, or direction of a program
  - ☐ Addition of a new field of specialization, such as a concentration
  - ☐ Change in requirements for admission
  - ☐ Change in requirements for residency or continuance
  - ☐ Change in admission quotas
  - ☐ Change which triggers an external review
  - ☐ Deletion of a program not included in the Program Discontinuance policy
  - ☐ Other – Please specify:
2. Rationale for change(s): (1) addition of course options to list of required electives to assist with laddering the SS diploma First Nations option into the IS major (2) deletion of redundant and/or courses no longer available and (3) clarifying need for six lower level credits in either IPK or FNST courses to ensure upper level credit requirements are met (see prereqs for IPK 344 which is a required course) thus ensuring IS majors have a minimum of 14 credits from IS or FNST courses (6 lower 8 upper).
3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes: na
4. What consideration has been given to indigenizing the curriculum? 100%
5. Will additional resources be required? If so, how will these costs be covered? na
6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program? No students at this point will be impacted. However those with SS diploma with FN option will be able to ladder into major/minor program with more credits
7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline? Six additional required lower level credits in IPK/FNST have been added to the major to ensure students

completing this program have at minimum four IPK or FNST courses. The upper level required IPK 344 now requires six credits to be from IPK/FNST lower level course offerings.

8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.)
9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed. na
10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

Deletion of courses

- GEOG 343 - discontinued
- POSC 333 – discontinued
- IPK 121
- IPK 122

Addition of courses

- HSER 200 and 250 to list 5 a
- SOWK 110 to list 2a
- HSER 120 to list 4a
- FREN 415 to list 4b

Renumbering of courses

- ANTH 468 now 368
- CMNS 365 now 465

Cross listing

- SOC 387 should be ANTH/SOC 387
- SOC 388 should be ANTH/LAS/SOC 388

IS majors are now required to take six credits from the following list: **IPK 100, 101, 201, 277, FNST 102, 201, 202**

**CWC comments and responses:**

1. SOWK 110 does not seem to match the other course in list 2a, Social Relations and Governance. Why is it included here?

*The ISCC subcommittee met and reviewed SOWK 110 and upon review of the course outline and a more in-depth discussion with Dr. Harding who has taught the course in the past it was*

*decided that this course does in fact fit under section 2a. Social Relations and Governance lower-level given its time dedicated to the history and social justice issues related to social work. It should also be noted that SOWK 110 is a required course for the Social Services diploma – First Nations option therefore including it in the list of potential electives assists with students laddering from the diploma to the degree.*

2. Both programs are not consistent with the requirements of the other Arts majors/minors. In general, a major consists of 5 to 6 lower-level courses and 8 to 10 upper-level courses. In general, a minor consists of 3 to 4 lower-level courses and 4 to 5 upper-level courses. The Academic Calendar defines a major as “A degree option in a particular subject area consisting of a defined set of courses, including a minimum of 30 upper-level credits.” Based on my calculation of the minimum number of upper-level credits stated in the major section of the proposal, a student will be completing 25 credits. This will need to change to conform to the standard. Requiring 10 courses at the lower-level is outside of the norm too, but I am not sure what could be removed to bring this down to six or eight courses.

*We have removed one lower-level course requirement bringing the total lower-level to 9 courses. We are recommending to keep it at 9 to accommodate the HALQ language revitalization and the applied skills learning outcome. We have adjusted the upper-level from a minimum of 25 credits to 29 credits.*

3. The minor requirements seem to be extremely rigid in comparison to the major and other Arts minors, in that students have zero options. I suggest the program working group consider a revamp of the minor requirements as follows, to allow students who start with the minor to transition more easily to the major:

**Lower-level: 12 credits**

- Two of HALQ 101, 102, 201, 202
- Two of IPK 100, 101, 201, 277, FNST 102, 202, 202

**Upper-level: 15 credits**

- Two (at most three) of IPK 331, 332, 344, 386, 401, 477
- Three (of two if above is three) courses chosen from Lists 1b, 2b, 3b, 4b, 5b

*We have implemented the lower-level recommendation, and gone with IPK 344 and 386 and one of IPK 331, 332, 401, 404, 477. We have gone with the second suggestion of Two courses chosen from Lists 1b, 2b, 3b, 4b, 5b.*

**Indigenous Studies Major and Minor**  
**(for Bachelor of Arts Degree students)**

This section specifies the Indigenous Studies Major and Minor requirements only. Please refer to the [Bachelor of Arts](#) for program requirements. Please check the Bachelor of Arts [residency](#) section of the calendar for how many upper-level credits must be completed at UFV in order to graduate with this program.

Note: please note that not all courses listed are offered every year and may have prerequisites.

**BA, Indigenous Studies Major**

|                                        | Lower-level courses (total <del>2730</del> credits)                                                                                                                              | Upper-level courses (total <del>29-3732</del> credits)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Credits               |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| <b>Halq' eméylem Language</b>          | Two of (or equivalent in another Indigenous language*): <a href="#">HALQ 101</a> (3), <a href="#">HALQ 102</a> (3), <a href="#">HALQ 201</a> (3) or <a href="#">HALQ 202</a> (3) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 6                     |
| <b>Indigenous Peoples Knowledge</b>    | Two of IPK 100 (3), 101 (3), 201 (3), 277 (3), FNST 102 (3), 201 (3), 202 (3)                                                                                                    | IPK 344: <i>Indigenous Research Methodologies</i> (4) and IPK 386: <i>Indigenous Worldviews in North America</i> (3)                                                                                                                                                                                                                                                                                                                                                                                                                                    | 13                    |
| <b>Indigenous History</b>              | ONE lower-level course from list <b>1a</b> (3)                                                                                                                                   | ONE upper-level course from list <b>1b</b> (3-4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6-7                   |
| <b>Social Relations and Governance</b> | ONE lower-level course from list <b>2a</b> (3)                                                                                                                                   | ONE upper-level course from list <b>2b</b> (3-4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6-7                   |
| <b>Land and Culture</b>                | ONE lower-level course from list <b>3a</b> (3)                                                                                                                                   | ONE upper-level course from list <b>3b</b> (3-4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6-7                   |
| <b>World View and Spirituality</b>     | ONE lower-level course from list <b>4a</b> (3)                                                                                                                                   | ONE upper-level course from list <b>4b</b> (3-4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6-7                   |
| <b>Applied Skills</b>                  | <del>ONE-TWO</del> lower-level courses from list <b>5a</b> ( <del>36</del> )                                                                                                     | Two upper-level courses from list <b>5b</b> and IPK 403: <i>Indigenous Studies Capstone</i> (6) or IPK 404: <i>Indigenous Studies: Directed Studies</i> (4) for total of 10-14 credits or IPK 402: <i>Indigenous Studies Field Work Practicum</i> (9) and one upper-level course from list <b>5b</b> for a total of 12-13 credits, or IPK 403: <i>Indigenous Studies Capstone</i> (6), for a total of 6-9 credits or IPK 404: <i>Indigenous Studies: Directed Studies</i> (4) and one upper-level course from list <b>5b</b> , for total of 7-8 credits | <del>10-1412-15</del> |
| <b>TOTAL Credits</b>                   |                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <del>56-6455-62</del> |

\*With equivalent learning outcomes of HALQ 101 and 102 or as determined via the submission of your language portfolio OR communication (letter, email, video, or visit) from your language teacher (post secondary teacher or family/community member) verifying your work toward -language revitalization.

Note: The same course cannot count toward more than one requirement.  
At least two of the courses selected from lists 1b, 2b, 3b and 4b must be IPK courses.

**BA, Indigenous Studies Minor**

| Lower-level courses (total <b>126</b> credits)                                                                                                                     |                                                                                                                                                                                  | Upper-level courses (total <b>17-1923</b> credits)                                                                                                                                                    | Credits      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Halq' eméylem Language</b>                                                                                                                                      | Two of (or equivalent in another Indigenous language*): <a href="#">HALQ 101</a> (3), <a href="#">HALQ 102</a> (3), <a href="#">HALQ 201</a> (3) or <a href="#">HALQ 202</a> (3) |                                                                                                                                                                                                       | 6            |
| <b>Indigenous Peoples Knowledge</b>                                                                                                                                | <a href="#">Two of IPK 100 (3), 101 (3), 201 (3), 277 (3), FNST 102 (3), 201 (3), 202 (3)</a>                                                                                    | IPK 344: <i>Indigenous Research Methodologies</i> (4)<br>and<br>IPK 386: <i>Indigenous Worldviews in North America</i> (3) <a href="#">and one of IPK 331 (4), 332 (4), 401 (4), 404 (4), 477 (4)</a> | <b>177</b>   |
| <b>Indigenous History (1b),<br/>Social Relations and Governance (2b),<br/>Land and Culture (3b),<br/>World View and Spirituality (4b),<br/>Applied Skills (5b)</b> |                                                                                                                                                                                  | <a href="#">IPK 331: History of Indigenous Leadership (4)</a> <a href="#">Two upper-level courses from list 1b, 2b, 3b, 4b and/or 5b (6-8)</a>                                                        | <b>6-84</b>  |
| <b>Social Relations and Governance</b>                                                                                                                             |                                                                                                                                                                                  | <a href="#">IPK 332: Indigenous Leadership: Yesterday and Today for Tomorrow II (4)</a>                                                                                                               | <b>4</b>     |
| <b>Land and Culture</b>                                                                                                                                            |                                                                                                                                                                                  | <a href="#">IPK 477: Traditional Ecological Knowledges (4)</a>                                                                                                                                        | <b>4</b>     |
| <b>World View and Spirituality</b>                                                                                                                                 |                                                                                                                                                                                  | <a href="#">IPK 401: Indigenous World View and Spirituality (4)</a>                                                                                                                                   | <b>4</b>     |
| <b>TOTAL Credits</b>                                                                                                                                               |                                                                                                                                                                                  |                                                                                                                                                                                                       | <b>29-31</b> |

[\\*With equivalent learning outcomes of HALQ 101 and 102 or as determined via the submission of your language portfolio OR communication \(letter, email, video, or visit\) from your language teacher \(post secondary teacher or family/community member\) verifying your work toward language revitalization.](#)

**BA, Indigenous Studies: Thematic Lists**

| Thematic List                                                                       |         |
|-------------------------------------------------------------------------------------|---------|
| Course Number/Course Title                                                          | Credits |
| <b>1a: Indigenous History, lower-level</b>                                          |         |
| <a href="#">ANTH 111</a> : First Nations in British Columbia – Traditional Cultures | 3       |
| <a href="#">FNST 101</a> : Stó:lō Nation Development                                | 3       |
| <a href="#">HIST 103</a> : Stó:lō History                                           | 3       |
| <a href="#">HIST 161</a> : Aztecs, Mayas and Spaniards                              | 3       |

|                                                                                             |   |
|---------------------------------------------------------------------------------------------|---|
| <b>1b: Indigenous History, upper-level</b>                                                  |   |
| <a href="#">IPK 331</a> : History of Indigenous Leadership                                  | 4 |
| <a href="#">ADED 365</a> : History of Aboriginal Adult Education in Canada                  | 3 |
| <a href="#">AH 321</a> : Canada: A Contact Zone                                             | 4 |
| <a href="#">HIST 327</a> : Settler-Indigenous Relations in New Zealand and Canada           | 4 |
| <a href="#">HIST 396i</a> : Topics in North American History: Rights, Title and Land        | 4 |
| <a href="#">HIST 399e</a> : Special Topics in History I: Films, Histories and Land          | 4 |
| <a href="#">HIST 426</a> : Aboriginal Peoples and Warfare in Canada: Pre-contact to Present | 4 |
| <a href="#">HIST 458</a> : History of Indigenous Peoples in Latin America                   | 4 |
| <a href="#">POSC 332</a> : The Politics of Multiculturalism                                 | 3 |
| <b>2a: Social Relations and Governance, lower-level</b>                                     |   |
| <a href="#">ANTH 211</a> : Aboriginal Peoples in BC: Contemporary Issues                    | 3 |
| <a href="#">ANTH 268</a> : Culture and Environment                                          | 3 |
| <a href="#">CRIM 211</a> : Indigenous Peoples, Crime and Criminal Justice                   | 3 |
| <a href="#">ENGL 240</a> : An Introduction to Canadian Literature                           | 3 |
| <a href="#">FNST 202</a> : Stó:lō Social Structure                                          | 3 |
| <a href="#">FNST 275</a> : Contemporary Issues and Policies in Aboriginal Education         | 3 |
| <a href="#">SOWK 110</a> : Introduction to Social Work and Human Services                   |   |
| <a href="#">SOC 210</a> : Social Problems of Canadian Society                               | 3 |
| <a href="#">SOC 270</a> : Dynamics of Racism in Canada                                      | 3 |
| <a href="#">VA 143</a> : Indigenous Art and Professional Practices                          | 3 |
| <b>2b: Social Relations and Governance, upper-level</b>                                     |   |
| <a href="#">ANTH/LAS/SOC 388</a> : Minority Indigenous Peoples of the World                 |   |
| <a href="#">IPK 332</a> : Indigenous Leadership II                                          | 4 |
| <a href="#">ADED 365</a> : History of Aboriginal Adult Education in Canada                  | 3 |
| <a href="#">GEOG 300F</a> : Special Topics in Geography                                     | 4 |
| <a href="#">GEOG 312</a> : Political Ecology: Nature, Culture and Place                     | 4 |
|                                                                                             | 4 |
| <a href="#">HIST 327</a> : Settler-Indigenous Relations in New Zealand and Canada           | 4 |
| <a href="#">POSC 301</a> : The Canadian State and Indigenous Governance                     | 3 |
| <a href="#">POSC 309</a> : Canadian Constitutional Politics                                 | 3 |
| <a href="#">POSC 332</a> : The Politics of Multiculturalism                                 | 3 |
|                                                                                             | 4 |
| <b>3a. Land and Culture, lower-level</b>                                                    |   |
| <a href="#">AH 100</a> : History of Art and Culture in a Global Context                     | 3 |
| <a href="#">AH 204</a> : Indigenous Art of the Northwest Coast                              | 3 |
| <a href="#">FNST 101</a> : Stó:lō Nation Development                                        | 3 |
| <a href="#">FNST 102</a> : Stó:lō Traditional Ways of Healing and Helping                   | 3 |
| <a href="#">IPK 277</a> : Indigenous Art: Stories and Protocols                             | 3 |
| <a href="#">VA 140</a> : Indigenous Design and Technology: Special Topics I                 | 3 |
| <a href="#">VA 141</a> : Indigenous Design and Technology: Special Topics II                | 3 |
| <a href="#">VA 142</a> : Indigenous Art and Design in Context                               | 3 |
| <a href="#">FNST 230</a> : Aboriginal Language and Culture Practicum (6 cr.)                | 6 |
| <a href="#">EDUC 290</a> : Introduction to Aboriginal Culture and Language Education        | 4 |
| <a href="#">EDUC 291</a> : Intermediate Studies in Aboriginal Culture and Language          | 4 |
| <a href="#">HALQ 201</a> : Intermediate Halq'eméylem I                                      | 3 |
| <a href="#">HALQ 202</a> : Intermediate Halq'eméylem II                                     | 3 |
| <a href="#">THEA 250</a> : Introduction to Storytelling                                     | 3 |
| <b>3b: Land and Culture, upper-level</b>                                                    |   |

|                                                                                      |   |
|--------------------------------------------------------------------------------------|---|
| ANTH/SOC 387: Aboriginal Peoples of Canada                                           |   |
| <a href="#">IPK 477</a> : Traditional Ecological Knowledges                          | 4 |
| <a href="#">FD 345</a> : Textile Traditions of Indigenous Peoples in Canada          | 3 |
| <a href="#">GEOG 447</a> : Aboriginal Geography                                      | 4 |
| <a href="#">HIST 396i</a> : Topics in North American History: Rights, Title and Land | 4 |
|                                                                                      | 3 |
|                                                                                      | 4 |
| <a href="#">SOWK 392</a> : Aboriginal Social Work                                    | 3 |
| <b>4a: World View and Spirituality, lower-level</b>                                  |   |
| <a href="#">ANTH 130</a> : Anthropology of World Religions                           | 3 |
| <a href="#">CMNS 180</a> : Introduction to Intercultural Communication               | 3 |
| <a href="#">FNST 201</a> : Stó:lō Communications & World View                        | 3 |
| HSER 120: Introduction to Interpersonal Communications                               |   |
|                                                                                      | 3 |
|                                                                                      |   |
| <a href="#">PHIL 240</a> : Faith and Reason: Philosophy of Religion                  | 3 |
| <a href="#">SOC 101</a> : Introduction to Sociology                                  | 3 |
| <b>4b: World View and Spirituality, upper-level</b>                                  |   |
| IPK 401: <i>Indigenous World View and Spirituality</i>                               | 4 |
| <a href="#">ANTH 368</a> : Environment and Society                                   | 4 |
| FREN 415: Myths, Tales and Legends in Francophone Literatures                        |   |
| <a href="#">PHIL 318</a> : Environmental Ethics                                      | 3 |
| <a href="#">PHIL 483D</a> : Myth and Philosophy                                      | 3 |
| <a href="#">RLST 380</a> : Religion, nature and Science                              | 3 |
| <a href="#">SOWK 392</a> : Aboriginal Social Work                                    | 3 |
| <b>5a: Applied Skills, lower-level, in Business, Management and Communication</b>    |   |
| <a href="#">BUS 100</a> : Introduction to Business                                   | 3 |
| <a href="#">BUS 201</a> : Human Resource Management                                  | 3 |
| <a href="#">BUS 202</a> : Contemporary Management                                    | 3 |
| <a href="#">BUS 203</a> : Organizational Behaviour                                   | 3 |
| <a href="#">BUS 204</a> : Introduction to Non-profit Management                      | 3 |
| <a href="#">CMNS 125</a> : Intro to Workplace Communication                          | 3 |
| <a href="#">CMNS 212</a> : Basic Public Relations and Advocacy Communication         | 3 |
| <a href="#">CMNS 235</a> : Oral Communications                                       | 3 |
| <a href="#">CMNS 251</a> : Professional Report Writing                               | 3 |
| <a href="#">CMNS 280</a> : Team and Small Group Communication for the Workplace      | 3 |
| HSER 200: Counselling Skills                                                         |   |
| HSER 250: Integration of Social Services Theory and Practice                         |   |
| <b>5b: Applied Skills, upper-level, in Business, Management and Communication</b>    |   |
| <a href="#">BUS 370</a> : Managerial Control                                         | 3 |
| <a href="#">BUS 377</a> : Management of Cooperatives                                 | 3 |
| <a href="#">BUS 408</a> : Teamwork in Organizations                                  | 3 |
| <a href="#">BUS 430</a> : Management of Innovation                                   | 3 |
| BUS 478: Work Spaces                                                                 | 3 |
| <a href="#">CMNS 312</a> : Introduction to Public and Community Relations            | 3 |
| <a href="#">CMNS 335</a> : Advanced Oral Communications for Professionals            | 4 |
| <a href="#">CMNS 351</a> : Professional Formal Research Report Writing               | 3 |
| <a href="#">CMNS 353</a> : The Responsibility of Using Research in the Workplace     | 3 |
| <a href="#">CMNS 360</a> : Advocacy Writing                                          | 4 |
| <a href="#">CMNS 465</a> : Grant and Proposal Writing                                | 3 |

|                                                                                             |   |
|---------------------------------------------------------------------------------------------|---|
| <a href="#">CMNS 380</a> : The Cross-Generational Workplace: Closing the Communications Gap | 3 |
| <a href="#">CMNS 420</a> : Virtual Team Communication                                       | 4 |
| <a href="#">CMNS 430</a> : Project Management Communication in Action                       | 3 |
| <a href="#">CMNS 445</a> : Facilitating Skills for the Workplace                            | 4 |

DRAFT

**Memo for Program Changes**

**To:** Alisa Webb – Chair, College of Arts Curriculum Committee

**From:** Ian Affleck - Department Head, Mathematics and Statistics

**Date:** February 24, 2017

**Subject:** Program changes to Math Major (for BA Students)

1. Summary of changes (select all the apply):

- ☐ Program revision that requires new resources
- ☒ Addition of new course options or deletion or substitution of a required course
- ☐ Change to the majority of courses in an approved program
- ☐ Change to the duration, philosophy, or direction of a program
- ☐ Addition of a new field of specialization, such as a concentration
- ☐ Change in requirements for admission
- ☐ Change in requirements for residency or continuance
- ☐ Change in admission quotas
- ☐ Change which triggers an external review
- ☐ Deletion of a program not included in the Program Discontinuance policy
- ☒ Other – Please specify: Minor edits to calendar description.

2. Rationale for change(s):

- The Mathematics major (for BA students) and the Mathematics extended minor (for BA students) currently requires MATH 225, while the Math Major for BSc requires either MATH 225 or MATH 255. The proposed change will require students in any Math major or Math extended minor to complete either MATH 225 or MATH 255. This relaxation of the requirements in math programs for BA Students will help students to complete their degrees in a reasonable amount of time. MATH 225 is offered only once every 2 years. Thus, if it is offered in a student's third year of study, and they are for some reason unable to take it in that semester, they may not be able to finish their program within 4 years. Meanwhile, MATH 255 is offered every year, and serves as well as MATH 225 as a second year breadth course in the discipline. Thus **MATH 255 has been introduced as an option alongside MATH 225 in the Mathematics major (for BA students).**
- COMP 120 is a relatively new course at UFV which includes a variety of applications of computing. For students who do not expect to be doing a great deal of programming, this course is an attractive alternative to COMP 150 and COMP 152, which focus exclusively on programming. The Department of Mathematics and Statistics is requesting that COMP 120 be allowed as a new option to satisfy the computing requirement in all of our programs that have such a requirement. Thus **COMP 120 has been introduced as an option alongside COMP 150 and COMP 152 in the Mathematics major (for BA students).**

- MATH 235 has been discontinued as a course at UFV, has not been offered in over 10 years, and has not been in the UFV Academic Calendar since 2011-2012. The Department of Mathematics and Statistics is requesting that MATH 235 be removed as an option to satisfy the computing requirement in all of our programs that currently include it. Thus **MATH 235 has been deleted as an option alongside COMP 150 and COMP 152 in the Mathematics major (for BA students).**
  - The following text has been included in the calendar program description preamble: “Note: students pursuing a Mathematics major may not also declare a Mathematics extended minor, a Mathematics minor, or a Mathematics minor (Statistics Option).”
3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes:

Program outcomes are neither new nor substantially changed.
  4. What consideration has been given to indigenizing the curriculum?

The Department of Mathematics and Statistics did not see opportunities for meaningful considerations towards indigenizing the curriculum in making these minor program requirement changes.
  5. Will additional resources be required? If so, how will these costs be covered?

No additional resources will be required.
  6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program?

These changes provide more options for students to complete the program requirements. We expect that the changes may increase enrolment in the program, although not dramatically.
  7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline?

There is no change to the number of required or elective credits from the discipline of Mathematics and Statistics.
  8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.)

No such accommodation is required.
  9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed.

There is no change to the number of required or elective courses from other disciplines.

10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

## Mathematics major (for BA students)

This section specifies the mathematics major discipline requirements only. Information on additional Bachelor of Arts requirements begins in [this section](#), and includes the requirements for [declaring](#) a major. Please check the Bachelor of Arts [residency](#) section of the calendar for how many upper-level credits must be completed at UFV in order to graduate with this program.

Note: students pursuing a Mathematics major may not also declare a Mathematics extended minor, a Mathematics minor, or a Mathematics minor (Statistics Option).

### Lower-level requirements: 27–28 credits

| Course                   | Title                                               | Credits |
|--------------------------|-----------------------------------------------------|---------|
| MATH 111                 | Calculus I                                          | 4       |
| MATH 112                 | Calculus II                                         | 4       |
| or MATH 118              | Calculus II for Life Sciences                       |         |
| MATH 211                 | Calculus III                                        | 3       |
| MATH 221                 | Linear Algebra                                      | 3       |
| MATH 225                 | Topics in Discrete Mathematics                      | 3       |
| or MATH 255              | <a href="#">Ordinary Differential Equations</a>     |         |
| MATH 265                 | Transition to Advanced Mathematics                  | 3       |
| MATH 270/<br>STAT 270    | Introduction to Probability and Statistics          | 4       |
| <a href="#">COMP 120</a> | <a href="#">Computing for the Sciences</a>          | 3-4     |
| or COMP 150              | Introduction to Programming                         | 3-4     |
| or COMP 152              | Introduction to Structured Programming              |         |
| or MATH 235              | <del>Mathematical Modeling (formerly offered)</del> |         |

### Upper-level requirements: 30 credits

| Course       | Title                                       | Credits |
|--------------|---------------------------------------------|---------|
| MATH 312     | Vector Calculus                             | 3       |
| MATH 322     | Complex Variables                           | 3       |
| MATH 340     | Introduction to Analysis                    | 3       |
| MATH 339     | Introduction to Applied Algebraic Systems   |         |
| or MATH 439  | Modern Algebra (see Note 1)                 | 3       |
| <b>Plus:</b> |                                             |         |
| MATH         | 300- or 400-level MATH courses (see Note 1) | 9       |
| <b>Plus:</b> |                                             |         |
| MATH or STAT | 300- or 400-level MATH or STAT courses      | 9       |

Note 1: At least nine MATH credits must be at the 400 level.

Note 2: Students may use PHYS 381 as part of the 30 upper-level credits; however, PHYS 381 cannot be used to satisfy requirements of a math program as well as requirements of a physics program.

## **Course listings**

For complete details on courses see the [MATH](#) or [STAT course descriptions](#) section.

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## **Search Academic Calendar**

**Memo for Program Changes****To:** Alisa Webb – Chair, College of Arts Curriculum Committee**From:** Ian Affleck - Department Head, Mathematics and Statistics**Date:** February 24, 2017**Subject:** Program changes to

- **Mathematics extended minor (for BA students)**
- **Mathematics minor (for BA and BGS students)**
- **Mathematics extended minor (Statistics option) (for BA students)**
- **Mathematics minor (Statistics option) (for BA and BGS students)**

## 1. Summary of changes (select all the apply):

- ☐ Program revision that requires new resources
- ☒ Addition of new course options or deletion or substitution of a required course
- ☐ Change to the majority of courses in an approved program
- ☐ Change to the duration, philosophy, or direction of a program
- ☐ Addition of a new field of specialization, such as a concentration
- ☐ Change in requirements for admission
- ☐ Change in requirements for residency or continuance
- ☐ Change in admission quotas
- ☐ Change which triggers an external review
- ☒ Deletion of a program not included in the Program Discontinuance policy
- ☒ Other – Please specify: Minor edits to calendar description

## 2. Rationale for change(s):

- The Mathematics major (for BA students) and the Mathematics extended minor (for BA students) currently require MATH 225, while the Mathematics Major (for BSc students) requires either MATH 225 or MATH 255. The proposed change will require students in any Math major or Math extended minor to complete either MATH 225 or MATH 255. This relaxation of the requirements in math programs for BA Students will help students to complete their degrees in a reasonable amount of time. MATH 225 is offered only once every 2 years. Thus, if it is offered in a student's third year of study, and they are for some reason unable to take it in that semester, they may not be able to finish their program within 4 years. Meanwhile, MATH 255 is offered every year, and serves as well as MATH 225 as a second year breadth course in the discipline. Thus **MATH 255 has been introduced as an option alongside MATH 225 in the Mathematics extended minor (for BA students).**
- COMP 120 is a relatively new course at UFV which includes a variety of applications of computing. For students who do not expect to be doing a great deal of programming, this

course is an attractive alternative to COMP 150 and COMP 152, which focus exclusively on programming. The Department of Mathematics and Statistics is requesting that COMP 120 be allowed as a new option to satisfy the computing requirement in all of our programs that have such a requirement. Thus **COMP 120 has been introduced as an option alongside COMP 150 and COMP 152 in the Mathematics extended minor (for BA students).**

- MATH 235 has been discontinued as a course at UFV, has not been offered in over 10 years, and has not been in the UFV Academic Calendar since 2011-2012. The Department of Mathematics and Statistics is requesting that MATH 235 be removed as an option to satisfy the computing requirement in all of our programs that currently include it. Thus **MATH 235 has been deleted as an option alongside COMP 150 and COMP 152 in the Mathematics extended minor (for BA students).**
- MATH 152 is a course designed to provide Engineering Transfer students at UFV with a Linear Algebra course to match that which is part of the first-year Engineering curriculum at UBC. There is already sufficient demand by Engineering Transfer students to fill the one section of this course offered annually at UFV. Furthermore, MATH 152 does not serve students in Math minors and Majors as well as does MATH 221 in preparing them for upper-level courses which require Linear Algebra tools, but there is enough similarity between these two courses that credit cannot be earned for both. Thus **MATH 152 has been deleted as an option alongside MATH 221 in the Mathematics minor (for BA and BGS students).**
- As statistical software plays an increasingly important role in statistical analysis, computing skills and expertise in programming and have become vital for anyone working in statistics. Thus, a computing requirement of **COMP 120, COMP 150, COMP 152, or STAT 272 has been introduced in the Mathematics minor (Statistics Option) (for BA and BGS students).**
- The Mathematics extended minor (Statistics option) (for BA students) has attracted very little interest in recent years, with only one student declaring this program in the last five years. The Department of Mathematics and Statistics is introducing a new minor (the Applied Statistics Minor) which does not involve calculus, and is designed to appeal to students in disciplines outside of Science. For these two reasons, **we propose to discontinue the Mathematics extended minor (Statistics option) (for BA students).**
- Text has been included in the calendar program description preamble to each of the Mathematics extended minor, Mathematics minor, and Mathematics minor (Statistics Option), indicating that students cannot pursue two of these programs simultaneously, nor any one of them with a Mathematics major.
- Text has been included in the calendar program description for the Mathematics extended minor and the Mathematics minor noting that students who intend to enter UFV's Bachelor of

Education with a secondary school option should be aware that 18 credits of mathematics courses at the 300- or 400-level are necessary in order to have mathematics as a teachable minor. (This is more upper-level credits than each of these two programs requires.)

3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes:

The only new program outcome is the introduction of a computing requirement in the Math minor (Statistics Option) (for BA and BGS students). This aligns with UFV's Institutional Learning Outcome #1: Demonstrate information competency.

4. What consideration has been given to indigenizing the curriculum?

The Department of Mathematics and Statistics did not see opportunities for meaningful considerations towards indigenizing the curriculum in making these minor program requirement changes.

5. Will additional resources be required? If so, how will these costs be covered?

No additional resources will be required.

6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program?

These changes provide more options for students to complete the **Mathematics extended minor (for BA students)**. This may slightly increase enrolment in the program. Enrolment in this program was at 2 students in 2015-2016, after being at 4-6 students during the previous four years.

Options in the **Mathematics minor (for BA and BGS students)** have decreased, but this should not impact enrolment significantly.

As enrolment in the **Mathematics extended minor (Statistics option) (for BA students)** has not been above 1 student in the last five years, impact on students by its discontinuance is minimal.

The addition of a computing requirement to the **Mathematics minor (Statistics option) (for BA and BGS students)** is also unlikely to significantly impact enrolment in this program. (Enrolment in this program in the last 5 years has never been over 3 students.) Students who are seeking a statistics credential in their degree program that has less emphasis on math and science will have the option of enrolling in the Applied Statistics Minor, as of Fall 2017.

7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline?

There is no change to the number of required or elective credits from the discipline of Mathematics and Statistics, in each of the programs that are continuing.

8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.)

No such accommodation is required.

9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed.

The only change to the number of required or elective courses from other disciplines is the introduction of a computing requirement in the **Mathematics minor (Statistics option) (for BA and BGS students)**. Due to the small number of students in this program, and the abundance of options by which this requirement can be met (COMP 120, COMP 150, COMP 152, or STAT 272), this change will have minimal impact on enrolments in these courses.

10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

## Mathematics extended minor (for BA students)

This section specifies the mathematics extended minor discipline requirements only. ~~Students cannot combine Mathematics with Mathematics (Statistics option) to form a Bachelor of Arts with two extended minors.~~ Information on additional Bachelor of Arts requirements begins in [this section](#) and includes the requirements for [declaring](#) an extended minor. Please check the Bachelor of Arts [residency](#) section of the calendar for how many upper-level credits must be completed at UFV in order to graduate with this program.

Note: students pursuing a Mathematics extended minor may not also declare a Mathematics major, a Mathematics minor, or a Mathematics minor (Statistics Option).

### Lower-level requirements: 27–28 credits

| Course                   | Title                                               | Credits             |
|--------------------------|-----------------------------------------------------|---------------------|
| MATH 111                 | Calculus I                                          | 4                   |
| MATH 112                 | Calculus II                                         | 4                   |
| or MATH 118              | Calculus II for Life Sciences                       |                     |
| MATH 211                 | Calculus III                                        | 3                   |
| MATH 221                 | Linear Algebra                                      | 3                   |
| MATH 225                 | Topics in Discrete Mathematics                      | 3                   |
| or MATH 255              | Ordinary Differential Equations                     |                     |
| MATH 265                 | Transition to Advanced Mathematics                  | 3                   |
| MATH 270/<br>STAT 270    | Introduction to Probability and Statistics          | 4                   |
| <a href="#">COMP 120</a> | <a href="#">Computing for the Sciences</a>          | <a href="#">3-4</a> |
| or COMP 150              | Introduction to Programming                         | <a href="#">3-4</a> |
| or COMP 152              | Introduction to Structured Programming              |                     |
| or <del>MATH 235</del>   | <del>Mathematical Modeling (formerly offered)</del> | -                   |

### Upper-level requirements: 15 credits

| Course       | Title                                             | Credits |
|--------------|---------------------------------------------------|---------|
| MATH         | 300- or 400-level MATH courses                    | 9       |
| <b>Plus:</b> |                                                   |         |
| MATH or STAT | 300- or 400-level MATH or STAT courses (see Note) | 6       |

#### Notes:

- Students may use PHYS 381 as part of the 15 upper-level credits; however, PHYS 381 cannot be used to satisfy requirements of a math program as well as requirements of a physics program.
- Students who intend to enter UFV's Bachelor of Education with a secondary school option should be aware that 18 credits of mathematics courses at the 300- or 400-level are necessary in order to have mathematics as a teachable minor.

## Mathematics minor (for BA and BGS students)

This section specifies the mathematics minor discipline requirements only. Information on additional Bachelor of Arts requirements begins in [this section](#) and includes the requirements for [declaring](#) a minor. Please check the Bachelor of Arts [residency](#) section of the calendar for how many upper-level credits must be completed at UFV in order to graduate with this program.

Note: students pursuing a Mathematics minor may not also declare a Mathematics major, a Mathematics extended minor, or a Mathematics minor (Statistics Option).

### Lower-level requirements: 17–18 credits

| Course      | Title                              | Credits |
|-------------|------------------------------------|---------|
| MATH 111    | Calculus I                         | 4       |
| MATH 112    | Calculus II                        | 4       |
| or MATH 118 | Calculus II for Life Sciences      |         |
| MATH 211    | Calculus III                       | 3       |
| MATH 221    | Linear Algebra                     | 3       |
| or MATH 152 | Linear Algebra for Engineering     | 4       |
| MATH 265    | Transition to Advanced Mathematics | 3       |

### Upper-level requirements: 15 credits

| Course       | Title                                             | Credits |
|--------------|---------------------------------------------------|---------|
| MATH         | 300- or 400-level MATH courses                    | 9       |
| <b>Plus:</b> |                                                   |         |
| MATH or STAT | 300- or 400-level MATH or STAT courses (see Note) | 6       |

#### Notes:

- Students may use PHYS 381 as part of the 15 upper-level credits; however, PHYS 381 cannot be used to satisfy requirements of a math program as well as requirements of a physics program.
- Students who intend to enter UFV's Bachelor of Education with a secondary school option should be aware that 18 credits of mathematics courses at the 300- or 400-level are necessary in order to have mathematics as a teachable minor.

Note: Students may use PHYS 381 as part of the 15 upper-level credits; however, PHYS 381 cannot be used to satisfy requirements of a math program as well as requirements of a physics program.

## ~~Mathematics extended minor (Statistics option) (for BA students)~~

~~This section specifies the mathematics extended minor discipline requirements only. Students cannot combine Mathematics with Mathematics (Statistics option) to form a Bachelor of Arts with two extended minors.~~

~~Information on additional Bachelor of Arts requirements begins in [this section](#) and includes the requirements for declaring an extended minor.~~

### ~~Lower-level requirements: 28 credits~~

| <del>Course</del>                                                          | <del>Title</del>                                      | <del>Credits</del> |
|----------------------------------------------------------------------------|-------------------------------------------------------|--------------------|
| <del>MATH 111</del>                                                        | <del>Calculus I</del>                                 | <del>4</del>       |
| <del>MATH 112</del>                                                        | <del>Calculus II</del>                                | <del>4</del>       |
| <del>or MATH 118</del>                                                     | <del>Calculus II for Life Sciences</del>              |                    |
| <del>MATH 211</del>                                                        | <del>Calculus III</del>                               | <del>3</del>       |
| <del>MATH 221</del>                                                        | <del>Linear Algebra</del>                             | <del>3</del>       |
| <del>MATH 225</del>                                                        | <del>Topics in Discrete Mathematics</del>             | <del>3</del>       |
| <del>MATH 270/<br/>STAT 270</del>                                          | <del>Introduction to Probability and Statistics</del> | <del>4</del>       |
| <del>COMP 150</del>                                                        | <del>Introduction to Programming</del>                | <del>4</del>       |
| <del>or COMP 152</del>                                                     | <del>Introduction to Structured Programming</del>     | <del>-</del>       |
| <del>One additional second-year MATH course (excluding<br/>MATH 205)</del> |                                                       | <del>3</del>       |

### ~~Upper-level requirements: 15 credits~~

~~15 credits of 300- or 400-level STAT courses, which may include MATH 368.~~

## Mathematics minor (Statistics option) (for BA and BGS students)

This section specifies the mathematics minor discipline requirements only. Information on additional Bachelor of Arts requirements begins in [this section](#) and includes the requirements for [declaring](#) a minor. Please check the Bachelor of Arts [residency](#) section of the calendar for how many upper-level credits must be completed at UFV in order to graduate with this program.

Note: students pursuing a Mathematics minor (Statistics Option) may not also declare a Mathematics major, a Mathematics extended minor, or a Mathematics minor.

### Lower-level requirements: ~~18~~[19-21-23](#) credits

| Course      | Title                          | Credits             |
|-------------|--------------------------------|---------------------|
| MATH 111    | Calculus I                     | 4                   |
| MATH 112    | Calculus II                    | 4                   |
| or MATH 118 | Calculus II for Life Sciences  |                     |
| MATH 211    | Calculus III                   | 3                   |
| MATH 221    | Linear Algebra                 | <a href="#">3-4</a> |
| or MATH 152 | Linear Algebra for Engineering | 4                   |

|                             |                                                        |                     |
|-----------------------------|--------------------------------------------------------|---------------------|
| MATH 270/<br>STAT 270       | Introduction to Probability and Statistics             | 4                   |
| <a href="#">COMP 120</a>    | <a href="#">Computing for the Sciences</a>             | <a href="#">3-4</a> |
| <a href="#">or COMP 150</a> | <a href="#">Introduction to Programming</a>            |                     |
| <a href="#">or COMP 152</a> | <a href="#">Introduction to Structured Programming</a> |                     |
| <a href="#">or STAT 272</a> | <a href="#">Statistical Graphics and Languages</a>     |                     |

### Upper-level requirements: 15 credits

15 credits of 300- or 400-level STAT courses, which may include MATH 368.

### Course listings

For complete details on courses see the [MATH](#) or [STAT course descriptions](#) section.

[Return to main Mathematics and Statistics page](#)

### Search Academic Calendar

**Memo for Program Changes**

**To:** Allan Arndt – Chair, Faculty of Science Curriculum Committee

**From:** Ian Affleck - Department Head, Mathematics and Statistics

**Date:** January 4, 2017

**Subject:** Program changes to Math Major (for BSc Students)

1. Summary of changes (select all the apply):

- ☐ Program revision that requires new resources
- ☒ Addition of new course options or deletion or substitution of a required course
- ☐ Change to the majority of courses in an approved program
- ☐ Change to the duration, philosophy, or direction of a program
- ☐ Addition of a new field of specialization, such as a concentration
- ☐ Change in requirements for admission
- ☐ Change in requirements for residency or continuance
- ☐ Change in admission quotas
- ☐ Change which triggers an external review
- ☐ Deletion of a program not included in the Program Discontinuance policy
- ☒ Other – Removal of unnecessary language in the calendar description of the program

2. Rationale for change(s):

- COMP 120 is a relatively new course at UFV which includes a variety of applications of computing. For students who do not expect to be doing a great deal of programming, this course is an attractive alternative to COMP 150 and COMP 152, which focus exclusively on programming. The Department of Mathematics and Statistics is requesting that COMP 120 be allowed as a new option to satisfy the computing requirement in all of our programs that have such a requirement. Thus **COMP 120 is being introduced as an option alongside COMP 150 and COMP 152 in the Mathematics major (for BSc students).**
- The calendar description of the Mathematics major (for BSc Students) includes an out-of-date first-year science breadth requirement, whose proper and updated description is found in the General BSc Requirements. The description of this requirement belongs in that section of the Academic Calendar only. Thus **the program requirements not specific to the major have been removed from the calendar description of the Mathematics major (for BSc students).**

3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes:

Program outcomes are neither new nor substantially changed.

4. What consideration has been given to indigenizing the curriculum?

The Department of Mathematics and Statistics did not see opportunities for meaningful considerations towards indigenizing the curriculum in making this minor program requirement changes and calendar edit.

5. Will additional resources be required? If so, how will these costs be covered?

No additional resources will be required.

6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program?

The change to the computing requirement provides more flexibility for students to complete the program. We expect that the changes may increase enrolment in the program, although not dramatically.

7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline?

There is no change to the number of required or elective credits from the discipline of Mathematics and Statistics.

8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.)

No such accommodation is required.

9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed.

There is no change to the number of required or elective courses from other disciplines.

10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

## Mathematics major (for BSc students)

This section specifies the mathematics major discipline requirements only. Please refer to the [Bachelor of Science](#) section for information on additional requirements.

### Lower-level requirements: ~~36-38~~27-28 credits

| Course                                                   | Title                                                      | Credits        |
|----------------------------------------------------------|------------------------------------------------------------|----------------|
| MATH 111                                                 | Calculus I                                                 | 4              |
| MATH 112                                                 | Calculus II                                                | 4              |
| <b>or</b> MATH 118                                       | Calculus II for Life Sciences                              |                |
| MATH 211                                                 | Calculus III                                               | 3              |
| MATH 221                                                 | Linear Algebra                                             | 3              |
| <del>MATH 225</del>                                      | <del>Topics in Discrete Mathematics</del>                  | <del>3</del>   |
| <b>or</b> <del>MATH 255</del>                            | <del>Ordinary Differential Equations</del>                 | <del>-</del>   |
| MATH 265                                                 | Transition to Advanced Mathematics                         | 3              |
| MATH 270/<br>STAT 270                                    | Introduction to Probability and Statistics                 | 4              |
| <del>COMP 120</del>                                      | <del>Computing for the Sciences</del>                      | <del>3-4</del> |
| <b>or</b> COMP 150                                       | Introduction to Programming                                | 4              |
| <b>or</b> COMP 152                                       | Introduction to Structured Programming                     |                |
| <del>MATH 225</del>                                      | <del>Topics in Discrete Mathematics</del>                  | <del>3</del>   |
| <b>or</b> <del>MATH 255</del>                            | <del>Ordinary Differential Equations</del>                 | <del>-</del>   |
| <b>One pair of courses from the following sequences:</b> |                                                            |                |
| <del>CHEM 111</del>                                      | <del>Principles of Chemistry I (previously offered)</del>  | <del>4</del>   |
| <b>and</b> <del>CHEM 112</del>                           | <del>Principles of Chemistry II (previously offered)</del> | <del>4</del>   |
| <b>or</b>                                                |                                                            |                |
| <del>CHEM 113</del>                                      | <del>Principles of Chemistry I</del>                       | <del>5</del>   |
| <b>and</b> <del>CHEM 114</del>                           | <del>Principles of Chemistry II</del>                      | <del>5</del>   |
| <b>or</b>                                                |                                                            |                |
| <del>PHYS 111</del>                                      | <del>Mechanics</del>                                       | <del>5</del>   |
| <b>and</b> <del>PHYS 112</del>                           | <del>Electricity and Magnetism</del>                       | <del>5</del>   |
| <b>or</b>                                                |                                                            |                |
| <del>BIO 111</del>                                       | <del>Introductory Biology I</del>                          | <del>5</del>   |
| <b>and</b> <del>BIO 112</del>                            | <del>Introductory Biology II</del>                         | <del>5</del>   |

### Upper-level requirements: 30 credits

| Course   | Title           | Credits |
|----------|-----------------|---------|
| MATH 312 | Vector Calculus | 3       |

|                                                     |   |
|-----------------------------------------------------|---|
| MATH 322 Complex Variables                          | 3 |
| MATH 340 Introduction to Analysis                   | 3 |
| MATH 339 Introduction to Applied Algebraic Systems  |   |
| <b>or</b> MATH 439 Modern Algebra (see Note 1)      | 3 |
| <b>Plus:</b>                                        |   |
| MATH 300- or 400-level MATH courses (see Note 1)    | 9 |
| <b>Plus:</b>                                        |   |
| MATH or STAT 300- or 400-level MATH or STAT courses | 9 |

Note 1: At least nine MATH credits must be at the 400 level.

Note 2: Students may use PHYS 381 as part of the 30 upper-level credits; however, PHYS 381 cannot be used to satisfy requirements of a math program as well as requirements of a physics program.

## Course listings

For complete details on courses see the [MATH](#) or [STAT course descriptions](#) section.

**Memo for Program Changes**

**To:** Allan Arndt – Chair, Faculty of Science Curriculum Committee

**From:** Ian Affleck - Department Head, Mathematics and Statistics

**Date:** January 24, 2017

**Subject:** Program changes to

- **Mathematics Minor (for BSc Students)**
- **Mathematics Minor (Statistics Option) for BSc Students**

1. Summary of changes (select all the apply):

- ☐ Program revision that requires new resources
- ☒ Addition of new course options or deletion or substitution of a required course
- ☐ Change to the majority of courses in an approved program
- ☐ Change to the duration, philosophy, or direction of a program
- ☐ Addition of a new field of specialization, such as a concentration
- ☐ Change in requirements for admission
- ☐ Change in requirements for residency or continuance
- ☐ Change in admission quotas
- ☐ Change which triggers an external review
- ☐ Deletion of a program not included in the Program Discontinuance policy
- ☒ Other – Removal of unnecessary language in the calendar description of the program

2. Rationale for change(s):

- Students pursuing the Statistics Option version of the Math Minor (for BSc Students) take upper-level courses in Statistics (and possibly Operations Research). Some of these courses require experience with the concepts of linear algebra, but none require the level of mathematical abstraction and the focus on proofs that are found in MATH 221 (Linear Algebra). The Department of Mathematics and Statistics feels that the more applied treatment of linear algebra found in MATH 152 (Linear Algebra for Engineering) would serve these students just as well as the more theoretical treatment in MATH 221. Thus **MATH 152 is being introduced as an option alongside MATH 221 in the Mathematics minor (Statistics Option) (for BSc students).**
- COMP 120 is a relatively new course at UFV which includes a variety of applications of computing. For students who do not expect to be doing a great deal of programming, this course is an attractive alternative to COMP 150 and COMP 152, which focus exclusively on programming. The Department of Mathematics and Statistics is requesting that COMP 120 be allowed as a new option to satisfy the computing requirement in all of our programs that have such a requirement. Thus **COMP 120 is being introduced as an option alongside COMP 150 and COMP 152 in the Mathematics minor (for BSc students) and in the Mathematics minor**

**(Statistics Option) (for BSc students).**

- STAT 272 is a relatively new course at UFV which includes a variety of applications of computing in statistics. For students who are studying statistics, this course is a natural and effective way for them to become familiar with methods of gathering data, and calculating and displaying results. The Department of Mathematics and Statistics is requesting that STAT 272 be allowed as a new option to satisfy the computing requirement in all of our Mathematics minor (Statistics Option) programs. Thus **STAT 272 is being introduced as an option alongside COMP 150 and COMP 152 in the Mathematics minor (Statistics Option) (for BSc students).**
  - The calendar descriptions of the Mathematics minor (for BSc Students) and the Mathematics minor (Statistics Option) (for BSc Students) each include an out-of-date first-year science breadth requirement, whose proper and updated description is found in the General BSc Requirements. The description of this requirement belongs in that section of the Academic Calendar only. Thus **the program requirements not specific to the minor are being removed from the calendar descriptions of the Mathematics minor (for BSc students) and the Mathematics minor (Statistics Option) (for BSc students).**
3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes:

Program outcomes are neither new nor substantially changed.
  4. What consideration has been given to indigenizing the curriculum?

The Department of Mathematics and Statistics did not see opportunities for meaningful considerations towards indigenizing the curriculum in making this minor program requirement changes and calendar edit.
  5. Will additional resources be required? If so, how will these costs be covered?

No additional resources will be required.
  6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program?

These changes to the program requirements provide more flexibility for students to complete these programs. We expect that the changes will increase enrolment in the program, although not dramatically.
  7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline?

The number of elective credits from the discipline of Mathematics and Statistics has increased with the introduction of STAT 272 as an elective in the Math Minor (Statistics Option) (for BSc Students). We do not anticipate any change necessary in the total number of courses offered

within the discipline, as there is currently plenty of space to accommodate more students in the annual offering of STAT 272.

8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.)

No such accommodation is required.

9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed.

The number of required courses from CIS has decreased in the Math Minor (Statistics Option) (for BSc Students), due to the introduction of STAT 272 as an elective which may be used to fulfill a requirement which currently may be fulfilled only by COMP courses.

10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

## Mathematics minor (for BSc students)

This section specifies the mathematics minor discipline requirements only. Students need to combine these minor requirements with another science minor or major other than the mathematics major or mathematics minor (statistics option). Please refer to the [Bachelor of Science](#) section for information on additional requirements.

### Lower-level requirements: ~~35-39~~26-28 credits

| Course                                                    | Title                              | Credits    |
|-----------------------------------------------------------|------------------------------------|------------|
| MATH 111                                                  | Calculus I                         | 4          |
| MATH 112                                                  | Calculus II                        | 4          |
| <b>or</b> MATH 118 Calculus II for Life Sciences          |                                    |            |
| MATH 211                                                  | Calculus III                       | 3          |
| MATH 221                                                  | Linear Algebra                     | 3          |
| MATH 265                                                  | Transition to Advanced Mathematics | 3          |
| <u>COMP 120</u>                                           | <u>Computing for the Sciences</u>  | <u>3-4</u> |
| <b>or</b> COMP 150                                        | Introduction to Programming        | 4          |
| <b>or</b> COMP 152 Introduction to Structured Programming |                                    |            |
| Two additional 200-level MATH courses                     |                                    |            |
| MATH                                                      | (excluding <u>MATH 205</u> )       | <u>6-8</u> |
|                                                           | <u>MATH 205</u> )                  |            |

### One pair of courses from the following sequences:

|                                |                                                            |              |
|--------------------------------|------------------------------------------------------------|--------------|
| <del>CHEM 111</del>            | <del>Principles of Chemistry I (previously offered)</del>  | <del>4</del> |
| <b>and</b> <del>CHEM 112</del> | <del>Principles of Chemistry II (previously offered)</del> | <del>4</del> |
| <b>or</b>                      |                                                            |              |
| <del>CHEM 113</del>            | <del>Principles of Chemistry I</del>                       | <del>5</del> |
| <b>and</b> <del>CHEM 114</del> | <del>Principles of Chemistry II</del>                      | <del>5</del> |
| <b>or</b>                      |                                                            |              |
| <del>PHYS 111</del>            | <del>Mechanics</del>                                       | <del>5</del> |
| <b>and</b> <del>PHYS 112</del> | <del>Electricity and Magnetism</del>                       | <del>5</del> |
| <b>or</b>                      |                                                            |              |
| <del>BIO 111</del>             | <del>Introductory Biology I</del>                          | <del>5</del> |
| <b>and</b> <del>BIO 112</del>  | <del>Introductory Biology II</del>                         | <del>5</del> |

### Upper-level requirements: 15 credits

| Course       | Title                          | Credits |
|--------------|--------------------------------|---------|
| MATH         | 300- or 400-level MATH courses | 9       |
| <b>Plus:</b> |                                |         |

MATH or STAT 300- or 400-level MATH or STAT courses (see Note) 6

Note: Students may use PHYS 381 as part of the 15 upper-level credits; however, PHYS 381 cannot be used to satisfy requirements of a math program as well as requirements of a physics program.

## Mathematics minor (Statistics option) (for BSc students)

This section specifies the Mathematics minor (Statistics option) discipline requirements only. Students need to combine these minor requirements with another science minor or major other than the mathematics major or mathematics minor. Please refer to the [Bachelor of Science](#) section for information on additional requirements.

### Lower-level requirements: ~~30-32~~21-23 credits

| Course                                                    | Title                                                      | Credits      |
|-----------------------------------------------------------|------------------------------------------------------------|--------------|
| MATH 111                                                  | Calculus I                                                 | <u>4</u>     |
| MATH 112                                                  | Calculus II                                                | <u>4</u>     |
| <b>or</b> MATH 118 Calculus II for Life Sciences          |                                                            |              |
| MATH 211                                                  | Calculus III                                               | 3            |
| <u>MATH 152</u>                                           | <u>Linear Algebra for Engineering</u>                      | <u>3-4</u>   |
| <u>or</u> MATH 221                                        | Linear Algebra                                             | <u>3</u>     |
| MATH 270/<br>STAT 270                                     | Introduction to Probability and Statistics                 | 4            |
| <u>COMP 120</u>                                           | <u>Computing for the Sciences</u>                          | <u>3-4</u>   |
| <u>or</u> COMP 150                                        | Introduction to Programming                                | <u>4</u>     |
| <b>or</b> COMP 152 Introduction to Structured Programming |                                                            |              |
| <u>or</u> STAT 272                                        | <u>Statistical Graphics and Languages</u>                  |              |
| <b>One pair of courses from the following sequences:</b>  |                                                            |              |
| <del>CHEM 111</del>                                       | <del>Principles of Chemistry I (previously offered)</del>  | <del>4</del> |
| <del>and CHEM 112</del>                                   | <del>Principles of Chemistry II (previously offered)</del> | <del>4</del> |
| <b>or</b>                                                 |                                                            |              |
| <del>CHEM 113</del>                                       | <del>Principles of Chemistry I</del>                       | <del>5</del> |
| <del>and CHEM 114</del>                                   | <del>Principles of Chemistry II</del>                      | <del>5</del> |
| <b>or</b>                                                 |                                                            |              |
| <del>PHYS 111</del>                                       | <del>Mechanics</del>                                       | <del>5</del> |
| <del>and PHYS 112</del>                                   | <del>Electricity and Magnetism</del>                       | <del>5</del> |
| <b>or</b>                                                 |                                                            |              |
| <del>BIO 111</del>                                        | <del>Introductory Biology I</del>                          | <del>5</del> |
| <del>and BIO 112</del>                                    | <del>Introductory Biology II</del>                         | <del>5</del> |

**Upper-level requirements: 15 credits**

15 credits of 300- or 400-level STAT courses which may include MATH 368.

Note: Not all courses will be available every year, but the department will offer sufficient courses over a two-year cycle for students to complete the requirements for a minor in two years.

**Course listings**

For complete details on courses see the [MATH](#) or [STAT course descriptions](#) section.

[Return to main Mathematics and Statistics page](#)

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