



UNDERGRADUATE EDUCATION COMMITTEE (UEC) MEETING
December 14, 2018 - 10:00 AM
A235

AGENDA

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Page

**1. APPROVAL OF THE AGENDA**

**1.1.**

**2. APPROVAL OF UEC MINUTES**

4 - 7

**2.1. UEC draft minutes: Oct. 26, 2018**

**3. UEC SUBCOMMITTEES**

**3.1. Transfer Credit Subcommittee membership:** one additional faculty member needed

**4. COURSES AND PROGRAMS**

8 - 17

**4.1. University Studies: Course outline**

Changes including title, credits, and prerequisites: UNIV 101

MOTION: To approve the changes to the UNIV 101 course outline as presented, including a change from 2 to 3 credits.

MOTION: To approve the changes to UNIV 101 effective January 2019.

18 -  
48

**4.2. General Studies: Program changes**

Change to program requirements: General Studies diploma

Changes to entrance and program requirements: Bachelor of General Studies

Name change: Bachelor of Integrated Studies (formerly Bachelor of General Studies)

MOTION: To approve the changes to the General Studies diploma program requirements as presented, effective September 2019.

MOTION: To recommend the changes to the Bachelor of General Studies program and entrance requirements as presented, effective September 2019.

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MOTION: To recommend changing the Bachelor of General Studies to the Bachelor of Integrated Studies as presented, effective September 2019.

49 -  
58

**4.3. Environmental Studies: Course outlines**

Changes including learning outcomes: ENV 200, 410

MOTION: To approve the changes to the ENV course outlines as presented.

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63

**4.4. Geography and the Environment: Course outline**

New course: GEOG 331, Environmental Assessment and Management

MOTION: To approve the GEOG 331 course outline as presented.

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78

**4.5. Environmental Studies: Program changes**

Changes to entrance and program requirements: Bachelor of Environmental Studies

MOTION: To recommend the changes to the Bachelor of Environmental Studies as presented, effective September 2019.

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80

**4.6. Chemistry: Course change**

Discontinuation: CHEM 105, Introductory Chemistry for the Health and Environmental Sciences

MOTION: To discontinue CHEM 105 as presented.

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85

**4.7. Graphic and Digital Design: Course outline**

New course: GD 461, Advanced Portfolio for Graphic and Digital Design

MOTION: To approve the GD 461 course outline as presented.

86 -  
94

**4.8. Physics: Course outlines**

Changes including prerequisites: PHYS 100

Change to prerequisites: PHYS 105

MOTION: To approve the PHYS course outlines as presented.

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98

**4.9. Psychology: Course outline**

New course: PSYC 429, Heuristics, Biases, and Critical Thinking

MOTION: To approve the PSYC 429 course outline as presented.

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102

**4.10. Teacher Education: Course outline**

New course: EDUC 100, Introduction to Education

MOTION: To approve the new EDUC 100 course outline as presented.

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121

**4.11. Mathematics and Statistics: Course outlines**

Review with changes including total hours: MATH 225

Review with changes including total hours: MATH 312

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Review with changes including title and total hours: MATH 339, 439  
Review with changes including prerequisites: MATH 445

MOTION: To approve the MATH course outlines as presented.

122 -  
124

**4.12. Science: Program changes**

Change to entrance requirements: Bachelor of Science

MOTION: To recommend the changes to the Bachelor of Science entrance requirements, effective September 2019.

125 -  
128

**4.13. Biology: Program changes**

Change to program requirements: Biology Honours

MOTION: To approve the changes to the Biology Honours as presented, effective September 2019.

**5. OTHER BUSINESS/DISCUSSION ITEMS**

**5.1. Admissions Subcommittee report**

**5.2. Transfer Credit Subcommittee report**

**5.3. Policy Subcommittee report**

**5.4. Senate report**

**6. INFORMATION ITEMS**

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

ADED 422

MATH 125

PHIL 240

129

**6.2. Revision to approved proposal:** Graphic and Digital Design major

130

**6.3. Harmonization:** Construction Electrician certificate

**6.4. Program suspended:** Management Post-baccalaureate certificate

**7. ADJOURNMENT**



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

October 26, 2018  
10:00 AM - A225  
Abbotsford Campus

### **DRAFT MINUTES**

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**PRESENT:** Donna Alary, Adrianna Bakos, Courtney Boisvert, Sue Brigden, Heather Compeau, Rajdeep Dhaliwal, Peter Geller, Esther Jimenez Atochero, Amber Johnston, David Johnston, Gilmour Jope, Bruce Kirkley, David McGuire, Teresa Piper, Eric Spalding, Ben Vanderlei  
**ABSENT:** Vlad Dvoracek, Shirley Hardman, Ceilidh Hart, Bobby Jaswal, Elaine Newman, Samantha Patridge, Kirsten Robertson  
**GUESTS:** Cory Beshara, Margaret Coombes, Marlene Murray  
**RECORDER:** Amanda Grimson

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

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

##### **2.1. UEC draft minutes: September 28, 2018**

##### **MOTION:**

To approve draft minutes as presented.  
CARRIED

#### **3. UEC SUBCOMMITTEES**

##### **3.1. Membership on UEC Subcommittees**

##### **Admissions Subcommittee membership:**

- Registrar or designate: David Johnston
- Two UEC members: Adrianna Bakos, Gilmour Jope
- One International Education representative: Karen Davies
- Two additional members, including at least one advisor: Sarah Graham, Elaine Newman

This subcommittee is complete.

##### **MOTION:**

To approve the membership of the UEC Admissions Subcommittee.  
CARRIED

##### **Transfer Credit Subcommittee membership:**

- Registrar or designate: David Johnston
- Two UEC members: Peter Geller, Sue Brigden
- At least two additional faculty (as diverse a representation as possible): Teresa Piper, [vacant]
- One advisor: Nicholas Johnson

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26 Oct 2018

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One additional faculty member is needed to fill this subcommittee.

**MOTION:**

To approve the membership of the UEC Transfer Credit Subcommittee.  
CARRIED

**Policy Subcommittee membership:**

- One UEC Chair: Eric Spalding
- Registrar (or designate): David Johnston
- Two UEC Faculty members (two-year term): Teresa Piper, Ben Vanderlei
- One UEC Advisor: Bobby Jaswal
- One IR representative: Donna Alary
- One Dean: Samantha Pattridge
- One UEC at large member (two-year term): Bruce Kirkley

This subcommittee is complete.

**MOTION:**

To approve the membership of the UEC Policy Subcommittee.  
CARRIED

**Screening Subcommittee membership:**

- One UEC Chair: Eric Spalding
- Registrar (or designate): David Johnston
- UEC Assistant: Amanda Grimson
- UEC Faculty member (two-year term): Ceilidh Hart
- UEC Advisor (two-year term): Bobby Jaswal
- CFO/SBC representative: Mark Brosinski

This subcommittee is complete.

**MOTION:**

To approve the membership of the UEC Screening Subcommittee.  
CARRIED

**4. COURSES AND PROGRAMS**

**4.1. Chemistry: Course outlines**

Review with changes including prerequisites: CHEM 221, 241

Review with changes including credits, title, and prerequisites: CHEM 412

Regularization of special topics course: CHEM 444

Review with changes including prerequisites: CHEM 451

The Chemistry department has been in contact with the Senior Advisor on Indigenous Affairs (S. Hardman), who is satisfied that they are making an effort to move forward in this area.

**MOTION:**

To approve the CHEM course outlines as amended:

- CHEM 412 calendar description: second sentence will become a note.
- CHEM 412 typical instructional methods: "lectures" changed to

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"seminars"; "student presentations will" changed to "student presentations and weekly meetings will".

CARRIED

**4.2. Social Work and Human Services: Course outlines**

New course: SOWK 302, Interdisciplinary Collaborative Practice: Working with Families

It was noted that the course content topics are written to sound like learning outcomes. M. Coombes (School of Social Work and Human Services Director) will revise this section.

**MOTION:**

To approve the new SOWK 302 course outline as amended:

- Course content revised to remove verbs.

CARRIED

**4.3. Social Work and Human Services: Program changes**

Change to program requirements: Bachelor of Social Work

**MOTION:**

To approve the changes to the Bachelor of Social Work as presented.

CARRIED

**5. OTHER BUSINESS/DISCUSSION ITEMS**

**5.1. Admissions Subcommittee report**

This committee has not yet met.

**5.2. Transfer Credit Subcommittee report**

This committee has not yet met.

**5.3. Policy Subcommittee report**

This committee has not yet met.

**5.4. Senate report**

Senate approved the Milker Technician, Liberal Arts diploma, and Bachelor of Arts proposals that were recommended last month.

**6. INFORMATION ITEMS**

**6.1. Minor course changes** (outlines will be available at

[www.ufv.ca/calendar/courseoutlines](http://www.ufv.ca/calendar/courseoutlines))

~~BIO 111~~

CHEM 214, 311, 408, 409

**6.2. Procedures for membership on standing committees**

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**6.3. School of Business course guidelines**

**6.4. Revision to Procedures for Undergraduate Program and Course Approval**

**7. ADJOURNMENT**

The meeting was adjourned at 10:49 am.

**Memo for Course Changes**

To: UEC, Screening

From: Michelle Rhodes, Samantha Pattridge

Date: November 7, 2018

**Subject: Proposal for revision of UNIV 101**

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

- ☐ Six-year review
- ☐ Number and/or course code
- ☒ Credits and/or total hours
- ☒ Title
- ☒ Calendar description
- ☒ Prerequisites and/or co-requisites
- ☒ Frequency of course offering
- ☒ Learning outcomes
- ☐ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☒ Other – Please specify: Request that changes come into effect January 2019 (early implementation)

2. Rationale for change: UNIV 101 was originally conceived as an introduction to university.

Committees at various levels have expressed interest in reviving the course for use for international and domestic students who are new to UFV. We have an urgent need to approve the changes to the course in time for Winter 2019 implementation because of the large number of unanticipated international students that won't otherwise have a seat; however, we still want to respect our curriculum approval process. While the course could run in its current form, and is timetabled as such, allowing the changes for winter will mean students can receive 3 credits for the course instead of the previous 2. Students in the BGS and BCIS and the associated diplomas are currently targeted by these sections, but we fully intend the course to be reviewed by the entire university community, since we see its value for any entering UFV student. I would like to send out a special note to all the curriculum committee chairs when the course goes to CWC so we gather as much feedback as possible before UEC.

- a. Credits: The course needed to be three credits to allow for transfer to other institutions and to fit more reasonably within a student's program.
- b. Title: The title has been adjusted to simply "University 101," and, given the prevalence of the use of "101" to describe introductory learning, we felt it would be a clear indication of the content of the course.
- c. Calendar description: The calendar description has been updated to reflect the slightly revised direction of the course and the new learning outcomes.

- d. Frequency of offering: The course will be offered every semester, particularly for incoming students.
  - e. Learning outcomes: The learning outcomes have been updated to reflect a university-level course that focuses on an introduction to academic concepts and community, while engaging students in some of the big questions in our communities.
3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

This course is not meant to fit into any one particular program. The learning outcomes can be mapped to all of the Institutional Learning Outcomes, though, at an introductory level:

  - Demonstrate information competency: The students will work with library resources and conduct some research.
  - Analyze critically and imaginatively: Learners are asked to engage in a project with their peers, focusing on issues and problems identified within our communities.
  - Use knowledge and skills proficiently: Students will become familiar with how university processes work in general and will be able to apply this knowledge to their program and their education as a whole.
  - Initiate inquiries and develop solutions to problems: Students will work on a “big problem” semester project.
  - Communicate effectively: Students will learn what it means to communicate effectively at the university level through instruction in how to prepare written and oral assignments.
  - Pursue self-motivated and self-reflective learning: Learners will be asked to complete a learning plan, identifying their academic and career goals for the next one to two years.
  - Engage in collaborative leadership: Students will learn team theory and work within a collaborative team on their group project, which will include a reflective component.
  - Engage in respectful and professional practices: UNIV 101 addresses the expectations of students at university, both within and outside the classroom.
  - Contribute regionally and globally: This course includes a basic introduction to intercultural communication theory and connections, and it also allows the opportunity for students to engage in local field trips in our community. The project may involve service learning.
4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

This course is not required of any program currently.
5. Which program areas have been consulted about the change(s)?

We have consulted widely with Advising, Student Services, International, General Studies, CMNS (related to potential overlap with CSM 104), CIS, and Residence Services as a starting point. As noted

above, we will invite comments from all curriculum committees during CWC to ensure full consultation. It is difficult to consult in any other forums given this course's wide reach and our limited timeframe.

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

Indigenous examples should be used and discussions of topics related to indigenization should occur throughout the course. Indigenous topics and perspectives are particularly relevant to the outcomes related to knowledge creation and culture, and instructors will be strongly encouraged to include Indigenous perspectives in their syllabi.

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

This course is particular to UFV's resources and our local community, plus it is a highly experiential course that relies on group collaboration.

8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:

- a. Credit value – At 3 credits, the course will
- b. Class size limit – The class size will be 36. The focus on a group project, team theory, and building a community mean the higher number is appropriate.
- c. Frequency of offering – The course will be offered every semester to support incoming students.
- d. Resources required (labs, equipment) - none

9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?

Local field trips may be required. They will be inexpensive, usually involving only bus fare and/or a small admission cost, and will be funded by the students.

10. Estimate of the typical costs for this course, including textbooks and other materials: \$20 for field trips, no textbook

**CWC comments and responses:**

- Additional information sent to CWC from College of Arts Associate Dean of Students:  
*I would like to draw your attention to the course revision of UNIV 101. This course was previously a 2-credit introduction to university that did not belong in any one faculty. When it was originally approved, it came from Arts. After receiving multiple requests to revise the course, we decided to begin the process through Arts again as a suitable starting point. In the meantime, the institution received a record number of international applications and started to experience a shortage of seats. UNIV 101 was proposed as one way to address this seat shortfall. Since the course was already part-way through revisions and consultation (see memo for a list of those consulted already), we quickly finished it off and brought it to CACC.*

*We feel that the course is broadly applicable to students at UFV, and not just Arts students, so I would like to encourage all faculty curriculum committees to review it and send any comments to me through CWC. This is a more rigorous consultation process than most courses undergo, but I feel it is important we consider the input from all faculty councils and unfortunately, we didn't have the time to come in person to each curriculum committee.*

- UEC will need to carefully consider whether a credit change should be made after students are already registered in a course.  
*Understood. The students currently enrolled have been placed into the course by International and didn't select it themselves as a 2-credit course.*
- Prerequisites: What is the goal of "fewer than 18 credits"? Would it be sufficient to, for example, recommend that this course be taken within the first two semesters, or state that it is intended for students who are in their first semester?  
*The goal is to ensure only students in first semester (or near it if they are pursuing part-time studies) take the course. The note would suffice, but we also don't want students who are in third year seeing this as an "easy credit," since they are not the target audience.*
- Why are field trips included? How will these contribute to the course? This does not appear to be covered in the learning outcomes.  
The field trips are on-campus or local trips that allow the students to make connections with and navigate the local community. The following outcome has been added: "Use micro learning and small service learning opportunities to reflect on the individual's place and role in the community."
- Evaluation: what does "professionalism" mean here? How will this be evaluated?  
*Professionalism (as an example of evaluation) was an addition suggested by CACC. It usually means the workplace-type behaviours exhibited by a student, including engaging in respectful and professional communication with peers and the instructors, meeting deadlines for group project activities, demonstrating leadership and/or functioning well in team environments, etc. An instructor would need to specify how these elements would be evaluated; sample rubrics and criteria can be provided.*
- Course content: "themes" do not seem consistent with the learning outcomes and the main purpose of this course. Please provide additional rationale for this approach.  
*Using themes is intended to meet several goals. First, the theme provides a vehicle for the group project, which will enable discussions and learning around team skills, project management, and research. Second, a theme is a useful way for faculty to compare and contrast different disciplinary approaches to the same problem. Finally, the theme allows students to recognize that the problems we address often don't have answers, and that these questions inform our ability to be engaged citizens in our communities.*

- It is unclear why changes are needed so urgently. Why can't this course be run as existing for Winter, with revisions implemented for September 2019?

*The students who are currently enrolled in the winter sections have been placed in the courses by International. They are brand-new international students, and this course would be ideal for introducing them to UFV and to university studies in Canada as well. As part of our strategy for meeting demand for the unanticipated influx of international students and the extreme shortage of seats, we opened up four sections of UNIV 101 in anticipation of changes being made. The most critical change is the change from 2 credits to 3 credits. Part of the issue for these winter students is the number of credits they are maintaining with their three or four courses; they need enough to keep their student visas. I have made no promises that the changes will be approved for winter, but I know International is hopeful the students will receive 3 credits for the course. Future students will receive 3 credits for taking this same course, and it would be nice to be consistent from the start (or "restart" in this case). The change to 3 credits also allows us to ask for, and be much more likely successful in achieving, transfer credit from other BC institutions. The feeling of urgency also comes from the need expressed by faculty to better support International students coming through our doors right from the start.*

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**From:** Simon Xi

**Subject:** RE: UNIV 101 - revisions

Hi,

It is great to see the revival of UNI 101. I have several points to make.

Many incoming international students for winter 2019 were registered in UNI 101 with the great expectation that the course will be changed to 3 credits. These students need minimum 9 university-level credits to meet the entrance requirements of their goal programs and/or program requirements. I hope there is a back-up measure in place in case, so that those students taking UNIV 101 will not be affected. By the way, I am commenting as an academic advisor for international students. I do not speak for UFV International, which has a separate team for this course's consultation.

I am sure OReg will program "less than 18 credits" and I agree with the rationale behind it. The pre-requisite may mean completed credits. When new students come in, they have zero university-level credits completed. If that is the case, should pre-requisite change to pre/co-requisite? This allows new student registration and can also prevent students in developmental programs from taking the course. By the way, is this course intended for all new students regardless of programs? As the majority of UFV courses are worth 3 credits each, perhaps we can set up a range between 3 and 18 credits.

Themes are great. I wonder if each session can offer a theme more related to students' intended disciplines. Such themes can then be attached to each UNIV 101 session, similar to several ENGL 105 sessions.

Thanks,

Simon Xi

Academic advisor  
UFV International

**From:** Samantha Pattridge  
**Subject:** RE: UNIV 101 - revisions

Hi Simon,

Thanks for this response and your feedback. I'll try to answer your questions, though more folks may need to weigh in.

First, yes, I am working on a back-up plan for students who need the additional credit to meet the threshold of 9. I did advise International not to register any students who would be adversely impacted if the course change to 3 credits was not approved, so I am hoping there are not too many of these.

Yes, I see your point about the prerequisite/corequisite issue. Perhaps OReg can advise us on the best way to word these prerequisites.

Finally, about the themes, we could certainly consider theming individual sections based on student interest in the future. This is something many institutions in Canada and the US do with a course like this and it could be an exciting direction. We will be allowing individual instructors to propose themes for this winter, probably using the examples on the OCO.

Best,

Samantha



**ORIGINAL COURSE IMPLEMENTATION DATE:** September 2006  
**REVISED COURSE IMPLEMENTATION DATE:** January 2019  
**COURSE TO BE REVIEWED** (six years after UEC approval): December 2024  
**Course outline form version:** 10/27/2017

## 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> UNIV 101                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                         |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Course Full Title:</b> University 101<br><b>Course Short Title:</b><br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Faculty:</b> Choose an item.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Department (or program if no department):</b> General Studies Program Committee                                                                                                                                                                                                                                                                                                                                                             |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Calendar Description:</b><br>Students develop the understanding and skills needed to thrive in diverse and dynamic learning environments, contribute to academic conversations, make connections between disciplines, and identify how their education will impact their lives and their communities. Students will become familiar with the supports and programs offered at UFV through a semester-long project, group work, guest speaker events, and service learning projects.<br><br>Note: Field trips outside of class time may be required.                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Fewer than 18 university-level credits.                                                                                                                                                                                                                                                                                                                                                                                                        |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br>Former course code/number:<br>Cross-listed with:<br>Dual-listed with:<br>Equivalent course(s):<br><i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>                                                                                                                                                                                                                                         | <b>Special Topics</b><br>This course is offered with different topics:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(Double-click on box to select it as checked.)</i><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>(The specific topic will be recorded when offered.)</i> |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Typical Structure of Instructional Hours</b><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Lecture/seminar hours</td><td></td></tr> <tr><td>Tutorials/workshops</td><td style="text-align: center;">30</td></tr> <tr><td>Supervised laboratory hours</td><td></td></tr> <tr><td>Experiential (field experience, practicum, internship, etc.)</td><td style="text-align: center;">15</td></tr> <tr><td>Supervised online activities</td><td></td></tr> <tr><td>Other contact hours</td><td></td></tr> <tr><td style="text-align: right;"><b>Total hours</b></td><td style="text-align: center;"><b>45</b></td></tr> </table> | Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Tutorials/workshops | 30 | Supervised laboratory hours |  | Experiential (field experience, practicum, internship, etc.) | 15 | Supervised online activities |  | Other contact hours |  | <b>Total hours</b> | <b>45</b> | <b>Transfer Credit</b><br>Transfer credit already exists: (See <a href="http://bctransferguide.ca">bctransferguide.ca</a> )<br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes<br>Submit outline for (re)articulation:<br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i> |
| Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| Tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 30                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| Supervised laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| Other contact hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>45</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Expected Frequency of Course Offerings:</b><br>Every semester<br><i>(Every semester, Fall only, annually, every other Fall, etc.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| Labs to be scheduled independent of lecture hours: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Department / Program Head or Director:</b> Michelle Rhodes/Samantha Pattridge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Date approved:</b> November 7, 2018                                                                                                                                                                                                                                                                                                                                                                                                         |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Date approved:</b> November 2018                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Dean/Associate VP:</b> Jacqueline Nolte                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Date approved:</b> November 2018                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Date of posting:</b> November 30, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |  |                     |    |                             |  |                                                              |    |                              |  |                     |  |                    |           |                                                                                                                                                                                                                                                                                                                                                                  |

**Learning Outcomes:**

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

- Identify the value of attaining a university education
- Engage in meaningful conversation about university life within a variety of different cultural contexts
- Reflect on how knowledge is gathered, created, and situated in the university environment
- Discuss the ethics and responsibility of knowledge creation and ownership
- Collaborate with peers to solve a multidisciplinary problem
- Access university resources and services required to support learning
- Discuss university policies around student behavior and expectations inside and outside the classroom
- Identify university resources and effective habits to support student health and wellness
- Describe the purpose of specific university planning documents (i.e., transcripts, timetables, schedules, My Grad Plan)
- Use the university's learning management system
- Discuss two to three different ways a university education will have impact on their career and life choices.
- Use micro learning and small service learning opportunities to reflect on the individual's place and role in the community.

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

☐ Yes     ☒ No, PLAR cannot be awarded for this course because this course is particular to UFV's resources and our local community, plus it is a highly experiential course that relies on group collaboration.

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

Project-based learning, with focus on experiential learning, discussions, guest lectures, group work, and service learning.

**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. Course pack.            |                                      | <input type="checkbox"/> |           |      |
| 2.                         |                                      | <input type="checkbox"/> |           |      |
| 3.                         |                                      | <input type="checkbox"/> |           |      |
| 4.                         |                                      | <input type="checkbox"/> |           |      |
| 5.                         |                                      | <input type="checkbox"/> |           |      |

Course pack sample readings:

Canadian Intellectual Property Office. (September 26, 2018). Copyright. Retrieved from [https://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/h\\_wr02281.html](https://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/h_wr02281.html).

Haas, M., & Mortensen, M. (2016). The secrets of great teamwork: Collaboration has become more complex, but success still depends on the fundamentals. *Harvard Business Review*, (6), 70.

Hofstede, G. (n.d.). 6-D model of national culture. Retrieved from <https://geerthofstede.com/culture-geert-hofstede-gert-jan-hofstede/6d-model-of-national-culture/>.

Munro, D. & Dowdall, B. (2016). The sustainable approach to prosperity for BC is innovation. *The Conference Board of Canada*. Retrieved from [https://www.conferenceboard.ca/commentaries/technologyinnovation/default/hot-topics-in-technology-and-innovation/2016/04/07/The\\_Sustainable\\_Approach\\_to\\_Prosperty\\_for\\_B\\_C\\_Is\\_Innovation.aspx](https://www.conferenceboard.ca/commentaries/technologyinnovation/default/hot-topics-in-technology-and-innovation/2016/04/07/The_Sustainable_Approach_to_Prosperty_for_B_C_Is_Innovation.aspx).

O'Meara, C. (2016). Sticky bombs! *Reflections: Narratives of Professional Helping*, 22(3), 22-24.

**Typical Evaluation Methods and Weighting**

|                                                 |     |                |     |          |      |
|-------------------------------------------------|-----|----------------|-----|----------|------|
| Assignments:                                    | 35% | Project:       | 20% | Journal: | 20%  |
| Participation, collaboration & professionalism: | 10% | Academic plan: | 15% | Total:   | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

Each offering of UNIV 101 will be structured around a specific theme, with shared content related to academic planning, intercultural communication, health and nutrition, ethical practice, and navigating our communities. Examples of specific themed offerings include:

*Making UFV 'Green'—Environmental sustainability on campus*

1. Introduction; getting to know one another; mindful walking on UFV's planned walks
2. Cross-cultural understandings of environmental values
3. What makes a 'green' campus and a green home? Defining sustainability goals and making observations

**UNIV 101****University of the Fraser Valley Official Undergraduate Course Outline**

Page 3 of 3

4. Healthy campus, healthy minds: time management, managing stress through getting outdoors, and eating 'green' on campus
5. Planning ahead—transcripts, programs, courses, and the details of MyGradPlan
6. Creating your university bucket list; introduction to academic advising
7. Counting 'cups': Conduct a recycling audit (in conjunction with UFV Sustainability Office)
8. Exploring outdoor recreation options off-campus; housing, budgeting, and transit
9. Developing a green campus proposal—adopt a goal, and develop a plan for meeting that goal; assistance available through the Academic Success Centre
10. Presentation on green campus proposals to UFV Facilities

*Technology and Innovation*

1. Introduction; getting to know one another; definitions of innovation (eg. In technology: self-driving cars, artificial intelligence, robotics; In practices and theory: education, communication and media, etc.)
2. Cross-cultural understandings of technology innovations, basic cultural dimensions exercises
3. The role of innovation in sustainability and the global economy; introduction to teamwork theory and practice
4. Planning ahead – transcripts, programs, courses, and MyGradPlan
5. Introduction to university services; who owns knowledge in a university?; innovations in knowledge creation and dissemination
6. Introduction to disciplines and disciplinary perspectives; reading strategies for popular material, textbooks, scholarly articles; innovation in different disciplines
7. Where is innovation/what is innovative in our community?: off-campus exploration
8. Identification of a technology/innovation challenge in our community (UFV, Abbotsford/Chilliwack/Mission, BC); project planning skills
9. Developing a solution to the technology/innovation challenge; using university services in support of learning
10. Presentation of technology/innovation solutions

UNIV 101

University of the Fraser Valley Transfer Credit Request Form

## Transfer Credit Request Form

Please fill out this form if transfer credit should be requested.

| <u>Institution code</u> | <u>Full Institution name</u>                     | <u>Transfer credit exists</u>       | <u>Request transfer credit</u>      |
|-------------------------|--------------------------------------------------|-------------------------------------|-------------------------------------|
| AI                      | Art Institute of Vancouver                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| ALEX                    | Alexander College                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| ASM                     | Acsenda School of Management                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AU                      | Athabasca University                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| CAPU                    | Capilano University                              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| CNC                     | College of New Caledonia                         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| COTR                    | College of the Rockies                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| COLU                    | Columbia College                                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| COQU                    | Coquitlam College                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| DOUG                    | Douglas College                                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| EC                      | Emily Carr University of Art & Design            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| FDU                     | Fairleigh Dickinson University                   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| JIBC                    | Justice Institute of BC                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| KWAN                    | Kwantlen Polytechnic University                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| NVIT                    | Nicola Valley Institute of Technology            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| NIC                     | North Island College                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| NLC                     | Northern Lights College                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| NWCC                    | Northwest Community College                      | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| OC                      | Okanagan College                                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| SFU                     | Simon Fraser University                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| TRU                     | Thompson Rivers University                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| TRU-OL                  | Thompson Rivers University, Open Learning        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| TWU                     | Trinity Western University                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| UBC                     | University of British Columbia- Vancouver Campus | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| UBCO                    | University of British Columbia- Okanagan Campus  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| UCW                     | University Canada West                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| UNBC                    | University of Northern BC                        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| UVIC                    | University of Victoria                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| VCC                     | Vancouver Community College                      | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| VIU                     | Vancouver Island University                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Visit [www.bccat.ca/articulate/additions/upperpolicy](http://www.bccat.ca/articulate/additions/upperpolicy) for a list of the institutions that will articulate upper-level courses.

For further information on identifying appropriate receiving institutions, please see the following webpage: [http://bccat.ca/info/handbook/pages/identifying-appropriate-receiving-institutions?in\\_handbook=241](http://bccat.ca/info/handbook/pages/identifying-appropriate-receiving-institutions?in_handbook=241)

**Memo for Program Changes**

To: UEC

From: Michelle Rhodes, Chair, General Studies

Date: 28 March 2018

**Subject: Program change (General Studies diploma)**

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):

Most of the proposed changes:

- a) Add options for meeting core requirements within the degree (no additional resources needed)
- b) Clean up and simplification of policies section to enhance usability.

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

No change

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

Not considered as part of this round of revisions. Indigenous curriculum options can be used to meet the requirements of the diploma already.

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

None 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?

- More options to meet competency should improve student program flexibility.

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. (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.

The net impact should be positive, as the additional options students can use to meet their competency requirements should spread the demand more evenly across more programs.

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.

(Emailed approval from Dean of Arts office)

## GENERAL STUDIES

[ufv.ca/General-Studies](http://ufv.ca/General-Studies)

## General Studies diploma

### Program requirements

The General Studies diploma requires:

- A minimum of 60 credits in courses numbered at the 100-level or higher.
- A minimum of 24 credits in courses numbered at the 200-level or higher.
- Successful completion of courses in at least four distinct disciplines.
- Demonstration of having met the following Core Competencies.
- Up to 15 VO (vocational) credits can be used towards the General Studies Diploma.

| Core Competency                                   | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Written communication                             | CMNS 125 or ENGL 105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Additional written, oral, or visual communication | <ul style="list-style-type: none"> <li>• <u>One of :</u> <ul style="list-style-type: none"> <li>o <u>ABT 135, AH 100, AH 101, AH 102, AH 204, CMNS 115, CMNS 175, CMNS 235, CMNS 251, CMNS 300, ENGL 104, ENGL 208, ENGL 210 to ENGL 215, ENGL 267, FREN 101, FREN 102, GD 101, GD 102, GD 157, GEOG 257/CMNS 257, GERM 101, GERM 102, HSER 120, JAPN 101, JAPN 102, JRNL 300, MEDA 222, MEDA 260, RUSS 101, RUSS 102, SOC 254, SPAN 101, SPAN 102, SPAN 201, THEA 111, THEA 112, VA 113, VA 115, VA 116, VA 160, or VA 180</u></li> </ul> </li> </ul> |

|                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                        | <p><a href="#">o Or completion of one of the following programs:</a></p> <ul style="list-style-type: none"> <li>▪ <a href="#">Aboriginal Culture and Language Support diploma</a></li> <li>▪ <a href="#">Paralegal certificate</a></li> <li>▪ <a href="#">Paralegal diploma</a></li> <li>▪ <a href="#">Records Management certificate</a></li> </ul> <p><del>One of AH 100, AH 101, AH 102, AH 204, CMNS 175, CMNS 235, CMNS 251, GEOG 257/CMNS 257, HSER 120, SOC 254, VA 113, VA 115, or VA 116</del></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>Use and interpretation of numerical data</b></p> | <ul style="list-style-type: none"> <li>• <a href="#">One of: STAT 104, STAT 106, or PSYC 110</a></li> <li>• <a href="#">One of:</a> <ul style="list-style-type: none"> <li><a href="#">o CRIM 320, ECON 100, ECON 101, GEOG 252, GEOG 253, PSYC 110, PSYC 202, or SOC 255</a></li> <li><a href="#">o MATH 100 or above</a></li> <li><a href="#">o STAT 100 or above (see Note).</a></li> </ul> </li> </ul> <p><a href="#">Note: STAT 104 or STAT 106 can only be used to meet one of the two required courses in this area.</a></p> <p><a href="#">o Or completion of one of the following credentials:</a></p> <ul style="list-style-type: none"> <li>▪ <a href="#">Architectural Drafting Technician certificate</a></li> <li>▪ <a href="#">Automation and Robotics and Technician diploma</a></li> <li>▪ <a href="#">Bookkeeping for Small Business certificate</a></li> <li>▪ <a href="#">Carpentry certificate</a></li> <li>▪ <a href="#">Construction Electrician certificate</a></li> </ul> |

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                          | <ul style="list-style-type: none"> <li>▪ <u>Electronics Technician - Common Core certificate</u></li> <li>▪ <u>Hospitality and Event Management Post-baccalaureate certificate</u> (unavailable until further notice)</li> </ul> <p>One of COMP 331/STAT 331, COMP 431/STAT 431, ECON 100, ECON 101, GEOG 252, GEOG 253, MATH 100 or above, PSYC 110, PSYC 202, SOC 255, or STAT 100 or above (see Note 1)</p> <p>Or completion of one of the following credentials:</p> <ul style="list-style-type: none"> <li>• <del><u>Architectural Drafting Technician certificate</u></del></li> <li>• <del><u>Automation and Robotics Technician diploma</u></del></li> <li>• <del><u>Bookkeeping for Small Business certificate</u></del></li> <li>• <del><u>Carpentry certificate</u></del></li> <li>• <del><u>Construction Electrician certificate</u></del></li> <li>• <del><u>Electronics Technician - Common Core certificate</u></del></li> <li>• <u>Hospitality and Event Management Post-baccalaureate certificate</u> (unavailable until further notice)</li> </ul> |
| <p><b>And one of the two following competencies:</b></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>Scientific competency</b></p>                      | <p>One of AGRI 123, AGRI 124, AGRI 129, AGRI 163, ASTR 103, ASTR 104, BIO 100-level or higher, CHEM 100-level or higher, GEOG 103, GEOG 116, HSC 111, KPE 163, KPE 170, PHYS 100-level or higher, or PSYC 202</p> <p>Or completion of one of the following credentials:</p> <ul style="list-style-type: none"> <li>• <u>Automation and Robotics Technician diploma</u></li> <li>• <u>Construction Electrician certificate</u></li> <li>• <u>Electronics Technician - Common Core certificate</u></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  | <ul style="list-style-type: none"> <li>• <u><b>Practical Nursing diploma</b></u></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p><b>Digital competency</b></p> | <p><u>One of:</u></p> <ul style="list-style-type: none"> <li>• <u>Course in digital competency:</u> <ul style="list-style-type: none"> <li>o <u>BUS 160</u></li> <li>o <u>CIS 100 or higher</u></li> <li>o <u>COMP 120 or higher</u></li> <li>o <u>CMNS 251, 375, or 376</u></li> <li>o <u>ENGR 151</u></li> <li>o <u>Any GD course except GD 102</u></li> <li>o <u>GEOG 253, 300j, 300n, or 357</u></li> <li>o <u>VA 160, VA 180, VA 271 or 365</u></li> </ul> </li> <li>• <u>Or completion of one of the following credentials:</u> <ul style="list-style-type: none"> <li>o <u><b>Applied Business Technology certificate</b></u></li> <li>o <u><b>Architectural Drafting Technician certificate</b></u></li> <li>o <u><b>Automation and Robotics Technician diploma</b></u></li> <li>o <u><b>Bookkeeping for Small Business certificate</b></u></li> <li>o <u><b>Computer Assisted Drafting certificate</b></u> (unavailable until further notice)</li> <li>o <u><b>Electronics Technician - Common Core certificate</b></u></li> <li>o <u><b>Legal Administrative Assistant certificate</b></u></li> <li>o <u><b>Library and Information Technology diploma</b></u></li> <li>o <u><b>Medical Office Assistant certificate</b></u></li> <li>o <u><b>Paralegal certificate</b></u></li> <li>o <u><b>Paralegal diploma</b></u></li> <li>o <u><b>Records Management certificate</b></u></li> </ul> </li> <li>• <u>Or portfolio demonstration of having met competency outcomes through professional or related experience. See</u></li> </ul> |

|                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                | <p><a href="#">BGS website for more information on using portfolios to demonstrate competency requirements.</a></p> <p>One of CIS 100 or higher, COMP 120 or higher, CMNS 251, CMNS 376, ENGR 151, GD 157 or higher, GEOG 253, VA 160, VA 180, VA 271, or VA 365</p> <p>Or completion of one of the following credentials:</p> <ul style="list-style-type: none"> <li>• <del><a href="#">Applied Business Technology certificate</a></del></li> <li>• <del><a href="#">Architectural Drafting Technician certificate</a></del></li> <li>• <del><a href="#">Automation and Robotics Technician diploma</a></del></li> <li>• <del><a href="#">Bookkeeping for Small Business certificate</a></del></li> <li>• <del><a href="#">Computer Assisted Drafting (CAD) certificate</a></del></li> <li>• <del><a href="#">Electronics Technician – Common Core certificate</a></del></li> <li>• <del><a href="#">Legal Administrative Assistant certificate</a></del></li> <li>• <del><a href="#">Library and Information Technology diploma</a></del></li> <li>• <del><a href="#">Medical Office Assistant certificate</a></del></li> <li>• <del><a href="#">Paralegal certificate</a></del></li> <li>• <del><a href="#">Paralegal diploma</a></del></li> <li>• <del><a href="#">Records Management certificate</a></del></li> </ul> |
| <p>Note 1: STAT 104 or STAT 106 is recommended for students planning on continuing into the Bachelor of General Studies degree.</p> <p>Note 2: Individual courses can only be used to meet one competency.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

**Memo for Program Changes**

To: UEC

From: Michelle Rhodes, Chair, General Studies

Date: 5 March 2018

**Subject: Bachelor of General Studies**

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):

Most of the proposed changes:

- a) Add options for meeting core requirements within the degree (no additional resources needed)
- b) Add clarity to the admissions requirements for students entering with prior post-secondary experience. This was done because of uncertainty that has emerged around the use of vocational-level credits (e.g. ABT) in this category, and because there was an inherent inconsistency in the standards required. Namely, the different entrance options do not currently all require students to have completed ENGL 105 or CMNS 125 (or equivalent) or to have met the pre-requisites for these courses. The revisions include updated language which specifies students need to have met the pre-requisites for one of these courses. In addition, students coming from vocational programs will need to meet a GPA requirement; this language is consistent with relatively new language in the BA.
- c) Remove the language around Aviation application and thematic options, as the relationship with our current aviation partner is changing.
- d) Clean up and simplification of policies section to enhance usability.
- e) Request to add anchor links at the top of the calendar copy so that users can skip ahead to relevant sections.
- f) Increases options for international students to meet intercultural competency requirement.

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

No change

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

Not considered as part of this round of revisions. Indigenous curriculum options are included in the degree already.

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

None 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?

- More options to meet competency should improve student program flexibility.
- Clarity around program admissions options will help students entering from vocational programs, e.g. Applied Business Technology (UFV), BCIT programs, etc.

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. (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.

The net impact should be positive, as the additional options students can use to meet their competency requirements should spread the demand more evenly across more programs.

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.

**Responses to Questions from UEC Pre-Screening for Calendar Copy, October 2018**

| Question from Pre-screening                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Entrance requirement option 2: please see attached document for suggested revisions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <i>We're good with these changes. Thanks!</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Entrance requirement option 3: suggest changing "Students granted entrance... are required to meet with the BGS Academic Advisor prior to <b>application</b> " to "Students granted entrance... are required to meet with the BGS Academic Advisor prior to <b>registration</b> ".                                                                                                                                                                                                                                                                                                                                    | <i>Change made</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>"VO credits" is a Banner code, and not something that should be included in the calendar copy:</p> <ul style="list-style-type: none"> <li>o Page 2 of BGS calendar document: delete "(VO designation)"</li> <li>o BGS: change "up to 30 VO credits can be used towards the BGS degree" to "up to 30 <b>vocational-level</b> credits..."</li> <li>o GSD: change "up to 15 VO credits can be used towards the BGS degree" to "up to 15 <b>vocational-level</b> credits..." <ul style="list-style-type: none"> <li>• Suggest defining vocational credits in a note for students.</li> </ul> </li> </ul>               | <p><i>Upon further consultation with and request from John English, we are pulling this language at this time as it applies to how credits are used in the degree. This is to allow time for an alternative proposal to recognize 'vocational' credits, being developed in AATS.</i></p> <p><i>However, we are maintaining reference to vocational-level credits in the entrance requirements, because currently our students are disadvantaged when their education in ABT or other applied programs are not recognized.</i></p> |
| <b>Response from Marlene Murray (part of CWC review, submitted separately)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p>Subsequent degree</p> <p>With the link to the Subsequent and Concurrent degree policy below is this section still needed? If it is then can we change the subheading and content to reflect the language of the Subsequent and Concurrent degree police which states "at least 1/3 of the total credits required for the additional degree, including at least 30 additional upper level credits, beyond the credits taken in the first or concurrent degree."</p>                                                                                                                                                 | <i>We get many requests for subsequent degree. While I'm all for getting rid of excess calendar copy, this section is still warranted. But happy to simplify!</i>                                                                                                                                                                                                                                                                                                                                                                 |
| <p>Professional Pilot Training: fixed wing thematic:</p> <p>I've followed the link to Coastal Pacific and cannot find any reference to the Professional Pilot Training-fixed wing thematic option. There was a course list for this option published on their website from which I was able to code MyGRADplan, but now with this no longer available on the Coastal site nor in the UFV Calendar the requirements could change at any time without notice to students and we cannot confirm that they have met graduation requirements. Unfortunately without published requirements MyGRADplan cannot be coded.</p> | <p><i>We are currently reviewing our agreement with Coastal Pacific, after Business has already done so, and wanted to simplify the language around the thematic option as much as possible. However, our current agreement is still in effect. This is our attempt to honour that agreement in calendar without including the previous language specific to CPA.</i></p> <p><i>Once we have revised requirements, we will update the language further.</i></p>                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Thematic Options:</b></p> <p>Could the minimum graduation requirements be added to the Calendar copy for the Thematic Options while still retaining the link to the Advising centre for the details?</p> <ul style="list-style-type: none"> <li>• A minimum of 24 upper-level credits</li> <li>• A minimum of 12 upper-level credits completed at UFV</li> <li>• A minimum of two distinct disciplines</li> <li>• A minimum 2.00 grade requirement in all TO courses.</li> </ul> |                                                                                                                                                                                               |
| <p><b>Required to Withdraw/Readmission and Standing</b></p> <p>This information may no longer be relevant. With the implementation of the Undergraduate Continuance Policy OREG now administers most withdrawals. Generally only those programs with program GPA requirements higher than 2.00 still perform their own program withdrawals.</p>                                                                                                                                        | <p><i>I think this is a great idea! Addition made.</i></p><br><br><br><br><p><i>Good suggestion to simplify calendar.<br/>Language on withdrawal and readmission struck from calendar</i></p> |
| <p><b>Degree, breadth, and portfolio requirements</b></p> <p>Policy 65 defines CGPA as the average of all grades based on all courses taken at UFV, and PGPA as the average calculated over all courses taken at UFV that are used to meet program graduation requirements. May I suggest that we use CGPA and PGPA when applicable to clarify whether we are calculating on all courses taken at UFV or only on courses applied to the program.</p>                                   | <p><i>Okay. I was under the impression that we now only use the CGPA because of continuance.</i></p><br><br><p><i>We are wanting recommended language on this from UEC if possible.</i></p>   |

## GENERAL INTEGRATED STUDIES

[ufv.ca/General-Studies](http://ufv.ca/General-Studies)

Commented [mr1]: New link created when available

### Bachelor of ~~General~~ Integrated Studies degree

Commented [mr2]: Changes in this first section are to: 1) replace 'general' with 'integrated', and 2) improve readability while shortening overall length.

In the Bachelor of ~~General~~ Integrated Studies (BIS), students ~~can~~ create a flexible, ~~interdisciplinary multidisciplinary degree~~ program ~~customized to suit to~~ their ~~different~~ educational and career goals. ~~As part of the degree~~ To complete their program, students develop and demonstrate core competencies highly desired in the workforce, ~~such as (e.g., effective communications and the use of data, etc.).~~ Prior learning and professional experience can be used, by assessment, to meet one or more of the competencies ~~They~~. In their program, students can then choose to specialize between completing a specialty as part of a Thematic Option or minor, or completing a general option. ~~by working with an Academic Advisor and faculty to plan coursework in a particular topic area (thematic option) or discipline (minor), or they may choose to complete courses from many areas, without a specialization.~~

~~Students can enter the BIS degree program directly (i.e. with no previous university experience), or after having completed credits or certificates, diplomas, and associate degrees at UFV or other accredited colleges and universities. The degree allows students to use these credentials and credits or to (upon review) meet core competencies and to accumulate credits toward the degree.~~

### Quick Links

Commented [mr3]: Add hyperlinks, to reduce need for scrolling

- [What are the requirements for entrance into the program?](#)
- [How do I apply?](#)
- [How many credits in the BIS do I need to complete at UFV? How many can I transfer from other institutions?](#)
- [What are the requirements for the Bachelor of Integrated Studies](#)
- [What are my choices to specialize within the BIS? Thematic Options, minors, and other options](#)
- [Graduation requirements](#)
- [Relevant Policies](#)

Posed in form of question for readability (not part of draft that went to CWC)

## Can professional experience be used towards the BGS?

Commented [mr4]: Change in this section is to improve quality of information provided.

Potentially, yes! BIS students must demonstrate professional competency as a condition of degree completion, and prior or continuing professional experience may be considered for this requirement. In addition, The Prior Learning Assessment and Recognition (PLAR) process allows students the opportunity to have non-traditional learning and work experience assessed for credit. PLAR may also be used to assess whether core competencies have been met. Please contact an Academic Advisor for more information.

## Can prior education be used in the BGS?

Commented [mr5]: Cutting to shorten the length of copy, and because it's redundant.

In most cases, yes! Students can integrate prior university learning (including professional programs and technology studies) within the BGS degree. University-level courses or credentials in other programs or at other institutions may meet some of the core competencies required (see "BGS Program Requirements" below). All students must meet the residency requirements (see below). Students who have completed another degree and are wanting to complete a subsequent degree should refer to the subsequent degree policy (see below under "Additional Policies and Practices"). In order to assess how you can use prior academic learning as part of their degree plan, schedule an appointment with an Academic Advisor.

## Residency

Commented [mr6]: Moved to section after 'how to apply'

Students can complete academic course work at another post-secondary institution and transfer this credit to UFV to satisfy BGS degree requirements, under the following restrictions:

- Of the BGS overall total of 120 credits, 30 credits must be completed at UFV.
- Of the BGS upper-level total of 45 credits, 24 upper-level credits must be completed at UFV.
- For a minor program, at least 50 percent of the required upper-level credits in the specific discipline must be completed at UFV.

Provided those requirements are met, up to 50% of credits required for the degree may be met through recognition of non-formal credit through the PLAR process (including course challenges). Total transfer credit and prior learning credit must not exceed 90 credits.

## Entrance requirements

Option 1: High school (for students with high school graduation only)

### **B.C. applicants**

1. B.C. secondary school graduation or equivalent.
2. A minimum of a C+ in English 12 or equivalent (see Note) and a minimum of a B average in two additional **Approved Grade 12 courses**. Note: English 12 equivalent courses include English 12 First Peoples, English Literature 12, AP English, and IB English A (standard level or higher level).

### **Out-of-province applicants**

Students will be considered on the basis of courses equivalent to **Approved Grade 12 courses**. See the **Admissions section** of the calendar for more information on equivalents to B.C. secondary school graduation.

### **Out-of-country applicants**

Students must have B.C. secondary school graduation equivalency, meet the prerequisite for **ENGL 105** or **CMNS 125**, and have completed an equivalent average of B (equated to the UFV grading system) in two academic Grade 12 subjects.

Students who do not meet these requirements might consider **Qualifying Studies**.

### **Alternatives to high school graduation**

Students who have completed the International Baccalaureate diploma program, the B.C. Graduation diploma (B.C. Adult Dogwood), or the General Educational Development (GED) certificate may be considered to have the equivalent of B.C. secondary school graduation for admission purposes.

### **Aviation applicants**

~~Aviation students have the option of combining a Bachelor of General Studies degree with a Thematic option in . Students who plan to complete this option should apply to Coastal Pacific Aviation at the same time as applying for the BCS. Please refer to the website for further details.~~

**Commented [mr7]:** This is being deleted due to changes in UFV's relationship with Coastal Pacific. The thematic option remains, but the students applying to CPA will be going through a different process via a visit to the Business Administration (Aviation) diploma.

~~about admission requirements and application processes.~~

~~This program may also be of interest to students who have completed the and wish to continue their studies to complete a university degree with a thematic option.~~

## **Option 2: University entrance (for students with some post-secondary education)**

**Commented [mr8]:** Revised language in this section recommended through CWC/ pre-UEC

~~Post-secondary applicants may be considered for admission to the BIS if they have the equivalent of BC High School English 12 or English Literature 12 with a minimum final grade of C+ or better~~

Or

~~Otherwise meet the prerequisites for ENGL 105 or CMNS 125, and have completed one of the following:~~

- ~~1) A minimum of 30 post-secondary credits with a CGPA of 2.00 or higher including a minimum of nine transferable university-level credits;~~
- ~~2) a minimum of nine transferable university-level credits, with a CGPA of 3.00 or higher calculated on all credits attempted;~~
- ~~3) A UFV diploma (e.g. General Studies diploma, Liberal Arts diploma, etc.) or B.C. Associate degree in Arts or Science with a CGPA of 2.00 or higher; or~~
- ~~4) A post-secondary vocational, career or technical certificate or diploma (with minimum of 24 credits) from a recognised Canadian or international post-secondary institution, with a minimum CGPA of 2.50, calculated on all courses taken;~~

~~Note 1: Students applying under category 1 above, with fewer than 30 credits applicable for BIS entrance at the time they apply for admission, but who have a CGPA of at least 2.00 on all post-secondary courses attempted, may be considered for admission based on high school requirements.~~

~~Note 2: Any student who is applying to enter the BIS program with 60 or more transferable University-level credits will also need to submit a Customized Learning Plan (CLP) as part of their application. CLPs will not be used as a basis for admission.~~

~~One of the following is required:~~

- ~~• A minimum of 30 post-secondary credits with a CGPA of 2.00 or higher. These 30 credits must include a minimum of nine university-level credits, and a minimum of three credits of English composition or other writing courses, equivalent to ENGL 105 or CMNS 125.~~

- ~~A minimum of 9 post-secondary credits with a CGPA of 3.00 or higher.~~
- ~~Successful completion of a UFV diploma (e.g., General Studies diploma, Liberal Arts diploma, etc.) or B.C. Associate degree in Arts or Science with a CGPA of 2.00 or higher.~~
- ~~Completion of a post-secondary career or technical diploma (minimum of two years post-secondary credit) from a recognized Canadian or International post-secondary institution.~~
- ~~Students who have attended or are currently attending a post-secondary institution, have fewer than 30 credits applicable for BGS entrance at the time they apply for admission, and have a CGPA of at least 2.00 on all post-secondary courses attempted, may be considered for admission based on high school requirements.~~

~~Any student who is applying to enter the degree program with 60 or more credits will also need to submit a Customized Learning Plan (CLP) as part of their application. CLPs will not be used as a basis for admission.~~

### **Option 3: Non-traditional student entrance**

A limited number of seats will be available for students who are starting or returning to university after five or more years in the work force. Applicants must have B.C. secondary school graduation or equivalent; must meet the requirements for **ENGL 105**; and must submit a written statement of interest with their application. Students granted entrance under this application category are required to meet with the **BGS-BIS** Academic Advisor prior to ~~application~~registration.

Students who do not meet these requirements might consider **Qualifying Studies** and/or a meeting with an Academic Advisor.

#### **When to apply**

Applications are accepted for entrance to the Fall, Winter, and Summer semesters. For application deadlines, see **Specific intake application process**.

Commented [mr9]: NO CHANGE

#### **How to apply**

1. Apply online at [ufv.ca/admissions/apply](http://ufv.ca/admissions/apply).

**Additional documents required for a complete application:**

Commented [mr10]: NO CHANGE

- Official transcripts (or interim transcripts) from all post-secondary institutions attended (other than UFV) showing grade/course achievement as per entrance requirements. To be considered official, transcripts must be sent directly to UFV from the originating institution; see the **Transfer Credit** section for details. To retain their original application date, students should order early so transcripts arrive within two weeks of the date the application is mailed or submitted.
- For high school entrance, a final official transcript (if graduated). For students currently in Grade 12, final grades are due August 3.

2. Applicants will be advised of an admission decision and, if accepted, will be provided with registration information. A deposit is required prior to registration (see the **Fees and Other Costs** section) and will be applied toward tuition fees.
3. In cases where course work is in progress, an admission decision may be made conditional upon completion of academic requirements.

#### **Basis for admission decision**

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

#### **Fees and additional costs**

See the **Fees and Other Costs** section. Books and additional supply costs vary according to course subject matter and mode of delivery.

#### **Residency**

Students can complete academic course work at another post-secondary institution and transfer this credit to UFV to satisfy BIS degree requirements, under the following restrictions:

- Of the BIS overall total of 120 credits, 30 credits must be completed at UFV.
- Of the BIS upper-level total of 45 credits, 24 upper-level credits must be completed at UFV.
- For a minor program, at least 50 percent of the required upper-level credits in the specific discipline must be completed at UFV.

Provided those requirements are met, up to 50% of credits required for the degree may be met

**Commented [mr11]:** Changes in this section restricted to replacing 'BGS' with 'BIS'  
Moved from earlier part of calendar page to this point.

through recognition of non-formal credit through the PLAR process (including course challenges). Total transfer credit and prior learning credit must not exceed 90 credits.

### Courses from other institutions

Commented [mr12]: Minor change in last sentence

UFV students who wish to take academic work at other institutions for credit toward the degree must obtain permission. A letter of permission request is available at [ufv.ca/admissions](http://ufv.ca/admissions) or can be obtained from the Office of the Registrar. Students must be in good standing (CGPA > 2.0) to receive a letter of permission. When approval has been granted, the Registrar's office will issue a Letter of Permission to the student.

Except as noted below, total transfer and course challenge credits, including prior learning credit, may not exceed 90. A minimum of 30 credits must be completed at UFV. A minimum of 24 upper-level credits must be completed at UFV. Within these limits, transfer credit may be applied to the ~~BGS-BIS~~ with courses passed with a grade of D or higher. A D grade may not be sufficient for prerequisite purposes. Transfer credit is not used in the calculation of the institutional cumulative grade point ~~average but will be used to calculate grade point average for degree graduation purposes.~~

### Subsequent degree

Commented [mr13]: Revised, at recommendation of CWC/ pre-UEC

Students who have already completed a degree at the bachelor's level may be granted an additional bachelor's degree provided that the two degrees are significantly different and that the student has met the program requirements. ~~No more than 75% of the credits required for the additional degree may be applied from any previous degree. At least one third of the total credits required for the additional degree, including at least 30 upper-level (300-400) credits for the subsequent degree beyond the credits taken in the first or concurrent degree. At least 30 upper-level (300-400) credits for the subsequent degree must be taken at UFV.~~ Refer to the subsequent degree policy for further details.

### Bachelor of ~~General-Integrated~~ Studies requirements

There are four sets of requirements for the ~~BGSBIS~~.

1. Completion of the Customized Learning Plan
2. Degree, Breadth, and Portfolio requirements
3. Core Competencies requirements
4. Electives for the General option, minor(s), or Thematic option

### **Customized Learning Plans (CLPs)**

~~BGS-BIS~~ students are required to submit a Customized Learning Plan (CLP) as part of their degree planning and in meeting their degree requirements. The CLP requires the student to identify ~~the following: their L~~ learning and professional goals.

- ~~• Previous coursework.~~
- ~~• Explanation of how the student's proposed program will be used to meet their learning and professional goals.~~
- ~~• Identification (if any) of any Thematic option or minor that the student plans to complete as part of their degree.~~
- ~~• If proposing a Thematic option, a list of planned coursework and a timeline for completion is also to be included.~~

Students will develop their CLP using online ~~BGS-BIS~~ supports and in consultation with an Academic Advisor. Students will need to submit their CLPs before they have completed 60 university-level credits, including PLAR. A hold may be placed on registration until the CLP is submitted.

Students who are applying to enter the ~~BGS-BIS~~ after having already completed 60 or more university-level credits will need to submit their CLPs with their application. CLPs will not be used as a basis for admission, but are required to ensure the student can likely complete any planned coursework in time.

For more information, deadlines, and to obtain CLP forms, please refer to the **Bachelor of General-Integrated Studies** website.

### **Degree, breadth, and portfolio requirements**

To receive a Bachelor of ~~General-Integrated~~ Studies degree students must complete the following minimum requirements:

**Commented [mr14]:** Deletions in this section are just to shorten, not to change content

Other changes: BGS to BIS

**Commented [mr15]:** Changes reflect name change only

- 120 credits with a cumulative grade point average (CGPA) of 2.00 or higher, of which 30 must be completed at UFV.
- 45 upper-level credits, of which 24 are completed at UFV.
- CGPA of 2.00 in the ~~BCS-BIS~~ degree.
- CGPA in courses for minor(s), as specified by minor program.
- CGPA of 2.00 in all upper-level credits.
- The 120 credits must incorporate the breadth requirement.

In addition, students must complete the following two requirements:

- **Breadth requirement:** Completion of one or more courses in each of at least six separate disciplines, as identified by course prefix (e.g. AGRI, ANTH, ASTR, BIO, BUS, etc.).
- **E-Portfolio requirement:** Completion of PORT 398 and PORT 399.

## Core competencies requirements

### 1. **Effective Communications**

- One of: ENGL 105 or CMNS 125
- One of:
  - ~~ABT 135~~, AH 100, AH 101, AH 102, AH 204, CMNS 115, CMNS 175, CMNS 120, CMNS 235, CMNS 251, CMNS/ JRNL 300, ENGL 104, ENGL 200, ENGL 208, ENGL 210 to ENGL 215, ENGL 267, FREN 101, FREN 102, GD 101, GD 102, GD 157, GEOG 257/CMNS 257, GERM 101, GERM 102, HSER 120, JAPN 101, JAPN 102, JRNL 300, MEDA 222, MEDA 260, RUSS 101, RUSS 102, SOC 254, SPAN 101, SPAN 102, SPAN 201, THEA 111, THEA 112, VA 113, VA 115, ~~or~~ VA 116, VA 160, VA 180
  - Or completion of one of the following programs:
    - **Aboriginal Culture and Language Support diploma**
    - **Paralegal certificate**
    - **Paralegal diploma**

**Commented [mr16]:** Changes include:

- 1) New course options
- 2) Specific language prohibiting use of single course for more than one requirement

• **Records Management certificate**

Note: A single course in second language instruction (e.g. FREN, GERM, JAPN, RUSS, SPAN) can only be used to meet either the Effective Communications requirement or Intercultural Engagement requirement. Students may choose to complete a second course in language instruction, and use this to meet a second requirement.

**2. Use and Interpretation of Numerical Data**

**Commented [mr17]:** Addition of course option (CRIM 320) plus movement of note to bottom of section

- One of: STAT 104, STAT 106, or PSYC 110
- One of:
  - CRIM 320, ECON 100, ECON 101, GEOG 252, GEOG 253, PSYC 110, PSYC 202, or SOC 255
  - MATH 100 or above
  - STAT 100 or above (see Note)
  - Or completion of one of the following credentials:
    - **Architectural Drafting Technician certificate**
    - **Automation and Robotics and Technician diploma**
    - **Bookkeeping for Small Business certificate**
    - **Carpentry certificate**
    - **Construction Electrician certificate**
    - **Electronics Technician - Common Core certificate**

Note: STAT 104 or STAT 106 can only be used to meet one of the two required courses in this area.

**3. Scientific Literacy**

**Commented [mr18]:** NO CHANGE

- One of:
- Course in laboratory or field-based science, chosen from one of:
    - AGRI 123, 124, 129, or 163

- ASTR 103 or 104
- BIO, 100-level or higher
- CHEM, 100-level or higher
- GEOG 103 or 116
- HSC 111
- KIN 163 or 170
- PHYS 100-level or higher
- PSYC 202
- Or completion of one of the following credentials:
  - **Automation and Robotics and Technician diploma**
  - **Construction Electrician certificate**
  - **Electronics Technician - Common Core certificate**
  - **Practical Nursing diploma**

Note: Teacher education programs will have more specific lab science requirements. Students planning on continuing on to Teacher Education programs should check with those programs' admissions requirements.

#### 4. **Digital Competency**

**Commented [mr19]:** Addition of course options; BGS to BIS

One of:

- Course in digital competency:
  - BUS 160
  - CIS 100 or higher
  - COMP 120 or higher
  - CMNS 251, 375, or 376
  - ENGR 151
  - Any GD course except GD 102
  - GEOG 253, 300j, 300n, or 357
  - VA 160, VA 180, VA 271 or 365
- Or completion of one of the following credentials:
  - **Applied Business Technology certificate**
  - **Architectural Drafting Technician certificate**

- **Automation and Robotics Technician diploma**
- **Bookkeeping for Small Business certificate**
- **Computer Assisted Drafting certificate** (unavailable until further notice)
- **Electronics Technician - Common Core certificate**
- **Legal Administrative Assistant certificate**
- **Library and Information Technology diploma**
- **Medical Office Assistant certificate**
- **Paralegal certificate**
- **Paralegal diploma**
- **Records Management certificate**

- Or portfolio demonstration of having met competency outcomes through professional or related experience. See [BCS-BIS](#) website for more information on using portfolios to demonstrate competency requirements.

## 5. **Intercultural Engagement**

**Commented [mr20]:** Additional options included, plus two new notes

One of:

- ANTH 111, CMNS 180, EDUC 290, EDUC 291, GDS 250, [GEOG 346, GEOG 466/ GD 466](#), HIST 103, HIST 396o, [IDS 400d, or IDS 400e](#), LAS 200, PACS 200, [PACS 200](#), [SOC 200 /LAS 200](#), or SOC 250/GDS 250
- [EAP 054 or above](#)
- FNST 100 or above
- IPK [277, IPK 331, IPK 344/ANTH 344/SOC 344, or IPK 386102 or higher](#)
- FREN 101 or above; GERM 101 or above; HALQ 101 or above; JAPN 101 or above; MAND 101 or above; PUNJ 101 or above; RUSS 101 or above; SPAN 101 or above ([see Note 1](#))
- GDS 311/GEOG 398/SOC 398, or approved, relevant internship or practicum ([see Note 2](#))
- Or portfolio demonstration of having met competency outcomes through professional or related experience. See [BCS-BIS](#) website for more information on using portfolios to demonstrate competency requirements.

Note 1: A single course in second language instruction (e.g. FREN, GERM, JAPN, RUSS, SPAN) can only be used to meet either the Effective Communications requirement or Intercultural Engagement requirement. Students may choose to complete a second course in language instruction, and use this to meet a second requirement.

Note 2: A single internship or practicum can be used to meet the Intercultural Engagement requirement or the Professional Competency requirement, but not both. Students have the option of completing more than one internship or practicum in their program, in which case each placement can be used to meet a separate requirement.

## **6. Professional Competency**

**Commented [mr21]:** Additional options included

Successful completion of one of the following:

- One or more terms of Cooperative Education
- Credited Internship or Practicum in any discipline
- Credited Study Tour (4 or more credits)
- Three verified Co-Curricular Record (CCR) experiences, or 60 hours of CCR
- 60 hours of Co-Curricular Record experience
- Completion of a post-secondary Professional Program (e.g. TESL, Dental Hygiene, Veterinary Technologist) related to learning goals set out in the Individual Learning Plan and leading to professional designation or accreditation
- Completion of Continuing Education programs that have a practicum component (e.g. Legal Administration, Medical Office Assistant, Public Relations, Records Management, Veterinary Assistant).
- Completion of Continuing Education programs in:
  - o Bookkeeping for Small Business
  - o Coding Bridging
  - o Human Resources Management
  - o Library Technology Post-Diploma
  - o Management Skills for Supervisors
  - o Paralegal Certificate

o Paralegal Diploma

- Demonstration, through application and e-Portfolio, of sufficient prior work or volunteer experience relevant to learning goals set out in Individual Learning Plan. See BGS-BIS website for more information.

### Thematic Options, minors, and other specializations Degree pathways

Students can choose from the following degree pathways: Thematic eOptions, Thematic eOption (Professional Pilot Training), minors, Co-operative Education, and gGeneral option (no specialization).

Students must declare which option they plan to pursue by 60 credits or, for transfer students with more than 60 credits, at time of entry.

#### Thematic Option

The Thematic Option allows students to create a customized program of study in an area for which UFV does not offer a major or minor. Students complete their Thematic Options using upper-level courses from two or more disciplines.

Students have two pathways to complete a Thematic Option:

- Completion of a pre-set Thematic Option in one of the following areas: Aviation, Childhood Studies, Educational Studies, or Spanish Language and Culture Studies. Check with the BIS advisor for an updated list of pre-set Thematic Options;
- Design their own Thematic Option (subject to program approval) in a unique area. Past Thematic Options have included: explorations of aging, public relations, Middle Eastern studies, and agroecology. Students should request a meeting with the program advisor or chair to discuss building their Thematic Option around their educational and professional interests.

All thematic options must meet the following requirements:

- A minimum of 24 upper-level credits approved for use in the Thematic Option
- A minimum of 12 upper-level credits approved for use in the Thematic Option to be completed at UFV
- Upper-level credits from a minimum of two distinct disciplines used within the Thematic Option
- A minimum 2.00 grade requirement in all TO courses.

**Commented [mr22]:** The changes in this section add more specific details about Thematic Options. Some of these were recommended through the CWC/ pre-UEC process.

**Formatted:** Pattern: Clear (White)

The Thematic option allows students to create a customized program of study in an area for which UFV does not offer a major. A student can develop a thematic option from a variety of disciplines that form a common theme, such as administrative studies, explorations of aging, childhood studies, agroecology, advertising and social communication, or Middle Eastern studies.

Please see the **Bachelor of General Integrated Studies** website or the **Advising Centre website** for information on existing Thematic Options, and for the **Thematic Option handbook and forms**, more information on building your Thematic option or on selecting from an existing Thematic option.

**Commented [mr23]:** <https://www.ufv.ca/advising/program-planning/general-studies-students/>

Students ~~selecting-wishing to complete~~ a Thematic ~~Option~~ **must-should** identify this within their Customized Learning Plan (CLP) and submit ~~this-the CLP~~ by 60 credits or time of entry. Students choosing to complete a Thematic ~~Option~~ after the CLP can submit a separate proposal but should do so before 90 credits in order to ensure that sufficient time is available to complete requirements. The plan must include courses that satisfy the general degree requirements and show how the selected courses support the theme. ~~The requirements and details are located on the BGS website.~~

### **Thematic option — Aviation**

**Commented [mr24]:** This has been 'folded' into the section above.

#### **Professional Pilot Training — Fixed-Wing**

The BGS offers a departmentally-approved Thematic option for students who are completing the Aviation program. This program includes courses for obtaining private and commercial licenses and one of the specialized advanced options: heavy jet or professional flight instructor. Upon successful completion of the BGS requirements and Aviation courses students obtain a Thematic option: Professional Pilot Training — Fixed-Wing. Students can select courses to complete one or more minors or select courses for interest.

For this specialized option, students must apply and be admitted to Coastal Pacific Aviation. Please refer to the

## **Minors and extended minors**

Students select electives to complete one or more minors or extended minors. Refer to the appropriate calendar details for the minor or extended minor requirements.

A student may not complete both a minor and an extended minor in the same program.

Note: For students completing a Thematic option, only two upper-level courses (maximum of 8 credits) of a minor or extended minor can be used toward the Thematic option.

### **General option**

~~Students select courses to complete a minimum of 120 credits, of which at least 45 must be 300 or 400 level. Students are eligible to select any course for which they meet the prerequisites. Choice should include courses that enhance a career path, or meet prerequisites for professional programs, or for expanding academic knowledge. The program is developed according to the intended learning goals of the individual.~~

### **Co-operative Education option**

The Co-operative Education option provides students with the opportunity to acquire paid, career-related work experience in conjunction with their studies in the Bachelor of ~~General~~ Integrated Studies degree program. See the **Co-operative Education** section for more details.

### **General option**

Students select courses to complete a minimum of 120 credits, of which at least 45 must be 300 or 400 level. Students are eligible to select any course for which they meet the prerequisites. Choice should include courses that enhance a career path, or meet prerequisites for professional programs, or for expanding academic knowledge. The program is developed according to the intended learning goals of the individual.

### **Declaration of ~~general~~ minors, or ~~T~~hematic ~~O~~ption**

Students may formally declare minors or intention to complete a ~~T~~hematic ~~O~~ption after they have been accepted. Unless otherwise stated, to be eligible to declare minors, students must have earned a minimum grade of C on each of the required courses for the subject discipline. (Some areas have specific requirements; these are listed in the calendar under the relevant discipline.) Students are encouraged to declare minors or their intention to complete a thematic option as soon as possible.

Students will be required to make this declaration by ~~60-90~~ credits, or upon entry to degree program, whichever is later. Students may request to declare a minor or Thematic Option after ~~60-90~~ credits on a case-by-case basis. Students who do not meet the requirements of their planned minor or Thematic Option may be able to graduate with a ~~BGS-BIS~~, general option (~~no specialization~~).

**Commented [mr25]:** This change reflects the current trend of students declaring thematic options later. It has not created significant problems, so the change in calendar copy is designed to suggest greater flexibility.

Please note that the number of students wanting to enter any minor program may exceed capacity. Departments reserve the right to select competitively if necessary. UFV cannot guarantee available seats in required program courses on demand.

### **Graduation**

It is the student's responsibility to ensure all program requirements are met. This should be done by regular consultation with the ~~BGS-BIS~~ Academic Advisor. Degree candidates who qualify to receive a UFV degree must be approved by the ~~BGS-BIS~~ Academic Advisor and Senate.

Students must apply for graduation by completing the Graduation Request form available at [ufv.ca/admissions](http://ufv.ca/admissions), or from the Office of the Registrar. This should be done in the first month of the final semester. The final deadline for students who wish to attend the June Convocation ceremony is April 1 of each year, with all program requirements completed by the Winter semester grade deadline (see **Important Registration Dates**) of each year.

### **Policies relevant to the BIS**

**Commented [mr26]:** This section replaces previous and more cumbersome layout of policies

**Course Repeat policy (86):** Students may not register for a course more than twice without the permission of the department head/director for the discipline or their designate. All attempts will be recorded on the transcript, but only the highest grade will be included in the GPA. Transfer courses are considered in the number of attempts. A "W" or "AU" course is not counted as a duplication. Multiple repeats of the same course count as a single duplication.

**Commented [JJ27]:** Hyperlink to the policy:  
[https://www.ufv.ca/media/assets/secretariat/policies/Course-Repeat-\(86\).pdf](https://www.ufv.ca/media/assets/secretariat/policies/Course-Repeat-(86).pdf)

**Undergraduate Continuance policy (92):** Students must have a CGPA of at least 2.00 to remain in good academic standing. Failure to meet or maintain a 2.00 will result in restrictions on registration and may lead to academic suspension.

**Commented [JJ28]:** Hyperlink to the policy:  
[https://www.ufv.ca/media/assets/secretariat/policies/Undergraduate-Continuance-\(92\).pdf](https://www.ufv.ca/media/assets/secretariat/policies/Undergraduate-Continuance-(92).pdf)

**Subsequent and Concurrent Bachelor Degree policy (98):** Students who have already completed a degree at the bachelor's level may be granted an additional bachelor's degree provided that the two degrees are different, and that the student has met the program requirements. Students will complete at least one third of the total credits required for the additional degree, including at least 30 additional upper-level credits, beyond the credits taken in the first or concurrent degree. All 30 upper-level credits must be obtained through completion of UFV courses.

**Commented [JJ29]:** Hyperlink to the policy:  
[https://ufv.ca/media/assets/secretariat/policies/Subsequent-and-Concurrent-Bachelor-Degree-\(98\).pdf](https://ufv.ca/media/assets/secretariat/policies/Subsequent-and-Concurrent-Bachelor-Degree-(98).pdf)

**Transfer Credit policy (107) and Prior Learning Assessment and Recognition (PLAR) policy (94):** Students who successfully complete academic course work at another post-secondary institution may be able to transfer this credit to UFV to satisfy BIS degree requirements. Students will need to have earned a C- or higher in their transfer courses to use these to meet pre-requisite requirements for UFV courses, unless otherwise specified. Students may also be able to earn academic credit through an assessment of prior learning.

**Commented [JJ30]:** Hyperlink to the policy:  
[https://www.ufv.ca/media/assets/secretariat/policies/Transfer-Credit-\(107\).pdf](https://www.ufv.ca/media/assets/secretariat/policies/Transfer-Credit-(107).pdf)

**Commented [JJ31]:** Hyperlink to the policy:  
[https://www.ufv.ca/media/assets/secretariat/policies/Prior-Learning-Assessment-and-Recognition-\(94\).pdf](https://www.ufv.ca/media/assets/secretariat/policies/Prior-Learning-Assessment-and-Recognition-(94).pdf)

## **Course duplication**

Duplication refers to taking a course more than once.

Under university policy, students may not register for a course more than twice without permission of the appropriate dean or designate. Where a course has been repeated, for the purpose of the grade point average (GPA) UFV includes only the higher grade, but all attempts appear on the transcript. Some programs limit the number of courses which can be repeated. Transferred courses are considered in the number of attempts. See UFV's **Course Repeat policy (86)**.

A "W" or an "AU" in a course is not counted as duplication. Multiple repeats of the same course count as a single duplication.

Note: Repeats of lower-level Theatre practicum courses are exempt from the duplication rule when a grade of D or higher is achieved.

## **Standing required for continuance**

All students accepted into the BGS degree program at UFV are expected to maintain acceptable standards of scholarship. Specifically, they are expected to maintain a minimum 2.00 CGPA on all courses.

## **Undergraduate continuance**

Academic standing will be governed by UFV's **Undergraduate Continuance policy (92)**. Students enrolled in undergraduate courses (courses numbered 100 or above) must maintain an undergraduate Cumulative Grade Point Average (CGPA) of at least 2.00 to remain enrolled in Good Academic Standing at UFV. Students in Good Academic Standing will have no registration limits placed on them. Failure to meet the minimum CGPA requirement will result in restrictions on registration and may eventually lead to academic suspension from undergraduate studies at UFV. Students on Academic Warning or Academic Probation are limited to registering in 10 credits.

The academic standing of all students covered under this policy for courses where letter grades are assigned will be determined at intervals of 9 credits at the start of a student's academic career and then at the end of every term after 27 credits have been completed. Students will be assessed after every term enrolled, but Academic Standing will only change at the intervals noted above. Students' academic standing will be permanently reflected on their student record and will appear on official and unofficial transcripts.

After each semester, students put on Academic Warning, Academic Probation, or Required to Withdraw status or who are continued on Warning or Probation will be notified by the Registrar.

## **Required to withdraw**

**Commented [mr32]:** This section and the following sections removed altogether on suggestion from CWC/ pre-UEC consult

Students who have been required to withdraw from the degree program may have the opportunity to continue to take courses as a Qualifying Studies student; however, they may not register for any upper-level courses.

## **Readmission**

A student who is required to withdraw from the BGS degree program must submit an appeal for readmission to the BGS Academic Advisor if they wish to resume studies in the degree program.

Students who have been required to withdraw will be advised to complete a further nine credits of academic work or to repeat a similar amount of academic work taken previously in order to demonstrate their academic abilities. Appeals must be received at least three months before the start of the semester for which a student has applied. Readmission is not automatic. If readmitted, students will be placed on Academic Warning again, subject to the conditions for Academic Warning as described above.

## **Standing on readmission**

If readmitted, students will be placed on academic warning again, subject to the conditions for academic warning as described above.

## **Course listings**

For complete details on courses see the **course descriptions** section.

**Memo for Course Changes**

To: CACC

From: Michelle Rhodes, Chair, Environmental Studies Curriculum Committee

Date: September 19, 2018

**Subject: Proposal for revision of**

- ENV 200: Bioregional Communities
- ENV 410: Environmental Seminar

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

- ☐ Six-year review
- ☐ Number and/or course code
- ☐ Credits and/or total hours
- ☐ Title
- ☒ Calendar description
- ☐ Prerequisites and/or co-requisites
- ☒ Frequency of course offering
- ☒ Learning outcomes
- ☒ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☒ Other – Please specify:

2. Rationale for change:

These courses were created a couple of years ago, and approved as part of the degree proposal package for the Bachelor of Environmental Studies and the Bachelor of Environmental Studies-Natural Sciences. As it has taken some time for the degree to finally be approved, it now needs updating. These courses are being revised along with it, to ensure that all updates are contemporaneous.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

Additional learning outcome to ENV 200 and adjustment of learning outcomes for ENV 410 reflect increased emphasis on Indigenous ecological knowledge in both the courses and the program. The program has already identified LOs related to Indigenous ecological knowledge.

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

No

5. Which program areas have been consulted about the change(s)?

None

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

The learning outcomes and the ENV 200 reading list have been updated to include more Indigenous knowledge and material. (Reading list for ENV 410 already included this.)

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

8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area: N/A

- a. Credit value
- b. Class size limit
- c. Frequency of offering
- d. Resources required (labs, equipment)

9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?

Field trips are required for each course. Course has higher tuition already, which offsets these costs. Additional costs are likely to be limited—namely, transportation to and from sites; they are not expected to be onerous.

10. Estimate of the typical costs for this course, including textbooks and other materials: Tuition plus books for each = \$1100 (tuition = \$250/credit)

**Response to CWC comment, November 2018**

| CWC comment/ UEC pre-screening                                                                                                                                                                                                                                                                                                                                                                                                                                    | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>ENV 200:</b></p> <ul style="list-style-type: none"> <li>• Calendar description: could examples of potential disciplines (“multi-disciplinary... approaches” be included?</li> <li>• Learning outcome #4: what disciplines does the department have in mind here (“multiple disciplinary approaches”)?</li> <li>• Course content, week 2: suggest revising “What are more national, global?” to “What <b>issues</b> are more national, global?”</li> </ul>   | <p><i>I think this would cause greater confusion than value. Environmental Studies is not limited to a small number of disciplines. It’s possible to combine English, Psychology, Biology, and Architecture in one course. It’s also possible to combine Visual Arts, Geography, Physics, and Agriculture.</i></p> <p><i>See previous comment.<br/>The learning outcome is not stipulating that students will learning approaches from <u>specific</u> disciplines but that they will instead be challenged to use multiple disciplines to investigate common problems. The goal is to develop a more complex lens, not peg this lens to specific fields of study.</i></p> <p><i>Change made.</i></p> |
| <p><b>ENV 410:</b></p> <ul style="list-style-type: none"> <li>• Calendar description: could examples of potential disciplines (“multiple disciplinary perspectives” be included?</li> <li>• The following will be added to the calendar description: “Note: This course will be offered under different letter designations (e.g. C-Z) representing different topics. This course may be repeated for credit provided the letter designation differs.”</li> </ul> | <p><i>Same as for ENV 200. The field is not limited to particular disciplines. To add examples may create a false impression rather than inform.</i></p> <p><i>Addition made</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



ORIGINAL COURSE IMPLEMENTATION DATE: September 2019  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED (six years after UEC approval): December 2024  
 Course outline form version: 10/27/2017

## 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> ENV 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                         |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Course Full Title:</b> Bioregional Communities<br><b>Course Short Title:</b><br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Faculty:</b> Faculty of Social Sciences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Department (or program if no department):</b> Environmental Studies Program Committee                                                                                                                                                                                                                                                                                                                                                       |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Calendar Description:</b><br>Uses the Fraser Lowlands as a laboratory for the development of multi-disciplinary and hands-on approaches to defining and sustaining our bioregion and the ecological and cultural communities within it.<br><br>Note: Field trips outside of class time will be required. Please refer to program website for field experience scheduling information.                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 18 university-level credits including GEOG 111.                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br>Former course code/number:<br>Cross-listed with:<br>Dual-listed with:<br>Equivalent course(s):<br><i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>                                                                                                                                                                                                                                                                                                           | <b>Special Topics</b><br>This course is offered with different topics:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(Double-click on box to select it as checked.)</i><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>(The specific topic will be recorded when offered.)</i> |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Typical Structure of Instructional Hours</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td>Lecture/seminar hours</td> <td style="text-align: center;">20</td> </tr> <tr> <td>Tutorials/workshops</td> <td></td> </tr> <tr> <td>Supervised laboratory hours</td> <td style="text-align: center;">25</td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td style="text-align: center;">15</td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td style="text-align: right;"><b>Total hours</b></td> <td style="text-align: center;"><b>60</b></td> </tr> </table> | Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                          | 20 | Tutorials/workshops |  | Supervised laboratory hours | 25 | Experiential (field experience, practicum, internship, etc.) | 15 | Supervised online activities |  | Other contact hours: |  | <b>Total hours</b> | <b>60</b> | <b>Transfer Credit</b><br>Transfer credit already exists: (See <a href="#">bctransferguide.ca</a> )<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes<br>Submit outline for (re)articulation:<br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i> |
| Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| Tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| Supervised laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 25                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 15                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>60</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Expected Frequency of Course Offerings:</b><br>Every winter<br><i>(Every semester, Fall only, annually, every other Fall, etc.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| Labs to be scheduled independent of lecture hours: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Department / Program Head or Director:</b> Michelle Rhodes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Date approved:</b> September 2018                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Date approved:</b> October 12, 2018                                                                                                                                                                                                                                                                                                                                                                                                         |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Dean/Associate VP:</b> Jacqueline Nolte                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Date approved:</b> October 12, 2018                                                                                                                                                                                                                                                                                                                                                                                                         |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Date of posting:</b> November 30, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Date of meeting:</b> December 12, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |  |                             |    |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |

## Learning Outcomes:

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

1. Identify the features that characterize and define one's bioregion(s);
2. Discuss the ways in which community, region, and sustainability are envisioned at different scales;
3. Acknowledge and integrate Indigenous ways of knowing our shared environments into assessing bioregional futures.
4. Demonstrate ability to use multiple disciplinary approaches and tools used to create more sustainable environments specific to unique regional contexts;
5. Work collaboratively with others to devise solutions to local environmental challenges
6. Assess one's own ethics and practices in relation to bioregional and sustainability frameworks.

## 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.)

This is a multi-instructor course that integrates a variety of approaches to discussing, analyzing, and working towards improving bioregional communities. Includes field trips, lectures, guest speakers, workshops, and seminar discussion.

**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. Kimmerer, R.W.          | Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teaching of Plants                                                                                | <input type="checkbox"/> | UC Press    | 2014 |
| 2. Wackernagel and Rees    | Our Ecological Footprint: Reducing Human Impact on Earth                                                                                                                | <input type="checkbox"/> | New Society | 1996 |
| 3. Wilson, E.O.            | Biophilia: The Human Bond with Other Species                                                                                                                            | <input type="checkbox"/> | Harvard     | 1996 |
| 4. Wegner, J, et al        | Shifting from Vision to Reality: Perspectives on Regional Food Policies and Food System Planning Barriers at the Local Level. <i>Canadian Journal of Urban Research</i> | <input type="checkbox"/> |             | 2015 |
| 5. Mullinix, K, et al      | The Future of Our Food System: Report on the Southwest BC Bioregion Food System Design Project                                                                          | <input type="checkbox"/> |             | 2016 |

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

N/A

## Typical Evaluation Methods and Weighting

|                |   |              |     |                   |     |            |      |
|----------------|---|--------------|-----|-------------------|-----|------------|------|
| Final exam:    | % | Assignments: | 30% | Field experience: | 20% | Portfolio: | %    |
| Midterm exam:  | % | Project:     | 20% | Practicum:        | %   | Other      |      |
| Quizzes/tests: | % | Lab work:    | 20% | Seminar Partic.:  | 10% | Total:     | 100% |

## Details (if necessary):

### Typical Course Content and Topics

Week 1: Defining concepts (e.g. sustainability); Mental mapping exercises ("What is your bioregion?")  
 Week 2: How to define our bioregion? What issues are unique to the region? What issues are more national, global? Research strategies for answering these questions.  
 Weeks 3 and 4: Physical geography and ecology of our bioregion  
 Week 5: Field exercises/ field trip, e.g. Sumas Lake  
 Weeks 6 and 7: First Nations, settler societies, and ecological change in the Fraser lowlands  
 Weeks 8 and 9: Workshops: Reflecting on and communicating our "place" in the Fraser Lowlands  
 Weeks 10 and 11: Sustaining land and economy: agriculture, development, and the Fraser Lowlands  
 Weeks 12 and 13: Building resiliency in changing bioregions: climate change and community evolution in our bioregion

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University of the Fraser Valley Transfer Credit Request Form

## Transfer Credit Request Form

Please fill out this form if transfer credit should be requested.

| <u>Institution code</u> | <u>Full Institution name</u>                     | <u>Transfer credit exists</u> | <u>Request transfer credit</u>      |
|-------------------------|--------------------------------------------------|-------------------------------|-------------------------------------|
| AI                      | Art Institute of Vancouver                       | <input type="checkbox"/>      | <input type="checkbox"/>            |
| ALEX                    | Alexander College                                | <input type="checkbox"/>      | <input type="checkbox"/>            |
| ASM                     | Acsenda School of Management                     | <input type="checkbox"/>      | <input type="checkbox"/>            |
| AU                      | Athabasca University                             | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| CAPU                    | Capilano University                              | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| CNC                     | College of New Caledonia                         | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| COTR                    | College of the Rockies                           | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| COLU                    | Columbia College                                 | <input type="checkbox"/>      | <input type="checkbox"/>            |
| COQU                    | Coquitlam College                                | <input type="checkbox"/>      | <input type="checkbox"/>            |
| DOUG                    | Douglas College                                  | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| EC                      | Emily Carr University of Art & Design            | <input type="checkbox"/>      | <input type="checkbox"/>            |
| FDU                     | Fairleigh Dickinson University                   | <input type="checkbox"/>      | <input type="checkbox"/>            |
| JIBC                    | Justice Institute of BC                          | <input type="checkbox"/>      | <input type="checkbox"/>            |
| KWAN                    | Kwantlen Polytechnic University                  | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| NVIT                    | Nicola Valley Institute of Technology            | <input type="checkbox"/>      | <input type="checkbox"/>            |
| NIC                     | North Island College                             | <input type="checkbox"/>      | <input type="checkbox"/>            |
| NLC                     | Northern Lights College                          | <input type="checkbox"/>      | <input type="checkbox"/>            |
| NWCC                    | Northwest Community College                      | <input type="checkbox"/>      | <input type="checkbox"/>            |
| OC                      | Okanagan College                                 | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| SFU                     | Simon Fraser University                          | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| TRU                     | Thompson Rivers University                       | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| TRU-OL                  | Thompson Rivers University, Open Learning        | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| TWU                     | Trinity Western University                       | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| UBC                     | University of British Columbia- Vancouver Campus | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| UBCO                    | University of British Columbia- Okanagan Campus  | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| UCW                     | University Canada West                           | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| UNBC                    | University of Northern BC                        | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| UVIC                    | University of Victoria                           | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| VCC                     | Vancouver Community College                      | <input type="checkbox"/>      | <input type="checkbox"/>            |
| VIU                     | Vancouver Island University                      | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |

Visit [www.bccat.ca/articulate/additions/upperpolicy](http://www.bccat.ca/articulate/additions/upperpolicy) for a list of the institutions that will articulate upper-level courses.

For further information on identifying appropriate receiving institutions, please see the following webpage: [http://bccat.ca/info/handbook/pages/identifying-appropriate-receiving-institutions?in\\_handbook=241](http://bccat.ca/info/handbook/pages/identifying-appropriate-receiving-institutions?in_handbook=241)



ORIGINAL COURSE IMPLEMENTATION DATE: September 2019  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED (six years after UEC approval): December 2024  
 Course outline form version: 10/27/2017

## 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> ENV 410                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           | <b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                    |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Course Full Title:</b> Environmental Seminar<br><b>Course Short Title:</b><br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Faculty:</b> Faculty of Social Sciences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Department (or program if no department):</b> Environmental Studies Program Committee                                                                                                                                                                                                                                                                                                                                                                  |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Calendar Description:</b><br><p>Seminar course structured for in-depth exploration of an environmental issue, body of literature, or research question. Topic will be approached from multiple disciplinary perspectives.</p> <p>Note: This course will be offered under different letter designations (e.g. C-Z) representing different topics. This course may be repeated for credit provided the letter designation differs.</p> <p>Note: Field trips outside of class time will be required. Please refer to program website for field experience scheduling information.</p> |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | 60 university-level credits.                                                                                                                                                                                                                                                                                                                                                                                                                              |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br>Former course code/number:<br>Cross-listed with:<br>Dual-listed with:<br>Equivalent course(s):<br><i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>                                                                                                                                                                |           | <b>Special Topics</b><br>This course is offered with different topics:<br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <i>(Double-click on box to select it as checked.)</i><br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><i>(The specific topic will be recorded when offered.)</i> |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Typical Structure of Instructional Hours</b> <table border="1"> <tr> <td>Lecture/seminar hours (seminar)</td> <td>45</td> </tr> <tr> <td>Tutorials/workshops</td> <td></td> </tr> <tr> <td>Supervised laboratory hours</td> <td></td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td>15</td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total hours</b></td> <td><b>60</b></td> </tr> </table>                                                          |           | Lecture/seminar hours (seminar)                                                                                                                                                                                                                                                                                                                                                                                                                           | 45 | Tutorials/workshops |  | Supervised laboratory hours |  | Experiential (field experience, practicum, internship, etc.) | 15 | Supervised online activities |  | Other contact hours: |  | <b>Total hours</b> | <b>60</b> | <b>Transfer Credit</b><br>Transfer credit already exists: (See <a href="#">bctransferguide.ca</a> )<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes<br>Submit outline for (re)articulation:<br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i> |  |
| Lecture/seminar hours (seminar)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45        |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| Tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| Supervised laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 15        |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>60</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                                                                                                                                                                                      |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Expected Frequency of Course Offerings:</b><br>Annually<br><i>(Every semester, Fall only, annually, every other Fall, etc.)</i>                                                                                                                                                                                                                                                                                                                        |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Department / Program Head or Director:</b> Michelle Rhodes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Date approved:</b> September 2018                                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Date approved:</b> October 12, 2018                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Dean/Associate VP:</b> Jacqueline Nolte                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Date approved:</b> October 12, 2018                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Date of posting:</b> November 30, 2018                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | <b>Date of meeting:</b> December 12, 2018                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                     |  |                             |  |                                                              |    |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                          |  |

ENV 410

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:

1. Provide a nuanced written and verbal discussion of the particular ecological question or issue under study;
2. Use advanced library and field research methodologies in final reports or essays;
3. Integrate varied points of view and ways of knowing in both written and verbal analysis of an issue or body of work;
4. Provide a verbal support and defence of one's perspective on a complicated environmental question using environmental learning completed in the course;
5. Reflect, in depth, on one's relationship to a particular issue or body of environmental work.

## 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.*)

Seminar workshops, guest lectures, student presentations

**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)<br><i>Special Topic: Ecological Lit.</i> | Title (article, book, journal, etc.)                           | Current ed. | Publisher                  | Year |
|---------------------------------------------------------------------|----------------------------------------------------------------|-------------|----------------------------|------|
| 1. Carolan, T. & Stewart, F.                                        | Cascadia: The Life and Breath of the World                     | X           | Univ. Hawaii Press         | 2013 |
| 2. Robinson, Eden                                                   | The Sasquatch at Home                                          | X           | Univ. Alberta Press        | 2013 |
| 3. Glavin, T. & B. Parfitt                                          | Sturgeon Reach                                                 | X           | New Star                   | 2013 |
| <i>Special Topic: Oil</i>                                           |                                                                |             |                            |      |
| 5. Bridge, G. and LeBillion, P.                                     | Oil (2 <sup>nd</sup> ed.)                                      | X           | Polity                     | 2017 |
| 6. LeMenager, S.                                                    | Living Oil: Petroleum and Culture in the American Century      |             | Oxford University Press    | 2014 |
| 7. Johnson, B                                                       | Carbon Nation: Fossil Fuels and the Making of American Culture |             | University Press of Kansas | 2017 |

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

N/A

## Typical Evaluation Methods and Weighting

|                |     |              |     |                   |     |               |      |
|----------------|-----|--------------|-----|-------------------|-----|---------------|------|
| Final exam:    | %   | Assignments: | 50% | Field experience: | %   | Portfolio:    | %    |
| Midterm exam:  | 25% | Project:     | %   | Practicum:        | %   | Presentation: | 15%  |
| Quizzes/tests: | %   | Lab work:    | %   | Seminar Partic.:  | 10% | Total:        | 100% |

## Details (if necessary):

## Typical Course Content and Topics

### Sample Outline 1: Special Topic: Ecological Literature

**Week 1:** *Introduction: the idea of "ecology" and some comparative aboriginal views.*

Reading: Alice Walker, "We Alone"; Louis Owens, "Burning the Shelter", Eden Robinson, from "The Sasquatch at Home."

**Week 2:** *Classical roots of the Pastoral and Transcendentalism.*

Reading: Horace and Virgil – from the *Epodes* and *Georgics*; William Wordsworth, Three Poems; Ralph Waldo Emerson, "Nature" and "Language."

**Week 3:** *Cascadian Literary Ethics & Aesthetics.*

Reading: "Reinhabitation", Gary Snyder; Trevor Carolan, Editor's Introduction, *Cascadia: The Life and Breath of the World*; Eve Joseph, "Styawat: Wind the Blows the Clouds Away" and "Canoe Builder"; Emily Carr, "Word Sketches from Klee Wyck."

**Week 4:** *Intro. to Deep Ecology and the idea of 'Place'.*

Reading: Joanna Macy "The Greening of the Self"; Aldo Leopold "Thinking Like a Mountain"; Joan Halifax, "The Third Body: Buddhism, Shamanism and Deep Ecology."

**Week 5:** *Place, Consciousness and Politics.*

Reading: Barry Lopez, "Landscape & Narrative"; Rex Weyler, "Nature's Apprentice."

**Week 6:** *Shaping a literary ecology of the Fraser Valley.*

Reading: Terry Glavin & Larry Commodore, "Spirit Dancer"; T. Glavin & Ben Parfitt, selections from *Sturgeon Reach*; Kuldip Gill, from *A Valley Sutra*.

**Week 7:** *You Are What You Eat.*

Reading: Wendell Berry, "Nature as Measure"; "The Pleasures of Eating"; Lane Deer, "Talking with the Owls and Butterflies."

**Week 8:** *Eco-literacy & Eco-linguistics.*

Reading: Hugh Brody, from *Maps of Dreams*. Robert Bringhurst, "The Tree of Meaning and the Work of Ecological Linguistics."  
**Week 9:** *Making a Difference - Eco-Lit as Advocacy*.  
 Reading: Wade Davis "The Shadow of Red Cedar"; Charles Lillard, "Writers for Clayoquot."  
**Week 10:** *Fish, Weather, Coastal Stories*  
 Reading: Theresa Kishkan, "Marine Air"; Tom Jay "The Salmon of the Heart"; Judith Roche, "Salmon Suite."  
**Week 11:** *Dharma Gaia*  
 Reading: Ursula LeGuin, "Women and Wilderness"; Julia Menard-Warwick, "Tree-Planting at Sombrio Creek"; Susan Musgrave, Two Poems.  
**Week 12:** *In the Canadian Grain*.  
 Reading: Chief Thunderchild, "A Winter of Hardship"; Farley Mowat, from *Never Cry Wolf*; Bob Hunter, "From Amchitka to Mururoa."  
**Week 13:** *East-West - Home*  
 Reading: Red Pine, from *The Mountain Poems of Stonehouse*; Rob Sieniuc, "Chief Dan George and Sacred Ecology"; Gary Snyder, "For All."

**Sample Outline 2: Special Topic: Oil**

**Week 2:** *Introduction. Fossil Fuels, Society, and Technology: Interdependence and Expansion*  
**Week 2:** *Petroleum geology (brief) and source locations; Historical growth of petroleum use prior to 1800*  
**Week 3:** *The Industrial Revolution and technological demands on oil*  
**Week 4:** *Oil and post-WWII society—where culture and disposable consumption collide*  
**Week 5:** *Oil and the rise of the modern environmental movement in the West*  
**Week 6:** *Petro-politics: OPEC, oil crises, oil independence, and oil policies in the West*  
**Week 7:** *Petro-politics: Development, environmental justice, and oil*  
**Week 8:** *Oil markets in NA and globally*  
**Week 9:** *Drilling for oil today—geographies, processes, and challenges.*  
**Week 10:** *Refining oil—processes, markets, challenges. Field trip*  
**Week 11:** *Moving oil: Rural and First Nations land management and sovereignty issues*  
**Week 12:** *Development, climate change, and oil futures*  
**Week 13:** *Energy efficiency and technology fixes in light of scarcity*

ENV 410

University of the Fraser Valley Transfer Credit Request Form

## Transfer Credit Request Form

Please fill out this form if transfer credit should be requested.

| <u>Institution code</u> | <u>Full Institution name</u>                     | <u>Transfer credit exists</u> | <u>Request transfer credit</u>      |
|-------------------------|--------------------------------------------------|-------------------------------|-------------------------------------|
| AI                      | Art Institute of Vancouver                       | <input type="checkbox"/>      | <input type="checkbox"/>            |
| ALEX                    | Alexander College                                | <input type="checkbox"/>      | <input type="checkbox"/>            |
| ASM                     | Acsenda School of Management                     | <input type="checkbox"/>      | <input type="checkbox"/>            |
| AU                      | Athabasca University                             | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| CAPU                    | Capilano University                              | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| CNC                     | College of New Caledonia                         | <input type="checkbox"/>      | <input type="checkbox"/>            |
| COTR                    | College of the Rockies                           | <input type="checkbox"/>      | <input type="checkbox"/>            |
| COLU                    | Columbia College                                 | <input type="checkbox"/>      | <input type="checkbox"/>            |
| COQU                    | Coquitlam College                                | <input type="checkbox"/>      | <input type="checkbox"/>            |
| DOUG                    | Douglas College                                  | <input type="checkbox"/>      | <input type="checkbox"/>            |
| EC                      | Emily Carr University of Art & Design            | <input type="checkbox"/>      | <input type="checkbox"/>            |
| FDU                     | Fairleigh Dickinson University                   | <input type="checkbox"/>      | <input type="checkbox"/>            |
| JIBC                    | Justice Institute of BC                          | <input type="checkbox"/>      | <input type="checkbox"/>            |
| KWAN                    | Kwantlen Polytechnic University                  | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| NVIT                    | Nicola Valley Institute of Technology            | <input type="checkbox"/>      | <input type="checkbox"/>            |
| NIC                     | North Island College                             | <input type="checkbox"/>      | <input type="checkbox"/>            |
| NLC                     | Northern Lights College                          | <input type="checkbox"/>      | <input type="checkbox"/>            |
| NWCC                    | Northwest Community College                      | <input type="checkbox"/>      | <input type="checkbox"/>            |
| OC                      | Okanagan College                                 | <input type="checkbox"/>      | <input type="checkbox"/>            |
| SFU                     | Simon Fraser University                          | <input type="checkbox"/>      | <input type="checkbox"/>            |
| TRU                     | Thompson Rivers University                       | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| TRU-OL                  | Thompson Rivers University, Open Learning        | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| TWU                     | Trinity Western University                       | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| UBC                     | University of British Columbia- Vancouver Campus | <input type="checkbox"/>      | <input type="checkbox"/>            |
| UBCO                    | University of British Columbia- Okanagan Campus  | <input type="checkbox"/>      | <input type="checkbox"/>            |
| UCW                     | University Canada West                           | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| UNBC                    | University of Northern BC                        | <input type="checkbox"/>      | <input checked="" type="checkbox"/> |
| UVIC                    | University of Victoria                           | <input type="checkbox"/>      | <input type="checkbox"/>            |
| VCC                     | Vancouver Community College                      | <input type="checkbox"/>      | <input type="checkbox"/>            |
| VIU                     | Vancouver Island University                      | <input type="checkbox"/>      | <input type="checkbox"/>            |

Visit [www.bccat.ca/articulate/additions/upperpolicy](http://www.bccat.ca/articulate/additions/upperpolicy) for a list of the institutions that will articulate upper-level courses.

For further information on identifying appropriate receiving institutions, please see the following webpage:  
[http://bccat.ca/info/handbook/pages/identifying-appropriate-receiving-institutions?in\\_handbook=241](http://bccat.ca/info/handbook/pages/identifying-appropriate-receiving-institutions?in_handbook=241)

**Memo for New Course**

To: Samantha Pattridge, Associate Dean of Students and Chair, College of Arts Curriculum Committee

Karli Menagh, Arts Committees Assistant

CC: Dr. Lucy Lee, Dean of Science

Ian Affleck, Chair, Faculty of Science Curriculum Committee

Caroline Majeau, Administrative Assistant

From: Claire Hay, GATE

Date: 25 September 2018

**Subject: Proposal for new course GEOG 331 – Environmental Assessment and Management**

1. Rationale for new course:

**This course fulfils the need within the BES and BES-NS for a dedicated course in the area of environmental management and assessment. It complements existing GEOG courses and will provide students with a theoretical and practical background in this discipline.**

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

**This course serves as a required course in the BES (implementation Fall 2019) and BES-NS programs (implementation Winter 2020). Program changes for these new programs will be submitted separately. It will be added to the BA major in Geography at a future date.**

*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):

**This course meets the following GATE and BES program outcomes of Knowing, Thinking, Investigating, Communicating and Citizenship. The specific POs met by GEOG 331 include:**

- Practice sound reasoning, and formulate and justify ethical and just decisions and policies
- Demonstrate a basic knowledge of the historical evolution and application of Canadian environmental policy
- Identify strategies that societies can use to create more sustainable systems and healthier built and natural environments
- Identify the major challenges facing Canadians in the management of air, water, and land resources
- Discuss the socio-cultural importance of air, water, and land resources in Canadian societies
- Evaluate concepts and theories of intrinsic value, environmental ethics, and justice as they relate to these resource systems
- Apply basic economic principles to the study of environmental problems, natural resources, and measures of sustainability
- Address and practice the values associated with environmental and social sustainability.
- Think holistically about environmental systems and questions.

4. Will this course be required by any program beyond the discipline? If so, how will this course affect that program or programs?

**It is required by BES and BES-NS. It will be added to the GATE BA major at a later date.**

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

**GATE has been consulted**

6. If a new discipline designation is required, explain why:

**NA**

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

**Learning outcome speak specifically to inclusive environmental management strategies used in Indigenous spaces and the context of the treaty process. Course delivery will be reflective of indigenous practices and traditional ways of knowing.**

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

**NA**

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

- a. Credit value – **4 credits; consistent with existing GATE courses; no budget impact**
- b. Class size limit – **28 seats; this aligns with existing 4 credit GEOG courses; no budget impact**
- c. Frequency of offering – **course will be offered every 2 years. Rotation aligns with upper-level GEOG courses; no budget impact**
- d. Resources required (labs, equipment) – **None anticipated**

10. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?

**Field trips may be required for this course and will be announced in the timetable along with any fees required. Field trip dates will be posted 1 month prior to the start of classes on GATE's website.**

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

**Textbook - \$100**

**Field trip fees may be required <\$100. Note that the department covers 50% of accommodation and transportation costs for all upper-level geography field trips.**



ORIGINAL COURSE IMPLEMENTATION DATE: September 2019  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED (six years after UEC approval): December 2024  
 Course outline form version: 10/27/2017

## 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> GEOG 331                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>                                                |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Course Full Title:</b> Environmental Assessment and Management<br><b>Course Short Title:</b> Env Assessment and Mgmt<br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Faculty:</b> Faculty of Social Sciences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Department (or program if no department):</b> Geography and the Environment                                        |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Calendar Description:</b><br>Examination of environmental assessment and ecosystem management frameworks utilized in natural resource management. Specific investigation of processes, policies, and procedures used in B.C. and Canada, the U.S., and selected global contexts.<br><br>Note: Field trips outside of class time are required. Please refer to Geography website for scheduling information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 45 university-level credits, including at least 6 credits of AGRI, ANTH, BIO, CHEM, GDS, GEOG, IPK, POSC, and/or SOC. |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br/>                     Former course code/number:<br/>                     Cross-listed with:<br/>                     Dual-listed with:<br/>                     Equivalent course(s):<br/> <i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i> </div> <div style="width: 48%;"> <b>Special Topics</b><br/>                     This course is offered with different topics:<br/> <input checked="" type="checkbox"/> No   <input type="checkbox"/> Yes <i>(Double-click on box to select it as checked.)</i><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>(The specific topic will be recorded when offered.)</i> </div> </div> |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Typical Structure of Instructional Hours</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture/seminar hours</td><td style="text-align: center;">20</td></tr> <tr><td>Tutorials/workshops</td><td style="text-align: center;">30</td></tr> <tr><td>Supervised laboratory hours</td><td></td></tr> <tr><td>Experiential (field experience, practicum, internship, etc.)</td><td style="text-align: center;">10</td></tr> <tr><td>Supervised online activities</td><td></td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total hours</b></td><td style="text-align: center;"><b>60</b></td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                       | Lecture/seminar hours | 20 | Tutorials/workshops | 30 | Supervised laboratory hours |  | Experiential (field experience, practicum, internship, etc.) | 10 | Supervised online activities |  | Other contact hours: |  | <b>Total hours</b> | <b>60</b> |
| Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20                                                                                                                    |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| Tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 30                                                                                                                    |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| Supervised laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10                                                                                                                    |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>60</b>                                                                                                             |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Transfer Credit</b><br>Transfer credit already exists: (See <a href="#">bctransferguide.ca</a> )<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes<br>Submit outline for (re)articulation:<br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Expected Frequency of Course Offerings:</b><br>Every other Winter<br><i>(Every semester, Fall only, annually, every other Fall, etc.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| Labs to be scheduled independent of lecture hours: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                       |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Department / Program Head or Director:</b> Claire Hay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Date approved:</b> September 2018                                                                                  |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Date approved:</b> October 12, 2018                                                                                |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Dean/Associate VP:</b> Jacqueline Nolte                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Date approved:</b> October 12, 2018                                                                                |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Date of posting:</b> November 30, 2018                                                                             |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Date of meeting:</b> December 14, 2018                                                                             |                       |    |                     |    |                             |  |                                                              |    |                              |  |                      |  |                    |           |

**Learning Outcomes:**

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

- Distinguish between different types of conflicts associated with natural resource values and use, as well as identify the strategies used to mitigate these;
- Discuss the features of adaptive and inclusive environmental management strategies used within Indigenous and rural spaces;
- Contextualize the requirements and expectations of environmental management frameworks, assessments and policies with regard to time, jurisdiction, and treaty processes;
- Compare the requirements and objectives of provincial, territorial, and federal environmental assessment processes;
- Evaluate policy frameworks and tools designed to incorporate multiple forms of knowledge as part of management and assessment;
- Develop quantitative and qualitative methods to critically assess the level and effectiveness of public engagement tools utilized in a selected environmental assessment process;
- Work with peers to design and complete a complex multi-stage research project.
- Communicate their ethical position relative to professional ethics in environmental management.

**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.*)

In-class discussion/ seminars, field trips, and lectures.

**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. Hanna, Ryan             | Environmental Impact Assessment: Practice and Participation                                                                                                  | <input checked="" type="checkbox"/> | OUP       | 2016 |
| 2. Tietlebaum, S., ed      | Community Forestry in Canada: Lessons in Policy and Practice                                                                                                 | <input type="checkbox"/>            | UBC       | 2016 |
| 3. Armitage, D, et al, eds | Adaptive Co-Management: Collaboration, Learning and Multi-Level Governance                                                                                   | <input type="checkbox"/>            | UBC       | 2007 |
| 4. Udofia, A., et al.      | Meaningful and efficient? Enduring challenges to Aboriginal participation in environmental assessment. <i>Environmental Impact Assessment and Review</i> 65. | <input type="checkbox"/>            |           | 2016 |
| 5. Gondor, D               | Inuit knowledge and environmental assessment in Nunavut, Canada. <i>Sustainability Science</i> 11 (1).                                                       | <input type="checkbox"/>            |           | 2014 |

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

N/A

**Typical Evaluation Methods and Weighting**

|                |     |                  |     |                   |   |            |      |
|----------------|-----|------------------|-----|-------------------|---|------------|------|
| Final exam:    | 25% | Assignments (3): | 50% | Field experience: | % | Portfolio: | %    |
| Midterm exam:  | %   | Project:         | 25% | Practicum:        | % | Other:     | %    |
| Quizzes/tests: | %   | Lab work:        | %   | Shop work:        | % | Total:     | 100% |

**Details (if necessary):** Example of possible assignments: Annotated summaries of readings 10%; case study reviews 15%; site analysis and mapping 15%; policy review 10%.

**Typical Course Content and Topics**

1. Introduction and core concepts in environmental assessment and management
2. Conflict typologies in environmental and resource management
3. Value systems and professional ethics in environmental management and careers
4. Ecosystem accounting and environmental assessment within market economies
5. Comprehensive land claims and ecosystem management
6. Environmental assessments and changing policy priorities in Canada and the US
7. Environmental assessments: integrating Indigenous values, knowledge, and practices
8. Public participation in environmental assessments
9. Adaptive and co-management frameworks
10. Community-managed resources; field trip
11. Cumulative assessment and regional ecosystem management
12. Protected areas designation and management
13. Climate change, shifting environmental policies, and challenges of adaptive management



**Memo for Program Changes**

To: CACC

From: Michelle Rhodes, Chair, Environmental Studies Curriculum Committee

Date: September 19, 2018

**Subject: Program change (Bachelor of Environmental Studies)**

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:

2. Rationale for change(s):

- Adopting **PORT 398** instead of **ENV 299, 399, and 499**, due to shortage of faculty currently in place to teach portfolio courses. Use of PORT 398 rationalizes a scarce resource.
- All students will now take **ENV 410: Environmental Seminar**. This is to improve cohort learning, with the removal of ENV 299, 399, and 499.
- All students will now take **GEOG 331: Environmental Assessment and Management**. This replaces the requirement to complete GEOG 311 or 312. GEOG 331 was designed more specifically in support of this program. **Note: GEOG 331 is moving through the curriculum approval process at the same time.**
- All students will now complete a **professional competency experience** or demonstrate that they have met requirement through comparable work. The previous program plan allowed for ENV 410 to be a substitute. However, the BGS now has a professional competency requirement, and a process in place that can be adapted to the BES.
- **Removal of Royal Roads University** courses from the upper-level *Society, Culture, and Environment* stream. GEOG 331 meets the need previously to be met by the RRU courses.
- **Addition and Deletion of New and Discontinued courses to thematic lists.**
- **Updated entrance requirements** to keep the BES admissions in line with the BA.
- **Removal of competitive entrance**, as this no longer seemed practical in light of how admissions decisions are made in OReg.
- **Calendar copy updated for clarity**

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

Program outcomes have not changed.

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

Additional course options have been added to thematic area lists. ENV 200 and ENV 410 have been updated (and are moving through concurrently) to better align these courses with program learning outcomes on Indigenous ecological knowledge and ways of knowing.

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

Additional course-specific resources to be covered in large part by the fee differential. Some rationalization of resources around the portfolio also helps off-set program needs, as does the allowance for a non-credit profession competency option.

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

Changes will not have a net change on student enrolment in the short term. The removal of competitive entry may reduce impediments to program entrance as demand for the program grows.

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?

Net number of credits required do not change. Net number of *required* course credits do not change, although GEOG 331 is now part of the environmental core rather than the Society, Culture, and Environment stream.

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.)

Resources demanded by changes are in line with those already required for program implementation. (No net changes.)

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 changes to the number of core courses required from other areas. Additional course options have been added to the electives lists, but the demand on these is likely to be minimal. These were added to provide greater mobility between programs, especially in the first year or two, as students migrate into the BES from other programs.

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.

**Response to CWC comment, November 2018**

| <b>CWC comment</b>                                                                                                                                                                                                                                                         | <b>Response</b>                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Memo does not include program name (please replace “insert program title”).                                                                                                                                                                                                | <i>Corrected</i>                                                                                                                                                                                                                                                                                                                                                                |
| Are changes also being made to the Bachelor of Environmental Studies (Natural Sciences), or just to the BES?                                                                                                                                                               | <p><i>Yes, but these will go through separately at a later date. The BES-NS does not go through College of Arts Council; it goes through Faculty of Science. We felt it was more manageable to only address one program’s changes at a time.</i></p> <p><i>The BES-NS is planned for the Winter 2020 calendar provided proposed changes (to be submitted) are approved.</i></p> |
| Calendar copy introduction: suggest revising “Applicants who are unsure about which credential (BES or BES-NS) should make an appointment...” to “Applicants who are unsure about which credential <b>is right for them</b> (BES or BES-NS) should make an appointment...” | <i>Correction made</i>                                                                                                                                                                                                                                                                                                                                                          |
| <p>Entrance requirements option 1:</p> <p>#2 should be split into two requirements (English 12 or equivalent, and approved Grade 12 courses).</p> <p>Out-of-country applicants: Registrar <b>David Johnston</b> may wish to update this section.</p>                       | <p><i>Change made</i></p> <p><i>Okay. The language should be the same as the BA. (It was when we started this review process in September.)</i></p>                                                                                                                                                                                                                             |
| How to apply: “Spring” should be changed to “Summer”                                                                                                                                                                                                                       | <i>Correction made</i>                                                                                                                                                                                                                                                                                                                                                          |
| Environmental Core: how is “previous environmental work” assessed?                                                                                                                                                                                                         | <i>We were basing this on the same model as for the BGS. We wanted to keep the language simple, but I have added the specific requirement—60 hours of paid or unpaid and applicable experience in environmental work.</i>                                                                                                                                                       |
| Is the intention to discontinue ENV 299, 399, and 499? Although these courses have not yet been offered, UEC has approved them and a discontinuation memo should be provided if this is the case.                                                                          | <i>We are not discontinuing at this time. After a year of using PORT 398, we will reassess and determine whether to restore the ENV 299, 399, 499 series in the program. But we do not have the faculty to teach this specialized portfolio at this time (because of the shortage overall of portfolio instructors).</i>                                                        |
| The <b>PDQA office</b> will be asked to confirm whether this program should be reviewed by APPC again following UEC and prior to Senate approval.                                                                                                                          | <i>We understand. However, the changes—while ‘major’—do not significantly alter entrance into or completion of the program. The main changes to the core are 1) to recognize the portfolio issue</i>                                                                                                                                                                            |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><i>(above); 2) to reinforce cohort learning in light of removing 299/399/499; and 3) to more explicitly require professional competency rather than leaving it an option.</i></p> <p><i>The removal of competitive entrance is a practical consideration. It was in there primarily as a gate-keeper, deemed needed at a time of degree development due to budget shortfalls. All other entrance changes are updates in line with the BA, as were the other original BES entrance requirements.</i></p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## **Bachelor of Environmental Studies**

Environmental Studies (ENV) represents an interdisciplinary and integrated approach to examining human-environment relationships. The Bachelor of Environmental Studies (BES) equips graduates with the tools needed to engage in proactive environmental citizenship. Graduates of this program will be prepared to work as environmental professionals in Canada or abroad. They will have developed the depth of knowledge required to continue on to graduate or other professional studies.

Students who plan on working in environmental science fields, and who may seek additional related professional accreditation after graduation, are encouraged to consider the Bachelor of Environmental Studies (Natural Sciences).

Applicants who are unsure about which credential (BES or BES-NS) is right for them should make an appointment with the Advising Centre, or refer to the Bachelor of Environmental Studies website for more information. is the best for them should refer to the Environmental Studies website or contact the Geography and the Environment (GATE) department at geoginfo@ufv.ca to set up an appointment.

## **Entrance Requirements**

### **Option 1: High School (for students with high school graduation only)**

1. B.C. secondary school graduation or equivalent.
2. A minimum of a C+ in English 12 or equivalent (English 12 First Peoples, English Literature 12, AP English, or IB English A – standard level or higher)
- ~~2-3.~~ and a minimum of a B average in two additional approved Grade 12 courses.
- ~~3.~~ Entrance essay, submitted with application, outlining experience in environmental work or related fields and prior academic work (if applicable), and learning and professional goals. More details on essay requirements are found on the Environmental Studies website.

#### **Out-of-province applicants**

Students will be considered on the basis of courses equivalent to **Approved Grade 12 courses**. See the **Admissions section** of the calendar for more information on equivalents to B.C. secondary school graduation.

#### **Out-of-country applicants**

Students must have B.C. secondary school graduation equivalency, meet the prerequisite for **ENGL 105** or **CMNS 125**, and have completed an equivalent average of B (equated to the UFV grading system) in two academic Grade 12 subjects.

Students who do not meet these requirements might consider **Qualifying Studies**.

#### **Alternatives to high school graduation**

Students who have completed the International Baccalaureate diploma program, the B.C. Graduation diploma (B.C. Adult Dogwood), or the General Educational Development (GED) certificate may be considered to have the equivalent of B.C. secondary school graduation for admission purposes.

### **Option 2: University Entrance (for students who have attended some post-secondary school)**

**Commented [mr1]:** No longer practical, as application decisions are centralized in OREG

1. Prerequisites for ENGL 105 or CMNS ~~455~~125.

~~1-2.~~ One of the following:

- a. Minimum GPA of 2.50 on the last 18 credits of university-level courses attempted, including completion of GEOG111 and GEOG 103, with C or higher.
- ~~a-b.~~ Provisional entrance may be granted to students who do not meet minimum GPA requirements, but who demonstrate relevant prior learning or professional experiences.
- c. Completion of GEOG/ EVST 111 and GEOG 103, with C or higher. Completion of a minimum of 30 credits in courses numbered at the 100 level and above, with a CGPA of 2.00 on all credits attempted.
- d. Completion of a minimum of nine credits at the 100 level and above, transferable to a degree program, with a GPA of 3.00 or better on all credits attempted.
- e. Completion of a post-secondary career or technical diploma (minimum of two years post-secondary credit) from a recognized Canadian or International post-secondary institution, with a minimum CGPA of 2.50 (equated to the UFV grading scheme), calculated on all courses taken.
- f. Completion of a three- or four-year Bachelor's degree from a recognized Canadian or International institution, with a minimum GPA of 2.00 (equated to the UFV grading scheme). Students who have completed a previous degree are governed by UFV's **Subsequent and Concurrent Bachelor Degree policy (98)**.

**Commented [mr2]:** Recommend to committee to drop this language due to additional options for entrance

**Commented [mr3]:** Additional options would bring the BES in line w/ the BA and BES for entrance. Still to be approved by committee

### **Option 3: Combined post-secondary/high school admission**

Students who have attended or are currently attending a post-secondary institution, have fewer than 30 credits applicable for BA entrance at the time they apply for admission, and have a CGPA of at least 2.00 on all post-secondary courses attempted, may be considered for admission based on high school requirements.

Students who do not meet these requirements might consider **Qualifying Studies** and/or a meeting with an Academic Advisor.

### **When to apply**

Applications are accepted for entrance to the Fall, ~~and~~ Winter, and Summer semesters. For application deadlines, see specific intake application process.

### **How to apply**

1. Apply online at [ufv.ca/admissions/admissions/apply](http://ufv.ca/admissions/admissions/apply).

### **Additional documents required for a complete application**

- ~~Official transcripts (or interim transcripts) from all post-secondary institutions you have attended showing grade/course achievement as per entrance requirements. To be considered official, transcripts must be sent directly to UFV from the originating institution; see the Transfer credit section for details.~~
- ~~For high school entrance, a final official transcript (if graduated). For students currently in Grade 12, final grades are due August 3.~~
- ~~Entrance essay, submitted with application, outlining experience in environmental work or related fields and prior academic work (if applicable), and earning and professional goals. More details on essay requirements are found on the Environmental Studies website.~~

~~2. Applicants will be advised of an admission decision and, if accepted, will be provided with registration information. A deposit is required prior to registration (see the Fees and Other Costs section). This money will be applied toward tuition fees. Final payment of all course fees is due by the end of the second week of classes.~~

~~3. In cases where course work is in progress, an admission decision may be made conditional upon completion of academic requirements.~~

~~You will be advised of an admission decision and, if accepted, will be provided with registration information. A deposit is required prior to registration (see the Fees and Other Costs section). This money will be applied toward your tuition fees. Final payment of all course fees is due by the end of the second week of classes.~~

#### **Basis for admission decision ~~(Competitive Admission)~~**

~~Applicants who meet the entrance requirements will be admitted in order of their application date. This date is set when the UFV application, all required documentation, and the application fee have been submitted. Application materials submitted by deadline for application will be reviewed by the Environmental Studies program committee. Successful candidates will have met minimum requirements for entrance, and will have demonstrated commitment to both engagement in environmental learning and to timely program completion.~~

**Commented [mr4]:** Aligns with removal of competitive entry requirement

#### **Fees and other costs**

See the Fees and Other Costs section of the calendar. Additional fees for course field trips and practicum courses will apply to all students enrolled in Environmental Studies courses, and students enrolled in courses within the degree, e.g. Geography.

#### **Program duration and total number of credits**

~~With appropriate planning, the 120 credits required for the Bachelor of Environmental Studies can be completed in four years of full-time study. Because upper-level courses are offered on a limited basis, students should seek the help of Advising to plan their coursework in advance in order to complete their degree in a timely manner.~~

#### **Location**

The majority of the courses in the program will be offered on the Abbotsford campus. Students may choose to complete a practicum in order to meet requirements. Practicums may be Canada-based or international.

#### **Courses at other institutions**

UFV students who wish to take academic work at other institutions for credit toward the degree must obtain permission in advance from an Advisor. A letter of permission request is available at [ufv.ca/admissions](http://ufv.ca/admissions) or can be obtained from the Office of the Registrar. Students must be in good standing (CGPA > 2.0) to receive a letter of permission. When approval has been granted, the Registrar's office will issue a Letter of Permission to the student.

Except as noted below, total transfer and course challenge credits, including prior learning credit, may not exceed 60 credits. A minimum of 30 upper-level credits must be completed at UFV. Within these limits, transfer credit may be applied to the BES with courses passed with a grade of P or higher. Transfer credit is not used in the calculation of the cumulative grade point average.

#### **Residency**

Of the overall total of 120 credits, 60 credits must be completed at UFV. A minimum of 30 upper-level credits must be completed at UFV.

#### **Graduation**

It is the student's responsibility to ensure all program requirements are met. This should be done by regular consultation with an Advisor.

Students must apply for graduation by completing the Graduation Request form available at [ufv.ca/admissions](http://ufv.ca/admissions), or from the Office of the Registrar. We recommend this be done in the first month of the final semester. The final deadline for students who wish to attend the June Convocation ceremony is April 1st of each year, with all program requirements completed by April 30th of each year.

#### **Course repeats**

Students may not register for a course more than twice without permission of the appropriate dean or designate. Where a course has been repeated, the GPA at UFV includes only the higher grade, but all attempts appear on the transcript. Please note that students with more than five course repeats will not be eligible to graduate with a Bachelor of Environmental Studies degree. Transferred courses are considered in the number of attempts. See UFV's Course Repeat policy (86).

A "W" or an "AU" in a course is not counted as a duplication.

#### **Undergraduate continuance**

Academic standing will be governed by UFV's Undergraduate Continuance policy (92). Students enrolled in undergraduate courses (courses numbered 100 or above) must maintain an undergraduate Cumulative Grade Point Average (CGPA) of at least 2.00 to remain enrolled in Good Academic Standing at UFV. Students in Good Academic Standing will have no registration limits placed on them. Failure to

**Commented [mr5]:** Redundant—covered elsewhere in copy

**Commented [mr6]:** Policy section and information condensed and moved to after the requirements of the program.

meet the minimum CGPA requirement will result in restrictions on registration and may eventually lead to academic suspension from undergraduate studies at UFV. Students on Academic Warning or Academic Probation are limited to registering in 10 credits.

The academic standing of all students covered under this policy for courses where letter grades are assigned will be determined at intervals of 9 credits at the start of a student's academic career and then at the end of every term after 27 credits have been completed. Students will be assessed after every term enrolled, but Academic Standing will only change at the intervals noted above. Students' academic standing will be permanently reflected on their student record and will appear on official and unofficial transcripts.

After each semester, students put on Academic Warning, Academic Probation, or Required to Withdraw status or who are continued on Warning or Probation will be notified by the Registrar. For assistance, see an Advisor or contact [advising@ufv.ca](mailto:advising@ufv.ca).

#### Required to withdraw

Students who have been Required to Withdraw from UFV under the Undergraduate Continuance policy (92) are subject to re-admission and continuance requirements as listed in the UFV academic calendar. Students are normally only readmitted once to the same program.

#### Program Requirements

All students are required to complete a minimum of 120 credits, to include a minimum of 45 upper-level (300- or 400-level) credits. A minimum CGPA of 2.0 in the BES program is required for graduation.

BES students are required to take the following ~~73-82~~ credits:

| CORE REQUIREMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Credits                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <ul style="list-style-type: none"> <li><u>GEOG 111: Environmental Issues and Strategies</u></li> <li><u>ENV 200: Bioregional Communities</u></li> <li><u>One of: CMNS 257, GEOG 211, or GEOG 257</u></li> <li><u>PHIL 318: Environmental Ethics</u></li> <li><u>PORT 398: Portfolio I</u></li> <li><u>ENV 410: Environmental Seminar</u></li> </ul>                                                                                                                                                                                               | 3<br>4<br>3<br>3<br>3<br>4 |
| <u>Environmental Core (20-26 credits)</u> <ul style="list-style-type: none"> <li><u>Environmental Professional Competency, met by one of:</u> <ul style="list-style-type: none"> <li><u>GEOG 412,</u></li> <li><u>COOP 120, or</u></li> <li><u>Demonstration of at least 60 hours of approved environmental work (paid or unpaid) completed prior to or concurrent with the degree and commensurate with professional competency learning outcomes, subject to program chair review. See BES website for more details.</u></li> </ul> </li> </ul> | 0-6                        |
| <u>Research, Methods and Engagement Core</u> <ul style="list-style-type: none"> <li><u>GEOG 253: Introduction to GIS</u></li> <li><u>PHIL 100: Reasoning</u></li> </ul>                                                                                                                                                                                                                                                                                                                                                                           | 4<br>3                     |

**Commented [mr7]:** Shown in original calendar as a cross-listed ENV course. Cross-list not yet approved, as it was pending degree approval. It will be submitted at a later point this year.

**Commented [mr8]:** Previous program template required three 1-credit portfolio courses, rather than a single portfolio course. However, the learning in all courses is consistent. Due to anticipated faculty shortages for teaching portfolio classes more generally, the decision was made to replace the ENV portfolio courses with PORT 398, which is already offered.

**Commented [mr9]:** Previous language required either professional competency or seminar. The removal of the ENV portfolio course requirement and replacement with a more general PORT requirement necessitated a new upper-level course specific to ENV be required of all students. This also has the effect of strengthening the overall program by explicitly requiring a professional requirement.

**Commented [mr10]:** Link to be inserted when program is approved

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                        |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <u>(19-22 credits)</u>                                    | <ul style="list-style-type: none"> <li>One of: CMNS 125 or ENGL 105</li> <li>One of: STAT 104, STAT 106, STAT 270, or PSYC 110</li> <li>One course from List 1c (see Note 2): Professional and Research Skills (lower-level)</li> <li>One course from List 2b (see Note 2): Professional and Research Skills II (upper-level)</li> </ul>                                                                                      | <u>3</u><br><u>3-4</u><br><u>3-4</u><br><u>3-4</u>                     |
| <u>Breadth Requirements – Lower Level (21-22 credits)</u> | <ul style="list-style-type: none"> <li><b>Society and Culture:</b> One course from List 1a</li> <li><b>Political Economy:</b> One course from List 1b</li> <li><b>Sciences I:</b> GEOG 103: The Physical Environment</li> <li><b>Sciences I:</b> One of AGRI 124, AGRI 163, or AGRI 204</li> <li><b>Sciences I:</b> One of BIO 106, BIO 210, BIO 219, or GEOG 219</li> <li><b>Sciences I:</b> GEOG 201 or GEOG 202</li> </ul> | <u>3-4</u><br><u>3</u><br><u>4</u><br><u>3</u><br><u>4</u><br><u>4</u> |
| <u>Breadth Requirements – Upper Level (12-16 credits)</u> | <ul style="list-style-type: none"> <li>GEOG 331: Environmental Assessment and Management</li> <li><b>Society, Culture and Economy:</b> Two courses from List 2a (See Note 3)</li> <li><b>Sciences II:</b> One course from List 2c</li> </ul>                                                                                                                                                                                  | <u>4</u><br><u>6-8</u><br><u>3-4</u>                                   |
| <u>Electives</u>                                          | <ul style="list-style-type: none"> <li>34-48 credits</li> <li>Of these remaining credits, students will need to have completed at least 45 upper-level credits in their program</li> </ul>                                                                                                                                                                                                                                    |                                                                        |

**Commented [mr11]:** Replaces requirement that student take GEOG 311 or GEOG 312. GEOG 331 was designed to meet core BES competencies.

**Commented [mr12]:** This replaces requirement for one course completed through Royal Roads University, and one other SCE course.

**Core Requirements**

| <b>Environmental Core</b>                                                                                                                                                                                                                             | <b>Credits</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <del>ENV 111</del> /GEOG 111: Environmental Issues and Strategies                                                                                                                                                                                     | <u>3</u>       |
| ENV 200: Bioregional Communities                                                                                                                                                                                                                      | <u>4</u>       |
| <del>GEOG 211: Environmental Science or CMNS 257/ GEOG 257: Environment: Science and Communications</del> One of: CMNS 257, GEOG 211, or GEOG 257                                                                                                     | <u>3</u>       |
| <del>ENV 300 or ENV 410</del>                                                                                                                                                                                                                         | <u>4</u>       |
| <del>ENV 299: Environmental Portfolio I</del>                                                                                                                                                                                                         | <u>1</u>       |
| <del>ENV 299: Environmental Portfolio II</del>                                                                                                                                                                                                        | <u>1</u>       |
| <del>ENV 499: Environmental Portfolio III</del>                                                                                                                                                                                                       | <u>1</u>       |
| PHIL 318: Environmental Ethics                                                                                                                                                                                                                        | <u>3</u>       |
| <del>PORT 398: Portfolio I</del>                                                                                                                                                                                                                      | <u>3</u>       |
| One of:                                                                                                                                                                                                                                               | <u>4-6</u>     |
| <del>ENV 412/GEOG 412: Environmental Practicum</del>                                                                                                                                                                                                  |                |
| <ul style="list-style-type: none"> <li>ENV 410: Special Topics in Environmental Studies</li> <li>COOP 120: Cooperative Work Term Performance and Report II (with approval from program head; placement must be related to degree interest)</li> </ul> |                |

**Commented [mr13]:** This table is being cut and replaced with the table above. It is here so as to show the changes at the course level.

|                                                                                                                                                                    |                |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------|
| <ul style="list-style-type: none"> <li>sufficient environmental work and volunteer experience, as demonstrated in an application and e-Portfolio review</li> </ul> | Credits        | 20-22 |
| <b>Research, Methods and Engagement Core</b>                                                                                                                       | <b>Credits</b> |       |
| GEOG 253: Introduction to GIS                                                                                                                                      |                | 4     |
| PHIL 100: Reasoning                                                                                                                                                |                | 3     |
| <b>ONE OF:</b>                                                                                                                                                     |                | 3     |
| ENGL 105: Academic Writing                                                                                                                                         |                |       |
| CMNS <del>155</del> 125: Introduction to Workplace and Academic Writing                                                                                            |                |       |
| <b>ONE OF (See Note 1):</b>                                                                                                                                        |                | 3-4   |
| STAT 104: Introductory Statistics                                                                                                                                  |                |       |
| STAT 106: Statistics I                                                                                                                                             |                |       |
| STAT 270: Introduction to Probability and Statistics                                                                                                               |                |       |
| PSYC 110: Applied Statistical Analysis in Psychology                                                                                                               |                |       |
| One course from List 1c (see Note 2): Professional and Research Skills (lower-level)                                                                               |                | 3-4   |
| One course from List 2b (see Note 2): Professional and Research Skills II (upper-level)                                                                            |                | 3-4   |
|                                                                                                                                                                    | Credits        | 19-22 |
| <b>Breadth Requirements – Lower Level</b>                                                                                                                          |                |       |
| <b>Society and Culture</b>                                                                                                                                         |                | 3     |
| One course from List 1a                                                                                                                                            |                |       |
| <b>Political Economy</b>                                                                                                                                           |                | 3     |
| One course from List 1b                                                                                                                                            |                |       |
| <b>Sciences I</b>                                                                                                                                                  |                | 4     |
| GEOG 103: The Physical Environment                                                                                                                                 |                |       |
| <b>ONE OF:</b>                                                                                                                                                     |                | 3     |
| AGRI 124: Introduction to Horticulture                                                                                                                             |                |       |
| AGRI 163: Pest Biology and Identification                                                                                                                          |                |       |
| AGRI 204: Soils and Soil Fertility                                                                                                                                 |                |       |
| <b>ONE OF:</b>                                                                                                                                                     |                | 4-5   |
| BIO 106: Ecology from an Urban Perspective ( <i>not applicable to Natural Sciences designation</i> )                                                               |                |       |
| BIO 210: Introduction to Ecology                                                                                                                                   |                |       |
| BIO 219/GEOG 219: Biogeography                                                                                                                                     |                |       |
| <b>ONE OF:</b>                                                                                                                                                     |                | 4     |
| GEOG 201: <del>Introduction to Climatology</del> Climate and People                                                                                                |                |       |
| GEOG 202: <del>Introduction to Geomorphology</del> Understanding Your Earth: Landforms and Processes                                                               |                |       |
|                                                                                                                                                                    | Credits        | 21-22 |
| <b>Breadth Requirements – Upper Level</b>                                                                                                                          |                |       |
| <b>Society, Culture and Economy</b>                                                                                                                                |                |       |
| <b>ONE OF:</b>                                                                                                                                                     |                | 3-4   |
| ENVP 313: Introduction to Environmental Law ( <i>online through Royal Roads University</i> )                                                                       |                |       |
| ENVP 322: Sustainable Development ( <i>online through Royal Roads University</i> )                                                                                 |                |       |

|                                                                                      |              |
|--------------------------------------------------------------------------------------|--------------|
| ONE OF:<br>GEOG 311: Global Resources and Environment<br>GEOG 312: Political Ecology | <b>4</b>     |
| One course from list 2a (See Note 3)                                                 | <b>3-4</b>   |
| <b>Sciences II</b><br>One course from List 2c                                        | <b>3-4</b>   |
| <b>Credits</b>                                                                       | <b>13-16</b> |

**Note 1:** Students are encouraged to complete their Statistics requirement within the first 30 credits (direct entry) or first year in the program (transfer students).

**Note 2:** Environmental careers are very diverse, with many requiring practical experience in communications and media, GIS, statistics and others demanding graduate level study. Because students will choose to pursue different pathways, they are encouraged to select the Professional and Research Skills course of greatest relevance to their goals.

#### Course listings

For complete details on individual courses used in the program, please see the course descriptions section.

**Note:** Some of the following courses have prerequisites. Please check the course descriptions section of the calendar for details.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>List 1a: Society and Culture</b> <ul style="list-style-type: none"> <li>• ANTH 268: Culture and Environment</li> <li>• <a href="#">ENGL 215: Literary Journalism</a></li> <li>• ENGL 275: Literature and Ecology</li> <li>• <a href="#">GEOG 140: Human Geography</a></li> <li>• <a href="#">IPK 102: Introduction to Indigenous Studies</a></li> <li>• MACS 130: Mass Communication in Canada</li> <li>• MACS 210: History of Communication</li> <li>• MACS 240: Media, Money, and Power</li> <li>• SOC 247: Culture of Capitalism</li> <li>• SOC 260/ ANTH 260: Food for Thought</li> <li>• SOC 289: Sociology of Animals in Western Society</li> </ul>                                                                                                                                   |
| <b>List 1b: Political Economy</b> <ul style="list-style-type: none"> <li>• ECON 100: Principles of Microeconomics</li> <li>• ECON 101: Principles of Macroeconomics</li> <li>• <a href="#">GEOG/ ECON 242: Economic Geography</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>List 1c: Professional and Research Skills</b> <ul style="list-style-type: none"> <li>• AGRI 247: Enterprise Project: Part I</li> <li>• <a href="#">BUS 204: Introduction to Non-Profit Management</a></li> <li>• <a href="#">CIS 145: Web Publishing</a></li> <li>• CMNS 180: Introduction to Intercultural Communication</li> <li>• CMNS 235: Public Speaking</li> <li>• CMNS 251: Professional Report Writing</li> <li>• <a href="#">COMP 120: Computing for the Sciences</a></li> <li>• GEOG 252: Explanations in Geography: Quantitative Methods</li> <li>• PSYCH 202: Research Methods in Psychology</li> <li>• SOC/ANTH/ MACS 255: Introduction to Social Research</li> <li>• VA 180: Digital Photography</li> <li>• VA 271: New Media I: Introduction to Electronic Media</li> </ul> |
| <b>List 2a: Society, Culture and Economy</b> <ul style="list-style-type: none"> <li>• AGRI 371: Sustainable Holistic Agriculture: Planning and Practices</li> <li>• ECON 352: Technological Progress and Economic Growth</li> <li>• ECON 361: Environmental Economics</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

**Commented [mr14]:** Courses added to this section are useful for all students, but particularly for those who will be completing the BES-Natural Sciences.

- ~~ENGL 373: Literary Journalism~~
- GEOG 311: Global Resources and Environment
- GEOG 312: Political Ecology
- GEOG 314: Geography of Food
- ~~GEOG 323: Geography of War, Terrorism, and Peace~~
- GEOG 340: Geographies of Poverty and Development
- GEOG 360: Regional and Community Planning
- GEOG 364: International Planning and Development: Adapting to Climate Change
- ~~GEOG 447: Aboriginal Geography~~
- ~~IPK 386: Indigenous Worldviews of Turtle Island~~
- ~~IPK 401: Indigenous Worldviews and Spirituality~~
- ~~PHIL 412: Corporations, Globalization, and Ethics~~
- PSYCH 364: Environmental Psychology
- RLST 380: Religion, Nature and Science
- ~~SOC/ GEOG 313: Agriculture and Rural Life~~
- SOC 346: Environmental Justice
- SOC 348: Social Movements
- ~~SOC/ POLS 352: Public Policy Analysis~~
- SOC/ ANTH 360: Eating and Thinking: Food, Identity, and Power in Global Societies
- SOC/ ANTH 368: Environment and Society

**Commented [mr15]:** Course no longer regularly offered. Likely to be replaced.

**Commented [mr16]:** SOC/ GEOG 313 and SOC/ POLS 352 have been moved to section 2b.

- ~~Or one more of the following courses, available on line from Royal Roads University~~
- ~~RRU ENVP 427: Public Policy Formation (3cr)~~
  - ~~RRU ENVP 426: Leadership and Management for Environmental Practitioners (3cr)~~
  - ~~RRU ENSC 415: Environmental Management Tools~~

**Commented [mr17]:** Deleted, as an arrangement with RRU was not finalized. If one can be struck, these courses may be added in the future.

## List 2b: Professional and Research Skills II

- CMNS 312: Public Relations Campaigns
- CMNS 325: Writing for the Sciences and Technologies
- CMNS 335: Advanced Public Speaking
- CMNS 360: Advocacy Writing
- CMNS 375: Understanding Design for Print Publications
- CMNS 380: The Cross-Generational Workplace
- CMNS 465: Grant and Proposal Writing
- CMNS 480/MACS 480: Crisis Communications
- ~~ENGL/ JRNL 373: Literary Journalism~~
- GEOG 353: GIS Applications
- GEOG 453: Remote Sensing of the Environment
- ~~GEOG 454: Geospatial Data Analysis and Modeling~~
- ~~IPK 344/ ANTH 344/ SOC 344: Indigenous Research Methodologies~~
- JRNL/ CMNS 300: Introduction to the Practice of Journalism
- JRNL/ CMNS 301: Advanced Practice of Journalism
- PHIL 305: Philosophy of Decision Making and Dispute Resolution
- PHIL 310: Ethics and Public Policy
- SOC/ ANTH/ MACS 355: Quantitative Research Methods
- ~~SOC/ ANTH/ MACS 356: Qualitative Research Methods~~
- ~~SOC/ GEOG 313: Agriculture and Rural Life~~
- ~~SOC/ POLS 352: Public Policy Analysis~~
- ~~SOC 353: Program Evaluation~~
- SOC 357: Advanced Research Methods
- ~~SOC 358: Advanced Research on a Selected Topic~~
- ~~SOC 475: Communities, Differences, and Belonging~~
- STAT 315: Applied Regression Analysis
- STAT 330: Design of Experiments
- STAT 350: Survey Sampling
- VA 365/FILM 365/JRNL 365: Documentary Video Storytelling
- VA 371: New Media III: Interactive Art

- VA 372: New Media IV: Project in New Media
- VA 390: Community Arts Practice

**List 2c: Sciences II**

- AGRI 311: Sustainable Soil Management
- AGRI 321: Vegetable Crop Production: Science and Practice
- AGRI 323: Fruit Crop Production: Science and Practice
- AGRI 324: Greenhouse Production: Science and Practice
- AGRI 327: Nursery Production and Propagation: Science and Practice
- AGRI 328: Forage Crop Production: Science and Practice
- AGRI 331: Dairy Production and Management: Science and Practice
- BIO 310: Conservation Biology
- BIO 330: Plants and Animals of BC
- BIO 335/ GEOG 335: Methods in Freshwater Ecology
- BIO 370: Introduction to Mycology
- BIO 408E: Directed Studies in Biology I
- BIO 409E: Directed Studies in Biology II
- BIO 410/ GEOG 410: Plant Ecology
- BIO 421E: Special Topics in Applied Biology—Clayoquot Field School
- BIO 426: Environmental Microbiology
- BIO 430: Forest Ecology
- BIO 497: Tropical Biology Seminar
- GEOG 302: Fluvial Geomorphology
- GEOG 303: Principles of Hydrology
- GEOG 304: Geography of the Coastal Zone
- GEOG 307: Urban Climatology
- GEOG 308: Climate Change and Variability
- GEOG 315: Soil Process and Function
- GEOG 318: Water Resources Management
- GEOG 319/ BIO 319: Swamps and Bogs
- GEOG 402: Quaternary Geology and Geomorphology
- GEOG/ BIO 419: Paleocology
- IPK/ BIO 477: Traditional Ecological Knowledges

**Courses at other institutions**

UFV students who wish to take academic work at other institutions for credit toward the degree must obtain permission in advance from an Advisor. A letter of permission request is available at [ufv.ca/admissions](http://ufv.ca/admissions) or can be obtained from the Office of the Registrar. Students must be in good standing (CGPA > 2.0) to receive a letter of permission. When approval has been granted, the Registrar's office will issue a Letter of Permission to the student.

**Policies relevant to the BES**

**Course Repeat policy (86):** Students may not register for a course more than twice without the permission of the department head/director for the discipline or their designate. All attempts will be recorded on the transcript, but only the highest grade will be included in the GPA. Transfer courses are considered in the number of attempts. A "W" or "AU" course is not counted as a duplication. Multiple repeats of the same course count as a single duplication.

**Undergraduate Continuance policy (92):** Students must have a CGPA of at least 2.00 to remain in good academic standing. Failure to meet or maintain a 2.00 will result in restrictions on registration and may lead to academic suspension.

**Subsequent and Concurrent Bachelor Degree policy (98):** Students who have already completed a degree at the bachelor's level may be granted an additional bachelor's degree provided that the two degrees are different, and that the student has met the program requirements. Students will complete at least one third of the total credits required for the additional degree, including at least 30 additional upper-level credits, beyond the credits taken in the first or concurrent degree. All 30 upper-level credits must be obtained through completion of UFV courses.

**Transfer Credit policy (107) and Prior Learning Assessment and Recognition (PLAR) policy (94):** Students who successfully complete academic course work at another post-secondary institution may be able to transfer this credit to UFV to satisfy BES degree requirements. They may also be able to earn academic credit through an assessment of prior learning.

### **Residency**

Of the overall total of 120 credits, 60 credits must be completed at UFV. A minimum of 30 upper-level credits must be completed at UFV.

### **Graduation**

It is the student's responsibility to ensure all program requirements are met. This should be done by regular consultation with an Advisor.

Students must apply for graduation by completing the Graduation Request form available at [ufv.ca/admissions](http://ufv.ca/admissions), or from the Office of the Registrar. We recommend this be done in the first month of the final semester. The final deadline for students who wish to attend the June Convocation ceremony is April 1st of each year, with all program requirements completed by April 30th of each year.

### **Course listings**

For complete details on individual courses used in the program, please see the [course descriptions section](#).

**Memo for Course Changes**

To: UEC

From: Cory Beshara, Chemistry Department Head

Date: 2018 May 28

**Subject: Proposal for Discontinuation of CHEM 105 (Introductory Chemistry for the of Health and Environmental Sciences)**

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

- ☐ Six-year review
- ☐ Number and/or course code
- ☐ Credits and/or total hours
- ☐ Title
- ☐ Calendar description
- ☐ Prerequisites and/or co-requisites
- ☐ Frequency of course offering
- ☐ Learning outcomes
- ☐ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☒ **Discontinuation of course**
- ☐ Other – Please specify:

2. Rationale for change:

- **This course has not been offered. The instructor who designed the course retired before offering it.**

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

- n/a

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

- Yes. It is listed as an optional prerequisite for BIO 219/GEOG 219

5. Which program areas have been consulted about the change(s)?

- GATE

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

- n/a

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

- n/a

8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:
  - a. Credit value
  - b. Class size limit
  - c. Frequency of offering
  - d. Resources required (labs, equipment)
9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?  
n/a
10. Estimate of the typical costs for this course, including textbooks and other materials:
  - n/a

**CWC comment and response:**

- Would the department consider retaining/revising this course for use in the recently-approved Bachelor of Environmental Studies degree?  
*Students could use CHEM 110 or CHEM 113/114 for any chemistry courses needed. This course only exists on paper, and the professor who administered it is now deceased. We have no idea where any documentation for the course is, or even if it still exists. It would be difficult.*

**Memo for New Course**

To: CACC, Alisa Webb, Chair

From: Karin Jager, Department Head, Graphic and Digital Design

Date: May 22, 2018

**Subject: Proposal for new course GD 461: Advanced Portfolio for Graphic and Digital Design**

1. Rationale for new course: This course facilitates the development of a professional portfolio and a final industry and academic assessment to ensure students meet the proposed GDD Major program learning outcomes, program competencies, and institutional outcomes. The professional portfolio will include projects created over the entire proposed GDD Major brought to a professional standard.
2. How this new course fits into program(s): This is part of the proposed GDD Major capstone requirement and will give students the opportunity to demonstrate creative practice and boundary crossing competencies (achieved in a cross-disciplinary project) thereby demonstrating T-shaped abilities.

***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):

|                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Utilize processes, tools and technology for graphic design practice</li> <li>Demonstrate functional competence with principles of visual organization, visual language, typography and theory as applied to visual communication problems</li> <li>Produce communication/graphic design, information design, brand identity, interactive design, illustration, and motion graphics projects</li> </ul> | <ul style="list-style-type: none"> <li>Present evidence of professional skills and mastery of the design process</li> </ul>                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>Analyze visual communication problems using critical thinking skills</li> <li>Develop strategies for planning, producing, and disseminating visual communications</li> <li>Incorporate research and findings into designing experiences</li> </ul>                                                                                                                                                     | <ul style="list-style-type: none"> <li>Define the design problem or challenge, research method(s), and results for a major design project</li> <li>Demonstrate an interdisciplinary strategic process and integrated skills for problem solving</li> <li>Critically reflect on project outcomes</li> </ul> |
| <ul style="list-style-type: none"> <li>Make responsible design decisions that consider peoples' wants, needs, behaviours, values, social, and cultural differences</li> <li>Assess different technologies for specific design problem contexts using a human-centered approach</li> </ul>                                                                                                                                                     | <ul style="list-style-type: none"> <li>Demonstrate an interdisciplinary strategic process and integrated skills for problem solving</li> <li>Develop case studies that demonstrate the value of design</li> </ul>                                                                                          |

|                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Integrate design knowledge and technologies in cross-disciplinary study</li> </ul>                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>Create branded experiences and design systems that span all media</li> <li>Collaborate in interdisciplinary strategic processes for problem solving</li> <li>Develop responsive design solutions that address the impact on cultures, societies, environments, and economies</li> </ul> | <ul style="list-style-type: none"> <li>Compile a body of work that demonstrate skills, knowledge, and preparation for future professional and academic engagement</li> <li>Define the design problem or challenge, research method(s), and results for a major design project</li> <li>Demonstrate an interdisciplinary strategic process and integrated skills for problem solving</li> </ul> |
| <ul style="list-style-type: none"> <li>Apply leadership, empathetic, interpersonal, and organizational skills</li> </ul>                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Demonstrate an interdisciplinary strategic process and integrated skills for problem solving</li> </ul>                                                                                                                                                                                                                                                 |

- Will this course be required by any program beyond the discipline? If so, how will this course affect that program or programs? Not at this time.
- Which program areas have been consulted about the course? BFAPC
- If a new discipline designation is required, explain why: n/a
- What consideration has been given to indigenizing the curriculum? The course considers indigenous audiences, indigenous ways of knowing, and enables the opportunity for producing real world visual communication (digital and print) with an indigenous focus.
- If this course is not eligible for PLAR, explain why: PLAR cannot be awarded for this course because this is a capstone course for the program.
- Explain how each of the following will affect the budget for your area or any other area:

*The Dean of Arts has developed a five-year budget plan that shows the feasibility of creating the new major. This budget plan accounts for additional sections, faculty, technical and staff support. Graphic Design courses in the diploma and minor/extended minor have a differential tuition fee, which provides funds to support capital investment and sustainability of the program. The major will run a similar model.*

- Credit value – 3
- Class size limit – 24
- Frequency of offering – *annually*
- Resources required (labs, equipment) – Networked lab with AV. Students must have access to an iMac or MacBook Pro, Adobe CC subscription, and a Lynda.com

subscription. GD courses include a per credit surcharge. The department uses the surcharge to sustain the lab, equipment, and required technology access.

10. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded? Field research is required. There is no anticipated cost.
11. Estimate of the typical costs for this course, including textbooks and other materials: \$50

**CWC comments and responses:**

- Please confirm where this course will be included in the proposed Graphic and Digital Design major.  
*Yes – replacing GD361 Portfolio Development for Graphic and Digital Design in the proposed Major.*
- Course title: inclusion of “Graphic and Digital Design” is redundant. Suggest changing to just “Advanced Portfolio”.  
*This course is specific to a portfolio for graphic and digital design. This is an important distinction and therefore should not be removed.*
- Learning outcome #1: “Compile” is relatively unusual. Would a verb such as “demonstrate” or “display” be more appropriate?  
*Compile describes the desired action for this learning outcome ... collecting of a body of work that meets specific criteria.*



ORIGINAL COURSE IMPLEMENTATION DATE: September 2019  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED (six years after UEC approval): December 2024  
 Course outline form version: 10/27/2017

## 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> GD 461                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                         |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Course Full Title:</b> Advanced Portfolio for Graphic and Digital Design<br><b>Course Short Title:</b> Advanced Portfolio for GDD<br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Faculty:</b> Faculty of Humanities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Department (or program if no department):</b> Graphic and Digital Design                                                                                                                                                                                                                                                                                                                                                                    |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Calendar Description:</b><br>Development of an advanced portfolio for future professional and academic engagement. Students will demonstrate deep disciplinary competency in creative practice, integrative skills, research abilities, and collaborative processes through a compilation of design projects, industry assessments, and external presentations.                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | 90 credits including 15 upper-level GD credits.                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br>Former course code/number:<br>Cross-listed with:<br>Dual-listed with:<br>Equivalent course(s):<br><i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>                                                                                                |           | <b>Special Topics</b><br>This course is offered with different topics:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(Double-click on box to select it as checked.)</i><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>(The specific topic will be recorded when offered.)</i> |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Typical Structure of Instructional Hours</b> <table border="1"> <tr> <td>Lecture/seminar hours</td> <td>15</td> </tr> <tr> <td>Tutorials/workshops</td> <td>10</td> </tr> <tr> <td>Supervised laboratory hours</td> <td>30</td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Supervised online activities</td> <td>5</td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total hours</b></td> <td><b>60</b></td> </tr> </table> |           | Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                          | 15 | Tutorials/workshops | 10 | Supervised laboratory hours | 30 | Experiential (field experience, practicum, internship, etc.) |  | Supervised online activities | 5 | Other contact hours: |  | <b>Total hours</b> | <b>60</b> | <b>Transfer Credit</b><br>Transfer credit already exists: (See <a href="#">bctransferguide.ca</a> )<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes<br>Submit outline for (re)articulation:<br><input type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i> |  |
| Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 15        |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| Tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10        |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| Supervised laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5         |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>60</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| Labs to be scheduled independent of lecture hours: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes                                                                                                                                                                                                                                                                                                                                                                                                |           | <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                                                                                                                                                                           |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Expected Frequency of Course Offerings:</b><br>Annually<br><i>(Every semester, Fall only, annually, every other Fall, etc.)</i>                                                                                                                                                                                                                                                                                                             |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Department / Program Head or Director:</b> Karin Jager                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           | <b>Date approved:</b> September 2018                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Date approved:</b> September 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                       |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Dean/Associate VP:</b> Jacqueline Nolte                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Date approved:</b> September 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                       |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Date of posting:</b> November 16, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |    |                             |    |                                                              |  |                              |   |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                               |  |

**GD 461**
**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:

- Compile a body of work that demonstrate skills, knowledge, and preparation for future professional and academic engagement
- Define the design problem or challenge, research method(s), and results for a major design project
- Present evidence of professional skills and mastery of the design process
- Demonstrate an interdisciplinary strategic process and integrated skills for problem solving
- Develop case studies that demonstrate the value of design
- Critically reflect on project outcomes
- Identify relationships between career expectations and past learning and experiences

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

☐ Yes      ☒ No, PLAR cannot be awarded for this course because this is a capstone course for the program.

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

Learning activities include lectures, reflective exercises, participation in a related professional event, writing and oral presentation workshops, projects and peer review, critiques and group research activities. This may vary at the department's discretion.

**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. Janda, Michael  | Burn Your Portfolio: Stuff they don't teach you in design school, but should       | <input checked="" type="checkbox"/> | Peachpit Press | 2013 |
| 2. Collins, Hilary | Creative Research: The theory and practice of research for the creative industries | <input checked="" type="checkbox"/> | AVA Publishing | 2018 |

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

Adobe Creative Suite, Apple computer, digital and print media.

**Typical Evaluation Methods and Weighting**

|             |   |              |     |            |     |        |      |
|-------------|---|--------------|-----|------------|-----|--------|------|
| Final exam: | % | Assignments: | 40% | Portfolio: | 60% | Total: | 100% |
|-------------|---|--------------|-----|------------|-----|--------|------|

**Details (if necessary):**

- Professional portfolio that includes projects created over the entire GDD Major brought to a professional standard
- Case study demonstrating boundary crossing competencies achieved in a cross-disciplinary project
- Final portfolio presentation to an industry and academic panel
- Participation in a related professional event

**Typical Course Content and Topics**

Weeks 1 to 3

- The portfolio process – choosing your direction
- Types of portfolios – format, content and structure
- Expectations for evolving design disciplines, the role of research, integrative skills, and cross-disciplinary collaboration
- Pursuing further study, academic opportunities and preparing for graduate studies
- Planning your portfolio – project checklist
- Defining self-directed projects and building on a research project

Weeks 3 to 6

- Creating design solutions using an iterative process
- Demonstrating ethics and professional standards of practice
- Presenting an independent research project as part of a portfolio
- Showing mastery of the design process and creative practice competency

Weeks 7 to 9

- Articulating and writing case studies (defining the problem, research methods, design process, and results)
- Designing portfolio templates – information hierarchy and content

Weeks 10 to 13

- Project rationales and critically reflecting on project outcomes – digital and print
- Presentation techniques for one-on-one and one-on-group
- Presenting for employment versus contractual and/or freelance work
- Preparing for and participating in a professional event
- Demonstrating your learning and experience
- Preparing for capstone assessment

**Memo for Course Changes**

To: UEC

From: Norm Taylor, Physics Department Head

Date: September 7, 2018

**Subject: Proposal for revision of PHYS 100 (Introductory Physics I)**

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

- ☐ Six-year review
- ☐ Number and/or course code
- ☐ Credits and/or total hours
- ☐ Title
- ☒ Calendar description
- ☒ Prerequisites and/or co-requisites
- ☐ Frequency of course offering
- ☐ Learning outcomes
- ☐ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☐ Other – Please specify:

2. Rationale for changes:

- As a result of the recent fine-tuning of the BA requirements, and examination by the College of Arts Curriculum Committee, this course no longer meets the science literacy (specifically in regards to ethics) requirement of the BA degree. Therefore, this part of the Note should be removed.
- UUP has altered their Math offerings and course numbers. This change reflects those updates.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

- No change

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

- No change

5. Which program areas have been consulted about the change(s)?

- College of Arts Curriculum Committee (Samantha Pattridge)
- UUP (Greg St. Hilaire)

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

- No change

7. If this course is not eligible for PLAR, explain why:
  - No change
8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:
  - a. Credit value
    - o No change
  - b. Class size limit
    - o No change
  - c. Frequency of offering
    - o No change
  - d. Resources required (labs, equipment)
    - o No change
9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?
  - No change
10. Estimate of the typical costs for this course, including textbooks and other materials:
  - No change

**CWC comments and responses:**

- Suggest removing or revising “superior” in the calendar description note (“PHYS 100 is intended as a superior substitute for Physics 11 with regards to meeting prerequisites and satisfying program requirements”). Does this course satisfy prerequisites or program requirements that Physics 11 does not?  
*Yes. We felt it was superior in that the more advanced math prerequisites than are usual for Physics 11 (see next bullet) allow for a more in-depth examination of the course topics. It also provides university-level credits for use in a degree, and has 1XX transfer status to Douglas, KPU, TRU and SFU. In addition, it has 10 three hour labs attached. Very few secondary school physics courses provide any lab experience these days.*
- Prerequisites: “Any BC Mathematics 12” may require clarification.  
*After discussing it with Greg from UUP, we agree and have made it more specific, essentially using an expanded set of the prerequisites for MATH 096. These Math requirements are higher than those needed for Physics 11 or PHYS 083, while still providing more pathways for students into physics than PHYS 101 or 111. To that end, please note the changes in the updated OCO.*
- There appears to be a more recent edition of the Cutnell and Johnson textbook (10th edition, 2014).  
*This will be included in the next 6-year course review update.*



ORIGINAL COURSE IMPLEMENTATION DATE: September 1997  
 REVISED COURSE IMPLEMENTATION DATE: September 2019  
 COURSE TO BE REVIEWED (six years after UEC approval): January 2021  
 Course outline form version: 05/18/2018

## 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> PHYS 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                   |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Course Full Title:</b> Introductory Physics I<br><b>Course Short Title:</b><br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Department (or program if no department):</b> Physics                                                                                                                                                                                                                                 |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Calendar Description:</b><br>Covers kinematics and dynamics (Newton's laws), conservation of energy and momentum, wave motion, geometric optics, introductory special relativity, and nuclear reactions.<br><br>Note: PHYS 100 has been designed for students who have not taken Physics 11 but who have a strong background in mathematics. PHYS 100 is intended as a superior substitute for Physics 11 with regards to meeting prerequisites and satisfying program requirements.<br><br>Note: Students with credit for PHYS 083 cannot take this course for further credit.                                                                                                                 |           |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | One of the following: (C+ or better in MATH 085), (B or better in one of Principles of Math 11 or Pre-calculus 11), Principles of Math 12 or Pre-calculus 12, MATH 092, MATH 094, MATH 096, MATH 140, COMP 138, or Upgrading and University Preparation Assessment.                      |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | One of MATH 093, MATH 095, or MATH 096 is recommended, if not taken previously.                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Prelcorequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | NONE                                                                                                                                                                                                                                                                                     |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br>Former course code/number:<br>Cross-listed with:<br>Dual-listed with:<br>Equivalent course(s): <b>PHYS 083</b><br><i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>                                                                                                                                                                                                                                                             |           | <b>Special Topics</b> <i>(Double-click on boxes to select.)</i><br>This course is offered with different topics:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, topic will be recorded when offered.)</i>                                            |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Independent Study</b><br>If offered as an Independent Study course, this course may be repeated for further credit: <i>(If yes, topic will be recorded.)</i><br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Typical Structure of Instructional Hours</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td>Lecture/seminar hours</td> <td style="text-align: center;">60</td> </tr> <tr> <td>Tutorials/workshops</td> <td></td> </tr> <tr> <td>Supervised laboratory hours</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td style="text-align: right;"><b>Total hours</b></td> <td style="text-align: center;"><b>90</b></td> </tr> </table> |           | Lecture/seminar hours                                                                                                                                                                                                                                                                    | 60 | Tutorials/workshops |  | Supervised laboratory hours | 30 | Experiential (field experience, practicum, internship, etc.) |  | Supervised online activities |  | Other contact hours: |  | <b>Total hours</b> | <b>90</b> | <b>Transfer Credit</b><br>Transfer credit already exists: <i>(See <a href="#">bctransferguide.ca</a>.)</i><br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes<br>Submit outline for (re)articulation:<br><input type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i> |  |
| Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 60        |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| Tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| Supervised laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30        |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>90</b> |                                                                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                     |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Maximum enrolment (for information only):</b> 36<br><b>Expected Frequency of Course Offerings:</b><br>Annually <i>(Every semester, Fall only, annually, etc.)</i>                                                                                                                     |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Department / Program Head or Director:</b> Norm Taylor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           | <b>Date approved:</b> October 2018                                                                                                                                                                                                                                                       |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> November 2, 2018                                                                                                                                                                                                                                                   |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Dean/Associate VP:</b> John English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           | <b>Date approved:</b> November 2, 2018                                                                                                                                                                                                                                                   |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date of posting:</b> November 30, 2018                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                      |  |

**Learning Outcomes:**

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

1. Explain what is meant by uniform motion, uniform accelerated motion, and free fall motion.
2. Apply one of the five constant acceleration motion equations to solve for one of the five parameters; displacement, initial and final velocity, time, or acceleration.
3. Analyze a distance versus time graph in order to determine instantaneous and average speed, or find the equation relating the distance and time.
4. Analyze a velocity versus time graph in order to determine instantaneous and average acceleration and displacement, or find the equation relating the velocity and time.
5. Apply the equations for accelerated motion to solve free fall problems.
6. Add vectors using a vector diagram, and apply it to determine the net force acting on an object.
7. Solve relative motion problems using vector diagrams.
8. Solve circular motion problems using the equation relating the centripetal acceleration, radius of a circle, and the object's velocity or period.
9. Explain the differences between mass and weight, and measure them both using the appropriate instruments (mass balance or spring balance).
10. Characterize the gravitational field; field strength and variations due to latitude and height above sea level.
11. Construct and interpret a free body diagram from the forces acting on the body.
12. Apply the appropriate equation to calculate the unknown variable using the equations for gravitational force between two objects, spring force, friction force, kinetic energy, potential energy, work, power, and momentum.
13. State and apply Universal Gravitation Law, Friction Law, Hooke's Law, Newton's three Laws, Conservation of Momentum Law, Conservation of Energy Law, and Refraction and Reflection Laws in solving problems and in explaining events from everyday life (motion, interaction of objects, free fall, rotation of the planets, etc.).
14. Identify and explain situations in which mechanical energy is conserved.
15. Describe the operating principle of simple machines.
16. Determine the resultant of two and more waves using the Principle of Superposition.
17. Use ray diagrams, wave-front sketches, and standing waves diagrams to explain the phenomena of reflection, refraction, diffraction, and interference, and how images are formed in lenses and mirrors.
18. Explain the operating principle of a simple telescope, simple camera, magnifying glass, and microscope, and explain eye defects using reflection and refraction.
19. Apply the appropriate equation to calculate the unknown variable in the magnification equation as it applies to mirrors and lenses.
20. State the two postulates of the special theory of relativity, explain the equivalence of energy and mass, and describe the relativistic effects of time dilation, length contraction, and mass increase.
21. Compare and contrast fusion and fission reactions, and describe the operating principles of a nuclear reactor, an atomic bomb, and the Sun.

**Laboratory objectives:**

After completing the experiments in PHYS 100, successful students should be able to:

1. Gather a complete and accurate record of the data, and then tabulate it for each experiment.
2. Estimate the level of accuracy of different types of measuring apparatus; rulers, meter sticks, spring and mass balances, ticker tape, and photogate timers for each experiment.
3. Estimate the magnitude of the errors in their measurements using the error analysis method for each experiment.
4. Summarize and discuss the final results, analyze the difficulties of the experiment, and offer suggestions for improvement for each experiment.
5. Measure and record data to construct correct Distance versus Time, Velocity versus Time, and Force versus Acceleration graphs for uniform and accelerated motions using a recording timer, ticker tape, and graph paper.
6. Analyze a distance versus time graph in order to determine instantaneous and average speed, or the equation relating the distance and time for the motion of an object on an inclined plane or a free falling object.
7. Analyze a velocity versus time graph in order to determine instantaneous and average acceleration for the motion of an object on an inclined plane or a free falling object.
8. Use one of two different methods (motion on an inclined plane or free fall motion) to determine the acceleration due to the gravity.
9. Verify the Friction law using Friction Force versus Normal Force graph for wood-wood contact surfaces or, alternatively, Hooke's Law using a Force versus Extension graph for a spring of negligible mass.
10. Verify Newton's second Law for a constant mass system using a Force versus Acceleration graph.
11. Test the Conservation of Energy Law for the motion of an object on an inclined plane or a free falling object using an Energy versus Position graph.
12. Test the Conservation of Momentum Law in one dimension for both elastic and inelastic collisions between two laboratory carts, using a time recording device (ticker tape timer or photogate timer).
13. Verify the Law of Reflection and Law of Refraction (Snell's Law) using ray boxes, mirrors, semi-circular lenses, and polar graph paper, and apply those laws in determining the physical variables characterizing mirrors and lenses.

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

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

**PHYS 100**

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

**Page 3 of 3**

**Typical Instructional Methods** (*Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.*)  
Lecture, demonstration, small group practice, discussion, laboratory.

**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. Touger, J.              | Physics: Building Understanding                                                                                             | <input type="checkbox"/> | John Wiley & Sons | 2006 |
| 2. Cutnell & Johnson       | Physics                                                                                                                     | <input type="checkbox"/> | John Wiley & Sons | 2011 |
| 3. Elert, G.               | The Physics Hypertextbook (free at <a href="http://physics.info/">http://physics.info/</a> )                                | <input type="checkbox"/> | online            | 2014 |
| 4. Nave, C.                | <a href="http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html">http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html</a> | <input type="checkbox"/> | Georgia State     | 2014 |
| 5.                         |                                                                                                                             | <input type="checkbox"/> |                   |      |

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

Calculator, lab manual, lab notebook

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |   |            |      |
|----------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:    | 45% | Assignments: | 15% | Field experience: | % | Portfolio: | %    |
| Midterm exam:  | 25% | Project:     | %   | Practicum:        | % | Other:     | %    |
| Quizzes/tests: | %   | Lab work:    | 15% | Shop work:        | % | Total:     | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

|         |                                                      |
|---------|------------------------------------------------------|
| Week 1  | Introduction, Kinematics in one dimension            |
| Week 2  | Kinematics in one dimension                          |
| Week 3  | Kinematics in one and two dimensions, Projectiles    |
| Week 4  | Forces in one dimension (gravity, friction, springs) |
| Week 5  | Newton's Laws                                        |
| Week 6  | Work, Energy, Power, Efficiency                      |
| Week 7  | Momentum, Impulse                                    |
| Week 8  | Midterm                                              |
| Week 9  | Waves (qualitative, quantitative)                    |
| Week 10 | Reflection, Interference, Diffraction, Refraction    |
| Week 11 | Geometric Optics: Mirrors                            |
| Week 12 | Geometric Optics: Lenses                             |
| Week 13 | Modern Physics (relativity and nuclear energy)       |
| Week 14 | Review/Catch-up                                      |

**Laboratory Experiments**

|        |                                                                                        |
|--------|----------------------------------------------------------------------------------------|
| Lab 1  | Introduction, Measurement & Graphing Exercises, Error Analysis and Math Review (2 wks) |
| Lab 2  | Uniformly Accelerated Motion                                                           |
| Lab 3  | Forces: Friction                                                                       |
| Lab 4  | Forces: Springs                                                                        |
| Lab 5  | Newton's 2nd Law of Motion                                                             |
| Lab 6  | Conservation of Momentum                                                               |
| Lab 7  | Conservation of Energy                                                                 |
| Lab 8  | Mirrors and Images                                                                     |
| Lab 9  | Refraction                                                                             |
| Lab 10 | Makeup lab                                                                             |

**Memo for Course Changes**

To: UEC

From: Norm Taylor, Physics Department Head

Date: September 7, 2018

**Subject: Proposal for revision of PHYS 105 (Heat, Waves and Optics)**

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

- ☐ Six-year review
- ☐ Number and/or course code
- ☐ Credits and/or total hours
- ☐ Title
- ☐ Calendar description
- ☒ Prerequisites and/or co-requisites
- ☐ Frequency of course offering
- ☐ Learning outcomes
- ☐ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☐ Other – Please specify:

2. Rationale for change:

- UUP has altered their Math offerings and course numbers. This change reflects those updates.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

- No change

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

- No change

5. Which program areas have been consulted about the change(s)?

- UUP (Greg St. Hilaire)

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

- No change

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

- No change

8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:

- a. Credit value
  - ☐ No change
- b. Class size limit
  - ☐ No change
- c. Frequency of offering
  - ☐ No change
- d. Resources required (labs, equipment)
  - ☐ No change
- 9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?
  - No change
- 10. Estimate of the typical costs for this course, including textbooks and other materials:
  - No change



**ORIGINAL COURSE IMPLEMENTATION DATE:** September 1993  
**REVISED COURSE IMPLEMENTATION DATE:** September 2019  
**COURSE TO BE REVIEWED** (six years after UEC approval): February 2024  
**Course outline form version:** 05/18/2018

## 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> PHYS 105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Number of Credits:</b> 5 <a href="#">Course credit policy (105)</a>                                                                                                                                                                        |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Course Full Title:</b> Heat, Waves and Optics<br><b>Course Short Title:</b><br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | <b>Department (or program if no department):</b> Physics                                                                                                                                                                                      |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Calendar Description:</b><br>An introductory non-calculus physics course covering electric circuits, waves, geometric and wave optics, and thermodynamics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | (One of [Principles of Mathematics 12, Pre-Calculus 12, MATH 093, MATH 095, MATH 096, or MATH 110] and one of [Physics 11, PHYS 083, or PHYS 100]) or (one of Physics 12, PHYS 093, PHYS 101, or PHYS 111).                                   |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | NONE                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | NONE                                                                                                                                                                                                                                          |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br>Former course code/number: PHYS 102<br>Cross-listed with:<br>Dual-listed with:<br>Equivalent course(s):<br><i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>                                                                                                                                                                                                                                                    |            | <b>Special Topics</b> <i>(Double-click on boxes to select.)</i><br>This course is offered with different topics:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, topic will be recorded when offered.)</i> |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Typical Structure of Instructional Hours</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Lecture/seminar hours</td> <td style="text-align: center;">75</td> </tr> <tr> <td>Tutorials/workshops</td> <td></td> </tr> <tr> <td>Supervised laboratory hours</td> <td style="text-align: center;">45</td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td style="text-align: right;"><b>Total hours</b></td> <td style="text-align: center;"><b>120</b></td> </tr> </table> |            | Lecture/seminar hours                                                                                                                                                                                                                         | 75 | Tutorials/workshops |  | Supervised laboratory hours | 45 | Experiential (field experience, practicum, internship, etc.) |  | Supervised online activities |  | Other contact hours: |  | <b>Total hours</b> | <b>120</b> | <b>Independent Study</b><br>If offered as an Independent Study course, this course may be repeated for further credit: <i>(If yes, topic will be recorded.)</i><br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | Lecture/seminar hours                                                                                                                                                                                                                         | 75 |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | Tutorials/workshops                                                                                                                                                                                                                           |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | Supervised laboratory hours                                                                                                                                                                                                                   | 45 |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>120</b> |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Transfer Credit</b><br>Transfer credit already exists: (See <a href="#">bctransferguide.ca</a> )<br><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes<br>Submit outline for (re)articulation:<br><input type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i>                                                                                                                                                                                                                                                                                                                                                      |            |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| Labs to be scheduled independent of lecture hours: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                                                                                                                                                                                                                                               |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Department / Program Head or Director:</b> Norm Taylor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Date approved:</b> September 10, 2018                                                                                                                                                                                                      |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Date approved:</b> November 2, 2018                                                                                                                                                                                                        |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Dean/Associate VP:</b> Dean of Science: Lucy Lee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | <b>Date approved:</b> November 2, 2018                                                                                                                                                                                                        |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | <b>Date of posting:</b> November 30, 2018                                                                                                                                                                                                     |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                     |    |                     |  |                             |    |                                                              |  |                              |  |                      |  |                    |            |                                                                                                                                                                                                                                                                                          |  |

**Learning Outcomes:**

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

- Analyze circuits consisting of multiple resistive elements in series and parallel.
- Use graphical and mathematical representations to describe simple harmonic motion
- Apply the superposition principle to determine the resulting wave shapes from interfering waves in systems that involve sound waves, light waves or waves on a string.
- Solve sound and light problems that involve concepts such as intensity and the Doppler shift.
- Use geometric optics to solve problems consisting of the reflection and/or refraction of light.
- Analyze systems consisting of lenses in combination including eye glasses and microscopes.
- Identify which of the three processes of heat exchange are dominant in a given physical situation; calculate rate of heat transfer.
- Solve calorimetric problems involving temperature changes and phase changes.
- Analyze situations using the laws of thermodynamics.
- Analyze devices which convert heat into work (heat engines) or use work to remove heat from a system (refrigerators and air conditioners).

**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.*)

Lecture, demonstration, small group practice, discussion, laboratory.

**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. Urone & Hinrichs        | College Physics                                                 | <input type="checkbox"/>            | Open Stax/Rice University |      |
| 2. Cutnell & Johnson       | Physics (10 <sup>th</sup> Edition)                              | <input checked="" type="checkbox"/> | Wiley                     | 2015 |
| 3. Knight, Jones and Field | College Physics: A Strategic Approach (3 <sup>rd</sup> Edition) | <input checked="" type="checkbox"/> | Pearson                   | 2014 |
| 5. Walker                  | Physics (5 <sup>th</sup> Edition)                               | <input checked="" type="checkbox"/> | Pearson                   | 2016 |

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

Fully-equipped physics lab.

**Typical Evaluation Methods and Weighting**

|               |     |              |     |                   |   |            |      |
|---------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:   | 45% | Assignments: | 15% | Field experience: | % | Portfolio: | %    |
| Midterm exam: | 25% | Lab work:    | 15% | Practicum:        | % | Total:     | 100% |

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

|              |                                               |
|--------------|-----------------------------------------------|
| Weeks 1 & 2  | Electric Current and Direct-Current Circuits  |
| Week 3       | Oscillations About Equilibrium                |
| Week 4       | Waves and Sound                               |
| Week 5       | Electromagnetic Waves                         |
| Weeks 6 & 7  | Geometrical Optics                            |
| Week 8       | Optical Instruments                           |
| Week 9       | Physical Optics: Interference and Diffraction |
| Week 10 & 11 | Temperature and Heat                          |
| Week 12      | Phase and Phase Changes                       |
| Week 13      | The Laws of Thermodynamics                    |

**Laboratory Experiments**

|               |                                                      |
|---------------|------------------------------------------------------|
| Experiment 1  | Introduction to the Lab                              |
| Experiment 2  | Ohm's Law                                            |
| Experiment 3  | Resistors in Series and Parallel                     |
| Experiment 4  | Standing Waves on a Wire                             |
| Experiment 5  | Standing Waves in an Air Column                      |
| Experiment 6  | Thin Lenses                                          |
| Experiment 7  | Interference and Diffraction                         |
| Experiment 8  | Grating Spectrometer                                 |
| Experiment 9  | Specific Heat of a Metal and Heat of Fusion of Water |
| Experiment 10 | Electrical Equivalent of Heat                        |

**Memo for New Course**

To: UEC and Senate

From: Wayne Podrouzek, Psychology Department Chair

Date: March 6, 2018

**Subject: Proposal for new course (PSYC 429, Heuristics, biases, and critical thinking)**

1. Rationale for new course: This course fulfills two major goals. First, it allows us to expand our offerings in cognitive psychology, an area that is very important in psychology as a whole and in which our current offerings are fairly limited. Second, it allows us to apply these cognitive concepts to the practice of critical thinking, a skill that is central to UFV's mission.
2. How this new course fits into program(s): Other than a few required courses, the psychology extended minor, major, and honours all require a certain number of unspecified upper level credits in psychology (15 for the extended minor, 30 for the major, 45 for the honours). As another three-credit upper level course in psychology, PSYC 429 provides students with one more option for fulfilling that requirement.
3. Explain how the course learning outcomes align with the learning outcomes of the program(s): The emphasis on broad-based critical thinking in this course is particularly congruent with the following learning outcomes for the major. LO1: "Students will be able to identify psychological issues, develop positions on these issues, and critically evaluate evidence for and against these positions, when reading psychological literature." LO4: "Students will be able to demonstrate their ability to access these sources and to demonstrate skills required to critically appraise the scientific rigour presented by information in these sources." LO11: "Students will be able to apply knowledge and process in psychology to self knowledge and self change."
4. Will this course be required by any program beyond the discipline? If so, how will this course affect that program or programs? No
5. Which program areas have been consulted about the course? None
6. If a new discipline designation is required, explain why: N/A
7. What consideration has been given to indigenizing the curriculum? The unit on cultural factors will include a discussion of indigenous ways of knowing.
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: Impact on the budget is expected to be minimal, because enrolment and resource requirements are very similar to our other upper-level offerings.
10. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded? No
11. Estimate of the typical costs for this course, including textbooks and other materials: \$60

**CWC comments and responses:**

- Has the Philosophy department been consulted on this course?

*I have mentioned this informally to Wayne Henry, the head of the philosophy department, as well as to Anastasia Anderson and Glen Baier, two other members of that department; they did not seem very concerned, but I will pursue a more formal communication.*

- From Greg Schlitt:

This looks like a great course. I'm wondering why it has to be at the 4th year level behind the second-year prerequisites; the insights are important and useful for all of our (UFV's) students. A course like this at a lower level with accessible prerequisites could be hugely valuable, and popular. Certainly the texts listed are all accessible, and the popularity of Kahneman's book shows the appeal of such insights.

If the intention is to pitch this truly at the 4th year level, then perhaps there could be a another lower-level version of such a course, offered as a service course to all of UFV.

*I am happy Greg Schlitt considers this a worthwhile initiative. I pitched it at a fourth-year level as a way of indicating to students that the volume of reading expected is fairly high, and that the hoped-for level of discussion is also high. Nevertheless, the fourth-year numbering is not a necessity, and we are willing to offer it as a third-year course if that is seen as preferable. The lack of upper-level prerequisites is largely due to a desire to make it somewhat accessible to people from fields other than psychology: I would consider something like adding a 75-credit entrance requirement as one way of ensuring a high intellectual level while keeping it open to, for example, philosophy students.*

*Dr. Schlitt's further suggestion that this would be more palatable as a 4th year course if there was also a lower level version accords well with my own inclinations; I do indeed plan to work on a 1st year course in a similar vein once this one has gone through.*



ORIGINAL COURSE IMPLEMENTATION DATE: September 2019  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED (six years after UEC approval): December 2024  
 Course outline form version: 10/27/2017

## 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> PSYC 429                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                         |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Course Full Title:</b> Heuristics, Biases, and Critical Thinking<br><b>Course Short Title:</b> Heuristics, Bias, Crit Thought<br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Faculty:</b> Faculty of Social Sciences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Department (or program if no department):</b> Psychology                                                                                                                                                                                                                                                                                                                                                                                    |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Calendar Description:</b><br>Examines the heuristics and biases that people use in their thinking, and how the use of these heuristics and biases may lead to a distorted understanding of the world. Techniques for minimizing such distortions will be taught and applied to real-world issues, so that the students can develop metacognitive strategies for critical thinking.<br><br>Note: Students with credit for PSYC 491T cannot take this course for further credit.                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | PSYC 202 and PSYC 221.                                                                                                                                                                                                                                                                                                                                                                                                                         |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br>Former course code/number: <b>PSYC 491T</b><br>Cross-listed with:<br>Dual-listed with:<br>Equivalent course(s):<br><i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>                                                                                                                                                                                                                                                                                                                                | <b>Special Topics</b><br>This course is offered with different topics:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(Double-click on box to select it as checked.)</i><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>(The specific topic will be recorded when offered.)</i> |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Typical Structure of Instructional Hours</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture/seminar hours</td><td style="text-align: center;">45</td></tr> <tr><td>Tutorials/workshops</td><td></td></tr> <tr><td>Supervised laboratory hours</td><td></td></tr> <tr><td>Experiential (field experience, practicum, internship, etc.)</td><td></td></tr> <tr><td>Supervised online activities</td><td></td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total hours</b></td><td style="text-align: center;"><b>45</b></td></tr> </table> Labs to be scheduled independent of lecture hours: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                          | 45 | Tutorials/workshops |  | Supervised laboratory hours |  | Experiential (field experience, practicum, internship, etc.) |  | Supervised online activities |  | Other contact hours: |  | <b>Total hours</b> | <b>45</b> | <b>Transfer Credit</b><br>Transfer credit already exists: (See <a href="http://bctransferguide.ca">bctransferguide.ca</a> )<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes<br>Submit revised outline for rearticulation:<br><input type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i> |
| Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 45                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| Tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| Supervised laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>45</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Expected Frequency of Course Offerings:</b><br>Annually<br><i>(Every semester, Fall only, annually, every other Fall, etc.)</i>                                                                                                                                                                                                                                                                                                             |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Department / Program Head or Director:</b> Wayne Podrouzek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Date approved:</b> March 2018                                                                                                                                                                                                                                                                                                                                                                                                               |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Date approved:</b> April 2018                                                                                                                                                                                                                                                                                                                                                                                                               |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Dean/Associate VP:</b> Jacqueline Nolte                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Date approved:</b> April 2018                                                                                                                                                                                                                                                                                                                                                                                                               |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Date of posting:</b> May 11, 2018                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |  |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                                             |

**Learning Outcomes:**

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

- Analyze the judgments of others to determine the heuristics and biases on which they are based.
- Critically analyze a range of issues with the aid of debiasing techniques.
- Analyze a range of cognitive tasks for their potential for bias.
- Apply basic Bayesian updating where appropriate.
- Analyze the fit between heuristics and situations to assess ecological rationality.

**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.*)

**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. Kahneman, D.            | Thinking fast and slow               | 1st                      | Penguin                 | 2011 |
| 2. Levitin, D.             | Weaponized lies                      | 1st                      | Penguin                 | 2016 |
| 3. Gigerenzer, G.          | Rationality for mortals              | 1st                      | Oxford University Press | 2008 |
| 4. Dobelli, R.             | The art of thinking clearly          | 1st                      | Harper                  | 2014 |
| 5.                         |                                      | <input type="checkbox"/> |                         |      |

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

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |   |              |      |
|----------------|-----|--------------|-----|-------------------|---|--------------|------|
| Final exam:    | 25% | Assignments: | 40% | Field experience: | % | Portfolio:   | %    |
| Midterm exam:  | 20% | Project:     | %   | Practicum:        | % | Book review: | 15%  |
| Quizzes/tests: | %   | Lab work:    | %   | Shop work:        | % | Total:       | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

Week 1: Introduction to the course and the topic  
 Week 2: General considerations regarding critical thinking, heuristics, biases, and the functions of beliefs  
 Week 3: Conventional critical thinking 1: Evaluating numbers and introduction to Bayes' theorem  
 Week 4: Conventional critical thinking 2: Evaluating verbal arguments and the nature of science  
 Week 5: System 1, System 2, and introduction to cognitive biases  
 Week 6: Overconfidence and prospect theory  
 Week 7: Story bias, framing, and fluency effects  
 Week 8: An ecological approach to heuristics  
 Week 9: Social psychological influences on thinking  
 Week 10: Ideology and bias  
 Week 11: Culture, individual differences, and cognition  
 Week 12: Existential band-aids  
 Week 13: Putting it all together

**Memo for New Course**

To: Dr. Eric Spalding, Chair, Undergraduate Education Committee (UEC)

From: Dr. Vandy Britton, Department Head, Teacher Education Department (TED)

Date: June 21, 2018

**Subject: Proposal for new course EDUC 100: Introduction to Education**

1. Rationale for new course: The department of Teacher Education has recognized the need for a 100-level course that allows first-year students to be introduced to the field of education. This course would provide an opportunity for students to “unpack” their own schooling experience thus far and reflect on their understanding of the significant role that education and schooling has had in their lives. Many prospective teachers do not begin to make the connections between their understandings about education and schooling and their personal beliefs and value systems until they are in their fourth year of their undergraduate degree. This course may provide an opportunity to begin this process earlier.
2. How this new course fits into program(s): This course may be offered to any first year UFV student.  
*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): As this course is about exploring one’s identity in relation to the broader field of education, it aligns with the department values of reflective practice, social justice, and critical mindedness.
4. Will this course be required by any program beyond the discipline? If so, how will this course affect that program or programs? This course will not be a required course for admission into the Bachelor of Education program. It will also not be a prerequisite to either EDUC 200 or EDUC 300.
5. Which program areas have been consulted about the course? The Dean of Professional Studies.
6. If a new discipline designation is required, explain why: N/A
7. What consideration has been given to indigenizing the curriculum? Course content, objectives, assignments, and instructional methods will be Indigenized. This will include the introduction of the First Peoples Principles of Learning, and educational goals viewed from a medicine wheel perspective.
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: This is a new course offered to undergraduate students, and funding will need to be available by the department to account for the FTE count.
  - b. Class size limit: 36
  - c. Frequency of offering: The course will be listed as offered “annually”, permitting the Teacher Education department to offer the course in any semester for which there is sufficient demand.

d. Resources required (labs, equipment) not applicable

10. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded? N/A

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

- a) Course cost: 3 credit undergraduate tuition
- b) Textbook: \$100 or course pack

**CWC comments and responses:**

- Who is this course intended for?  
*As indicated in the memo, EDUC 100 is intended for first-year students who may wish to be introduced to the discipline of education. This would include the group Qualifying Studies, first year BA or BGS students. Since the course was approved at Faculty Council (Professional Studies) we received additional confirmation from the School of Social Work and the Department of CYFS that they would accept this course as an elective.*
- Has consultation occurred with other areas? (Is this course likely to be accepted as an elective in other degree programs?)  
*It is our understanding that the BA degree will accept any approved university-level course as an elective within their program, as there is no longer a restriction of up to 12 credits from outside the arts area.*

Confirmation from Elaine Newman:

*Barbara is correct in her statement about students being able to use EDUC 100 as an elective in the BA. Students in the BA can use upwards to 55 credits in any subject at the university level (100 level and above).*



ORIGINAL COURSE IMPLEMENTATION DATE: September 2019  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED (six years after UEC approval): December 2024  
 Course outline form version: 10/27/2017

## 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> EDUC 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                         |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Course Full Title:</b> Introduction to Education<br><b>Course Short Title:</b><br><i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Faculty:</b> Faculty of Professional Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Department (or program if no department):</b> Teacher Education Department                                                                                                                                                                                                                                                                                                                                                                  |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Calendar Description:</b><br>Students are introduced to the nature and purpose of education. Personal values and beliefs, shaped by diverse educational experiences, are explored. Students examine sociocultural and sociopolitical influences on education. Contemporary questions and issues in education are investigated.                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | None                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i><br>Former course code/number:<br>Cross-listed with:<br>Dual-listed with:<br>Equivalent course(s):<br><i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>                                                                                             |           | <b>Special Topics</b><br>This course is offered with different topics:<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(Double-click on box to select it as checked.)</i><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>(The specific topic will be recorded when offered.)</i> |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Typical Structure of Instructional Hours</b> <table border="1"> <tr> <td>Lecture/seminar hours</td> <td>30</td> </tr> <tr> <td>Tutorials/workshops</td> <td>15</td> </tr> <tr> <td>Supervised laboratory hours</td> <td></td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total hours</b></td> <td><b>45</b></td> </tr> </table> |           | Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                          | 30 | Tutorials/workshops | 15 | Supervised laboratory hours |  | Experiential (field experience, practicum, internship, etc.) |  | Supervised online activities |  | Other contact hours: |  | <b>Total hours</b> | <b>45</b> | <b>Transfer Credit</b><br>Transfer credit already exists: (See <a href="#">bctransferguide.ca</a> )<br><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes<br>Submit revised outline for rearticulation:<br><input type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i> |  |
| Lecture/seminar hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 30        |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| Tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 15        |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| Supervised laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| Experiential (field experience, practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| Supervised online activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Total hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>45</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| Labs to be scheduled independent of lecture hours: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes                                                                                                                                                                                                                                                                                                                                                                                             |           | <b>Grading System</b><br><input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit                                                                                                                                                                                                                                                                                                                           |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Expected Frequency of Course Offerings:</b><br>Once per year<br><i>(Every semester, Fall only, annually, every other Fall, etc.)</i>                                                                                                                                                                                                                                                                                                        |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Department / Program Head or Director:</b> Dr. Vandy Britton                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> June 21, 2018                                                                                                                                                                                                                                                                                                                                                                                                            |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> October 12, 2018                                                                                                                                                                                                                                                                                                                                                                                                         |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Dean/Associate VP:</b> Dr. Tracy Ryder Glass                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> October 12, 2018                                                                                                                                                                                                                                                                                                                                                                                                         |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date of posting:</b> November 16, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                      |    |                     |    |                             |  |                                                              |  |                              |  |                      |  |                    |           |                                                                                                                                                                                                                                                                                                                                     |  |

**Learning Outcomes:**

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

- Examine the nature and purpose of schooling (philosophy, goals, theory, organizations, structures, ethics)
- Develop personal inquiries into values and beliefs about education, learning, and teaching
- Examine pathways to post-secondary education in varying contexts (independent, home-schooling, private, public school systems)
- Critically reflect on personal identity as a learner
- Investigate the relationship between diverse sociocultural and sociopolitical context and schools
- Critique current trends in education
- Examine issues in education as they relate to personal and future educational goals

**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.*)

Lectures, seminars

**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. Parkay, Sandford, Vaillancourt, Stephens, Harris. | Becoming a Teacher                   | <input checked="" type="checkbox"/> | Pearson   | 2018 |
| 2. Selected articles                                 |                                      | <input type="checkbox"/>            |           |      |

**Typical Evaluation Methods and Weighting**

|               |   |              |     |                |     |            |      |
|---------------|---|--------------|-----|----------------|-----|------------|------|
| Final exam:   | % | Assignments: | 40% | Participation: | 10% | Portfolio: | 20%  |
| Midterm exam: | % | Project:     | 30% | Practicum:     | %   | Total:     | 100% |

**Details (if necessary):** Research paper, weekly journal entries, presentation, cumulative project

**Typical Course Content and Topics**

The content of this course is supported by four units:

- 1) Educational philosophy
  - Beliefs about students, knowledge, teaching, learning, curriculum
  - Contemporary influences and aims in education
  - The educated citizen
  - Reflections on and exploration of one's identity as a learner
  - Emerging personal questions and issues related to educational philosophy
- 2) Education and Schools
  - Aims of Education (for pro-social values, for socialization, for personal growth and societal improvement)
  - Schools and social class
  - Schooling - locally and globally
  - School reflecting rural, suburban and urban contexts
  - Community and culture of schools
  - Cultural representation in schools (dimensions, identity and language)
  - Emerging personal questions and issues related to education and schools
- 3) Education system in Canada
  - Major characteristics/dimensions (elementary, middle, secondary schools, school schedules, calendars)
  - Federal and provincial oversight
  - Alternative types of Canadian schools (Independent, Montessori, Home-School, distributed and self-paced programs etc.)
  - Funding of Canadian schools
  - Emerging personal questions and issues related to the education system in Canada
- 4) Current trends and issues in education
  - Examples may include: mental health, social emotional learning (SEL), technology, second language acquisition, evaluation and assessment, etc.
  - Critical examination of teaching for citizenship, anti-racist education, science technology engineering and mathematics (STEM), science technology engineering arts and mathematics (STEAM), sexual orientation gender identity (SOGI 123), environmental education, etc.
  - Emerging personal questions related to these topics

**Memo for Course Changes**

To: Faculty of Science Curriculum Committee

From: Ian Affleck (Department Head, Math & Stats)

Date: July 24, 2018

**Subject: Proposal for revision of MATH 225: Topics in Discrete Mathematics**

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

- ☒ Six-year review
- ☐ Number and/or course code
- ☒ Credits and/or total hours
- ☐ Title
- ☐ Calendar description
- ☐ Prerequisites and/or co-requisites
- ☐ Frequency of course offering
- ☒ Learning outcomes
- ☒ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☐ Other – Please specify:

2. Rationale for change:

- Total hours updated to accurately represent total hours for a 3 credit course in math and stats, which alternates two/three 80-minute meetings per week
- Learning Outcomes: updated to reflect current standards in phrasing and stated in greater detail to clearly indicate the material covered.
- Textbook: changed to the text currently used.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

MATH 225 is a required course in the new Computer Science major. The changes won't affect the CS major as there was no change in content of the course.

5. Which program areas have been consulted about the change(s)?

None.

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

We do not see a way to indigenize the curriculum in a meaningful way in this 6-year review. Instead, indigenization is encouraged at the program level through breadth and elective requirements. Students can choose from courses where indigenization is relevant to the course content and discipline.

7. If this course is not eligible for PLAR, explain why:
8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:
  - a. Credit value
  - b. Class size limit
  - c. Frequency of offering
  - d. Resources required (labs, equipment)
9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?  
No.
10. Estimate of the typical costs for this course, including textbooks and other materials:  
\$120 for the textbook.

**CWC comments and responses for MATH 225, 339, 439, and 445**

- Please further explain why all courses are being changed to 50 hours, particularly when this is an increase from 45 hours for MATH 225, but a decrease from 60 hours for MATH 339, 439, and 445.

*All four of these courses have always had meetings structured as "5 times 80 minutes every two weeks", such as 10-11:20 on Tuesdays, Thursdays, and every second Friday. In fact, that has always been the contact structure for all of our 3-credit courses. In the past, the description of Total Contact Hours was not done consistently for all of our courses. We're trying to change that by correcting the Total Contact Hours each time one of our courses is updated. There is no proposed change to the actual amount of contact time for any courses.*

*All Math & Stats courses that are 4 credits should state that they have 60 Total Contact Hours, since they meet (and have always met) 3\*80 minutes per week over (what is taken to be) a 15-week semester. Almost all of our 4-credit classes now state 60 Total Contact Hours.*

*All Math & Stats courses that are 3 credits - including MATH 225, 339, 439, 445 - should therefore have 50 Total Contact Hours, since they meet (and always have met) for precisely 5/6 as much time as the 4-credit courses: 200 mins per week (on average) rather than 240.*

*The importance of accurately reporting the actual contact hours of a course under Total Contact Hours in its Official Course Outline (OCO) was made clear in Fall of 2018 when UFV arranged to provide a section of a 4-credit course (MATH 105) for an external party, at a remote location. The external party should certainly expect to receive the amount of instructional contact stated in the OCO. Fortunately, the MATH 105 OCO had recently been revised to accurately state 60 Total Contact Hours, rather than 75. It's possible that we wouldn't have been able to deliver the course at the requested location, if 75 hours of instruction was necessary.*

- Is the intention to change all 3-credit MATH courses to an alternating week schedule?

*As mentioned above, all 3-credit MATH and STAT courses have always had an alternating week schedule, or a schedule with an equivalent amount of time (200 minutes per week), arranged as 80+120 mins, or 100+100 mins.*



ORIGINAL COURSE IMPLEMENTATION DATE: September 1999  
 REVISED COURSE IMPLEMENTATION DATE: September 2019  
 COURSE TO BE REVIEWED: (six years after UEC approval) December 2024  
 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> MATH 225                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Topics in Discrete Mathematics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Science                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Department (or program if no department):</b> Mathematics & Statistics                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>Introduces students to some of the most useful types of combinatorial structures: graphs, trees, generating functions, and recurrence relations, all of which play an important role in the mathematics of computers and computation.                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | C+ or better in either MATH 112 or MATH 118.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <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: MATH 243<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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>To find out how this course transfers, see <a href="#">bctransferguide.ca</a> . |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 50</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td>50</td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td></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><b>Total</b></td> <td><b>50</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 50 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>Total</b> | <b>50</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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 50        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>50</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Maximum enrolment (for information only):</b> 36<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> annually                                                                                                                                                                                                                                                                                                                                        |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b> Ian Affleck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> August 21, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date approved:</b> October 5, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Date of posting:</b> November 16, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> Lucy Lee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date approved:</b> October 5, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

**Learning Outcomes**

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

1. Clearly state, interpret, and employ definitions and major theorems;
2. Use basic counting techniques such as addition rule, multiplication rule, and inclusion/exclusion rule;
3. Analyze and count permutations and combinations;
4. Construct generating functions and apply them to counting problems;
5. Solve first order linear and second order linear homogeneous recurrence relations;
6. Construct chromatic polynomials for graphs;
7. Apply some standard graph theory algorithms (Dijkstra's shortest path, maximum matching, minimum weight spanning tree, etc) to solve practical problems.

**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)**

This course will be primarily lecture-based. Evaluation will include quizzes, tests, assignments and a final exam.

**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. Grimaldi, Ralph         | Discrete and Combinatorial Mathematics, 5 <sup>th</sup> Ed | <input type="checkbox"/> | Pearson   |      |
| 2.                         |                                                            | <input type="checkbox"/> |           |      |
| 3.                         |                                                            | <input type="checkbox"/> |           |      |
| 4.                         |                                                            | <input type="checkbox"/> |           |      |
| 5.                         |                                                            | <input type="checkbox"/> |           |      |

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

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |   |            |      |
|----------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:    | 45% | Assignments: | 15% | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 40% | Lab work:    | %   | Field experience: | % | Shop work: | %    |
| Other:         | %   | Other:       | %   | Other:            | % | Total:     | 100% |

**Details (if necessary):** In order to pass the course, a student must achieve 40% or higher on the final exam.

**Typical Course Content and Topics**

1. Counting
  - a. The addition rule and multiplication rule
  - b. The inclusion and exclusion rule
  - c. Combinations and permutations
2. Generating Functions
  - a. Definition and examples
  - b. Partitions of integers
3. Recurrence Relations
  - a. The first-order linear recurrence relation
  - b. The second-order linear homogeneous recurrence relation
  - c. The method of generating functions
4. Graph Theory and Applications
  - a. An introduction to graph theory
  - b. Basic structures: paths and cycles
  - c. Graph colouring and chromatic polynomials
  - d. Trees
  - e. Algorithms: shortest path, minimal spanning trees and maximal matchings

**Memo for Course Changes**

To: Faculty of Science Curriculum Committee

From: Ian Affleck (Department Head, Math & Stats)

Date: Sept 27, 2018

**Subject: Proposal for revision of MATH 312: Vector Calculus**

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

- ☒ Six-year review
- ☐ Number and/or course code
- ☒ Credits and/or total hours
- ☐ Title
- ☒ Calendar description
- ☐ Prerequisites and/or co-requisites
- ☐ Frequency of course offering
- ☒ Learning outcomes
- ☒ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☐ Other – Please specify:

2. Rationale for change:

- Calendar Description: Shortened as per UFV standard requirements.
- Total hours: updated to reflect standards for total hours for a 3 credit course in math and stats.
- Learning Outcomes: unchanged generally, but phrased in greater detail to clearly indicate the material covered.
- Textbook: changed to the texts currently used and referenced.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

No

5. Which program areas have been consulted about the change(s)?

None

6. What consideration has been given to indigenizing the curriculum?  
Indigenization within the department is realized primarily through its efforts to improve access via outreach programs and to collaborate within the institution to improve aboriginal student success. See section 3.2 of the recent (2018) department review.
7. If this course is not eligible for PLAR, explain why:
8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:
  - a. Credit value
  - b. Class size limit
  - c. Frequency of offering
  - d. Resources required (labs, equipment)
9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?  
No.
10. Estimate of the typical costs for this course, including textbooks and other materials:  
Textbook \$150

**CWC comment and response:**

- Calendar description: what value does the first sentence add to the course description?  
*We feel it's valuable to connect MATH 312 to the previous courses in the sequence: MATH 111, 112, 211. We encourage students to take this course in the second semester of their second year, immediately after taking MATH 211, while their calculus skills are still sharp.*



ORIGINAL COURSE IMPLEMENTATION DATE: September 2001  
 REVISED COURSE IMPLEMENTATION DATE: September 2019  
 COURSE TO BE REVIEWED: (six years after UEC approval) December 2024  
 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> MATH 312                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Course Full Title:</b> Vector Calculus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Faculty:</b> Faculty of Science                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Department (or program if no department):</b> Mathematics & Statistics                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Calendar Description:</b><br><p>This course concludes the traditional calculus sequence. Fundamental forms of derivative and integral are extended into two- and three-dimensional settings. Focus of the course is geometry of space curves and core results of calculus on vector fields</p> <p>Note: Students with credit for MATH 212 cannot take this course for further credit.</p>                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | MATH 211.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           | NONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br>Former course code/number: <b>MATH 212</b><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 type="checkbox"/> No (if yes, fill in transfer credit form)<br>Resubmit revised outline for articulation: <input 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: 50</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td>50</td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td></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><b>Total</b></td> <td><b>50</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 50 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>Total</b> | <b>50</b> | <b>Special Topics</b><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 50        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>50</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Maximum enrolment (for information only):</b> 36<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> every other year                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Department / Program Head or Director:</b> IAN AFFLECK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> March 19, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date approved:</b> November 2, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Date of posting:</b> November 30, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Dean/Associate VP:</b> LUCY LEE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date approved:</b> November 2, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                       |  |

**Learning Outcomes**

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

1. Interpret vector-valued functions and their derivatives as descriptions of motion in two or three dimensions.
2. Apply derivatives of vector-valued functions to the problem of finding geometric information such as arc length, curvature, and torsion.
3. Define and interpret the divergence and curl of vector fields.
4. Define and interpret the gradient and Laplacian of scalar fields.
5. Compute derivative quantities such as divergence, curl, gradient, and Laplacian in standard coordinates as well as general orthogonal curvilinear coordinate systems.
6. Identify conservative vector fields and make use of the associated potential functions to evaluate line integrals.
7. Evaluate integrals over curves, surfaces, and volumes.
8. Apply the fundamental results of calculus in the form of Green's Theorem, Stokes' Theorem, and the Divergence Theorem.
9. Investigate at least one additional application or extension of the course concepts.
10. Demonstrate theory and techniques of vector calculus to model and solve real-world problems in areas such as 3-dimensional motion, fluid dynamics, and electrodynamics
11. Effectively communicate to others their approaches to solving problems in the discipline.

**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)**

The course will be primarily lecture-based, with some computational support provided by a computer algebra system such as Maple.

**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. Robert Adams            | Calculus: A Complete Course (9 <sup>th</sup> ed.) | <input checked="" type="checkbox"/> | Addison Wesley | 2017 |
| 2. J. Marsden & A Tromba   | Vector Calculus, (6 <sup>th</sup> ed.)            | <input checked="" type="checkbox"/> | Freeman        | 2011 |
| 3. Colley, Susan J.        | Vector Calculus (4 <sup>th</sup> ed.)             | <input checked="" type="checkbox"/> | Pearson        | 2011 |
| 4.                         |                                                   | <input type="checkbox"/>            |                |      |
| 5.                         |                                                   | <input type="checkbox"/>            |                |      |

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

Access to a computer algebra system

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |     |            |      |
|----------------|-----|--------------|-----|-------------------|-----|------------|------|
| Final exam:    | 40% | Assignments: | 20% | Midterm exam:     | 30% | Practicum: | %    |
| Quizzes/tests: | 10% | Lab work:    | %   | Field experience: | %   | Shop work: | %    |
| Other:         | %   | Other:       | %   | Other:            | %   | Total:     | 100% |

**Details (if necessary):** A grade of 40% or better on the final exam is necessary in order to pass the course.

**Typical Course Content and Topics**

1. Curves in Space
  - Vector valued functions, differentiation, parametrized curves, tangent, normal and binormal, Frenet frame, Frenet formulae, curvature
2. Generalized orthogonal curvilinear coordinates
3. Vector Fields
  - Vector fields, *div*, *grad* and curl, conservative fields, stream lines
4. Integration over Paths and Surfaces
  - Path integrals, line integrals, parametrized surfaces, integrals of scalar and vector functions over surfaces
5. Integral Theorems
  - Green's theorem, Stokes' theorem, Divergence theorem.
6. Applications
  - Investigation of differential forms, implicit function theorem, or Partial differential equations of electrodynamics or fluid dynamics, as time permits.

**Memo for Course Changes**

To: Faculty of Science Curriculum Committee

From: Ian Affleck (Department Head, Math & Stats)

Date: July 23, 2018

**Subject: Proposal for revision of Math 339 and Math 439**

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

- ☒ Six-year review
- ☐ Number and/or course code
- ☒ Credits and/or total hours
- ☒ Title
- ☒ Calendar description
- ☐ Prerequisites and/or co-requisites
- ☐ Frequency of course offering
- ☒ Learning outcomes
- ☐ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☐ Other – Please specify:

2. Rationale for change: Both the courses Math 339 (Introduction to Applied Algebraic Systems) and Math 439 (Modern Algebra), as presently constituted, have a significant overlap in learning outcomes and content. Separating the courses more rigorously will allow mathematics students with an interest in algebra a broader exposure to topics by taking both courses, and allow for deeper investigation in each individual course. Total hours updated to accurately represent total hours for a 3 credit course in math and stats, which alternates two/three 80-minute meetings per week

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

The existing learning outcomes are better partitioned between the two courses, and where there are new outcomes they align with the program outcomes

(M7): (Graduates will) have learned the fundamentals of fields from a spectrum of modern mathematics, thus acquiring a breadth of knowledge, technique and perspective

(M10) (Graduates will) explore the power and utility of mathematics

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs? NA

5. Which program areas have been consulted about the change(s)?  
None.
6. What consideration has been given to indigenizing the curriculum?  
Indigenization within the department is realized primarily through its efforts to improve access via outreach programs and to collaborate within the institution to improve aboriginal student success. See section 3.2 of the recent (2018) department review.
7. If this course is not eligible for PLAR, explain why:
8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:
  - a. Credit value
  - b. Class size limit
  - c. Frequency of offering
  - d. Resources required (labs, equipment)
9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?  
No.
10. Estimate of the typical costs for this course, including textbooks and other materials: approximately \$120 (textbook).



ORIGINAL COURSE IMPLEMENTATION DATE: September 2006  
 REVISED COURSE IMPLEMENTATION DATE: September 2019  
 COURSE TO BE REVIEWED: (six years after UEC approval) December 2024  
 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> MATH 339                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Introduction to Field Theory and Applications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Field Theory and Applications                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Science                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Department (or program if no department):</b> Mathematics & Statistics                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>An introduction to fields and rings, two of the fundamental structures of modern algebra, with special attention to applications. Applications covered include public key cryptography, error-correcting codes, and geometric construction arguments.                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | MATH 221 and a C or better in MATH 265.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <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>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="#">bctransferguide.ca</a> . |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 50</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td>50</td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td></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><b>Total</b></td> <td><b>50</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 50 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>Total</b> | <b>50</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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 50        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>50</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Maximum enrolment (for information only):</b> 36<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> Semi-annually                                                                                                                                                                                                                                                                                                                                   |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b> Ian Affleck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> September 26, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date approved:</b> October 5, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Date of posting:</b> November 16, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> Lucy Lee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date approved:</b> October 5, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

**MATH 339**

**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. Establish elementary ring-theoretic and field-theoretic propositions and construct counterexamples
2. Perform elementary number-theoretic computations and establish elementary number-theoretic propositions
3. Define ring isomorphism and establish isomorphism or non-isomorphism between rings
4. State and establish elementary propositions relating irreducibility, roots and factorization in polynomial rings over a field
5. Compute GCDs, test for irreducibility and factor in a polynomial ring
6. Construct extension fields as a quotient of a polynomial ring over the ground field and perform computations there
7. Establish elementary propositions regarding extension fields concerning algebraicity, minimal polynomial and degree
8. Explicate the degree requirements on numbers geometrically constructible over  $\mathbb{Q}$  and hence the impossibility of certain geometric constructions
9. Define and determine primitive elements of a finite field and establish elementary facts about them
10. Determine if a polynomial over a finite field is primitive and elucidate the connection with primitive elements
11. Construct block codes as polynomial codes, use them to detect and correct errors, and prove elementary propositions regarding them.
12. Establish the existence of finite fields of prime power order

**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)**

The course will be primarily lecture-based, along with student seminar presentations.

**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. | RS Irving                  | Integers, Polynomials and Rings: A Course in Algebra | <input type="checkbox"/> | Springer Verlag | 2004 |
| 2. | Gilbert & Nicholson        | Modern Algebra and Applications                      | <input type="checkbox"/> | Wiley           | 2004 |
| 3. |                            |                                                      | <input type="checkbox"/> |                 |      |
| 4. |                            |                                                      | <input type="checkbox"/> |                 |      |
| 5. |                            |                                                      | <input type="checkbox"/> |                 |      |

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

**Typical Evaluation Methods and Weighting**

|                |      |              |      |                   |      |            |      |
|----------------|------|--------------|------|-------------------|------|------------|------|
| Final exam:    | 40 % | Assignments: | 25 % | Midterm exam:     | 35 % | Practicum: | %    |
| Quizzes/tests: |      | Lab work:    | %    | Field experience: | %    | Shop work: | %    |
| Other:         | %    | Other:       | %    | Other:            | %    | Total:     | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

- Review of basic number theory (primes, divisibility, modular arithmetic) (Topics covered in MATH 265)
- Rings and Fields
- Examples already known: integers, reals, matrices, polynomials, etc.
- Definitions and further examples including the integers modulo  $n$
- Subrings/Subfields
- Polynomial rings: the algebra of polynomials (over integers, rationals, reals, complexes, finite fields), roots, factorization, irreducibility tests.
- Review of vector spaces over a field
- Extension fields: Construction via quotients of polynomial rings, Fundamental Theorem of Algebra, Splitting fields, minimal polynomials, degree of extensions Field isomorphisms
- Finite fields: Existence, construction, structure and subfield structure.
- Primitive elements, primitive polynomials Applications: Latin squares, error-correcting codes, geometric constructions



ORIGINAL COURSE IMPLEMENTATION DATE: May 1994  
 REVISED COURSE IMPLEMENTATION DATE: September 2019  
 COURSE TO BE REVIEWED: (six years after UEC approval) December 2024  
 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> MATH 439                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Group Theory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Science                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Department (or program if no department):</b> Mathematics & Statistics                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>Groups are a fundamental structure of modern algebra with many applications in the sciences. Introduces the basic examples, constructions, and theorems of elementary group theory and explores applications within mathematics and beyond.                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | MATH 339 or MATH 355.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <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>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="#">bctransferguide.ca</a> . |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 50</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td>50</td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td></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><b>50</b></td> <td><b>45</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 50 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>50</b> | <b>45</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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 50        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>50</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>45</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Maximum enrolment (for information only):</b> 36<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> <u>Semi-Annually</u>                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b> Ian Affleck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | <b>Date approved:</b> September 26, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date approved:</b> October 5, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           | <b>Date of posting:</b> November 16, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> Lucy Lee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Date approved:</b> October 5, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |           |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

**MATH 439**

**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. Define elementary group-theoretic concepts
2. Establish elementary group-theoretic propositions and construct counter-examples
3. Construct quotient groups, perform computations there
4. Establish elementary statements about homomorphism and isomorphism
5. Compute with and establish elementary propositions about permutations
6. Employ group theoretic techniques in counting and symmetry problems
7. Employ representation techniques for finite Abelian groups
8. Use Sylow theorems to elucidate group structure based on order
9. Compute, and establish elementary propositions in the theory of one or more of the following, as time permits
  - a. Symmetry and crystallographic groups
  - b. Braid groups
  - c. Permutation groups
  - d. Series compositions of groups (solubility, nilpotency)
  - e. Infinite Abelian group theory

**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)**

The course will be primarily lecture-based and may include student presentations.

**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. A. Papantonopoulou      | Algebra Pure and Applied                           | <input type="checkbox"/> | Prentice Hall | 2002 |
| 2. J. Gallian              | Contemporary Abstract Algebra, 9 <sup>th</sup> ed. | <input type="checkbox"/> | Brooks Cole   | 2016 |
| 3.                         |                                                    | <input type="checkbox"/> |               |      |
| 4.                         |                                                    | <input type="checkbox"/> |               |      |
| 5.                         |                                                    | <input type="checkbox"/> |               |      |

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

**Typical Evaluation Methods and Weighting**

|                |      |              |      |                   |      |            |      |
|----------------|------|--------------|------|-------------------|------|------------|------|
| Final exam:    | 40 % | Assignments: | 25 % | Midterm exam:     | 35 % | Practicum: | %    |
| Quizzes/tests: | %    | Lab work:    | %    | Field experience: | %    | Shop work: | %    |
| Other:         | %    | Other:       | %    | Other:            | %    | Total:     | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

Groups  
 Basic definitions and examples  
 Cyclic groups, permutation groups, and Cayley's Theorem  
 Cosets and Lagrange's Theorem  
 Homomorphisms, normal subgroups and quotient groups, the Isomorphism Theorems  
 Direct products and the Fundamental Theorem of Finite Abelian Groups  
 Conjugacy classes, the Class equation, applications to symmetry and counting  
 Sylow's Theorems  
 Additional topics chosen from:  

- a. Symmetry and crystallographic groups
- b. Braid groups
- c. Permutation groups
- d. Series compositions of groups (solubility, nilpotency)
- e. Infinite Abelian group theory

**Memo for Course Changes**

To: Faculty of Science Curriculum Committee

From: Ian Affleck (Department Head, Math & Stats)

Date: July 24, 2018

**Subject: Proposal for revision of MATH 445: Introduction to Graph Theory**

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

- ☒ Six-year review
- ☐ Number and/or course code
- ☒ Credits and/or total hours
- ☐ Title
- ☒ Calendar description
- ☒ Prerequisites and/or co-requisites
- ☐ Frequency of course offering
- ☒ Learning outcomes
- ☐ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☐ Other – Please specify:

2. Rationale for change:

- Calendar Description: Changed to give an intuitive description of graph theory and list some of the topics covered.
- Prerequisite: Changed from “MATH 211, MATH 221 AND at least two upper-level Math courses” to “(MATH 221 or MATH 265 or MATH 225) and (at least two MATH courses 300-level and above).” Any of the three 200-level MATH courses listed will expose students to proof techniques or discrete math. (Students in MATH 445 should have at least one of these.) The upper year requirements ensure that the students will have the mathematical sophistication and maturity to be successful in a theory-heavy proofs course.
- Total hours updated to accurately represent total hours for a 3 credit course in math and stats, which alternates two/three 80-minute meetings per week
- Learning Outcomes: updated to reflect current standards in phrasing and stated in greater detail to clearly indicate the material covered.
- Textbook: changed to the text currently used.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?  
No
5. Which program areas have been consulted about the change(s)?  
None
6. What consideration has been given to indigenizing the curriculum?  
We do not see a way to indigenize the curriculum in a meaningful way in this 6-year review. Instead, indigenization is encouraged at the program level through breadth and elective requirements. Students can choose from courses where indigenization is relevant to the course content and discipline.
7. If this course is not eligible for PLAR, explain why:
8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:
  - a. Credit value
  - b. Class size limit
  - c. Frequency of offering
  - d. Resources required (labs, equipment)
9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?  
No.
10. Estimate of the typical costs for this course, including textbooks and other materials:  
\$92.00 for the textbook.



ORIGINAL COURSE IMPLEMENTATION DATE: July 1994  
 REVISED COURSE IMPLEMENTATION DATE: September 2019  
 COURSE TO BE REVIEWED: (six years after UEC approval) December 2024  
 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> MATH 445                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Introduction to Graph Theory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Science                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Department (or program if no department):</b> Math and Stats                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>Graphs are used to model a wide variety of practical problems, such as scheduling and network architecture, facilitating the visualization of small instances of problems with diagrams. Topics covered include connectivity, trees, planarity, colouring, matchings, independent sets, and Eulerian and Hamiltonian graphs.                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | One of (MATH 221, MATH 265, or MATH 225) and (at least two MATH courses 300-level and above).                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <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>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: 50</b><br><b>Typical structure of instructional hours:</b> <table border="1"> <tr> <td>Lecture hours</td> <td>50</td> </tr> <tr> <td>Seminars/tutorials/workshops</td> <td></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><b>Total</b></td> <td><b>50</b></td> </tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 50 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>Total</b> | <b>50</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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 50        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>50</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Maximum enrolment (for information only):</b> 36<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> Every 3 years.                                                                                                                                                                                                                                                                                                                                                          |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b> Ian Affleck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | <b>Date approved:</b> August 21, 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date approved:</b> October 5, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Date of posting:</b> November 16, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> Lucy Lee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | <b>Date approved:</b> October 5, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | <b>Date of meeting:</b> December 14, 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |                              |  |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

**Learning Outcomes**

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

1. Proficiently use the extensive vocabulary that is inherent in the study of graph theory (ie vertices, edges, subgraphs, degrees, walks, trees, etc).
2. Write a proof using either strong or weak induction as applied to various graph parameters or substructures, as appropriate;
3. Write a proof using the direct approach, contrapositive or contradiction, as appropriate;
4. Apply simple algorithms to graphs (e.g. finding spanning trees, using the greedy algorithm to find a colouring, etc);
5. Apply fundamental theorems (e.g. Kuratowski's, Menger's, Brooke's, Vizing's);
6. Model problems using graph theory (e.g. model scheduling problems using graph colouring).

**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)**

This course will be primarily lecture-based. Evaluation will include quizzes, tests, assignments, and a final exam.

**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. Chartrand, Lesniak, Zhang | Graphs and Digraphs, 6 <sup>th</sup> Ed | <input checked="" type="checkbox"/> | CRC Press | 2015 |
| 2.                           |                                         | <input type="checkbox"/>            |           |      |
| 3.                           |                                         | <input type="checkbox"/>            |           |      |
| 4.                           |                                         | <input type="checkbox"/>            |           |      |
| 5.                           |                                         | <input type="checkbox"/>            |           |      |

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

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |   |            |      |
|----------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:    | 40% | Assignments: | 20% | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 40% | Lab work:    | %   | Field experience: | % | Shop work: | %    |
| Other:         | %   | Other:       | %   | Other:            | % | Total:     | 100% |

**Details (if necessary):** Students must achieve at least 40% on the final exam in order to receive credit for this course.

**Typical Course Content and Topics**

1. Graphs and sub-graphs: Isomorphism, sub-graphs, adjacency matrix, paths, cycles and vertex degrees.
2. Trees: Cut-vertices, cut-edges and Cayley's formula.
3. Connectivity: Blocks and applications of connectivity.
4. Eulerian and Hamiltonian graphs: Euler tours, Hamiltonian cycles and applications.
5. Matchings: Matchings, coverings and the assignment problem.
6. Edge and vertex colorings: Chromatic number, chromatic index, Vizing's Theorem, Brooks' Theorem and chromatic polynomials.
7. Independence: Independent sets, cliques, Ramsey's Theorem and applications.
8. Planar graphs: Plane and planar graphs, dual graphs, Euler's formula and Kuratowski's Theorem.

**Memo for Program Changes**

To: Faculty of Science Curriculum Committee

From: Ian Affleck

Date: Oct 16, 2018

**Subject: Program change – Bachelor of Science**

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 options for the math admission requirement for the BSc should include all of the prerequisite options for MATH 111, as preparedness for (or completion of) MATH 111 is the intent of the BSc math admission requirement.

To this end, we propose that

1. the admission requirement option “MATH 094/095 with a minimum average grade of B” be changed to “MATH 095 with a minimum grade of B”, and
2. the option “MATH 092 and MATH 093, each with a minimum grade of B” be added.

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

Program outcomes are not affected.

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

The proposed changes involve no consideration to changing the curriculum, and are motivated

simply by the necessity of updating admission requirements to serve their intended purpose.

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

No additional resources are 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?

Students who meet the new math admission requirements but not the old requirements will no longer need to make a special request for admission into the BSc program. Enrolment in the program is not expected to be affected.

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 credits in the program.

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 resources are 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 courses required in the BSc.

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.

There are no budgetary considerations.

# Bachelor of Science degree

## Entrance requirements

1. B.C. secondary school graduation or equivalent, or completion of nine university-level credits with a minimum GPA of 2.00 in all university courses attempted.
2. **Mathematics requirement:** one of the following:
  - o Pre-calculus 12 or Principles of Mathematics 12 with a minimum grade of B
  - o MATH ~~094~~/095 with a minimum ~~average~~ grade of B
  - o MATH 096 with a minimum grade of B
  - o MATH 092 and MATH 093, each with a minimum grade of B
  - o MDPT score of 70% or higher
  - o MATH 110 with a minimum grade of C+
  - o MATH 111 with a minimum grade of C
3. **Science requirement:** one course from one of the following disciplines, with a minimum grade of C+:
  - o Biology: Biology 12, BIO 093, or BIO 111
  - o Chemistry: Chemistry 12, CHEM 093 (previously offered), CHEM 110, or CHEM 113
  - o Geography: Geography 12, GEOG 101, GEOG 102, or GEOG 103
  - o Geology: Geology 12 or GEOG 116
  - o Physics: Physics 12, PHYS 093, PHYS 100, PHYS 101, PHYS 105, or PHYS 111
4. **English requirement:** 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.

Attendance at a Bachelor of Science information session or personal interview with an Advisor is recommended.

Students who do not meet these requirements might consider Qualifying Studies.

**(Remainder of calendar copy for BSc has no proposed changes.)**

**Memo for Course Changes**

To: UEC

From: Anthony Stea, Biology Department Head

Date: August 2018

**Subject: Proposal for revision of Biology Honours**

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

- ☐ Six-year review
- ☐ Number and/or course code
- ☐ Credits and/or total hours
- ☐ Title
- ☐ Calendar description
- ☐ Prerequisites and/or co-requisites
- ☐ Frequency of course offering
- ☐ Learning outcomes
- ☐ Delivery methods and/or texts and resource materials
- ☐ PLAR options, grading system, and/or evaluation methods
- ☐ Discontinuation of course
- ☒ Other – Please specify: *removal of BIO 497 from the required courses.*

2. Rationale for change:

*No longer a department requirement.*

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s):

*No substantial changes.*

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

*BO 497 is not required by any program beyond this discipline.*

5. Which program areas have been consulted about the change(s)?

*Biology Curriculum Committee, Sept. 29, 2017 meeting.*

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

*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.*

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

*This course is eligible for PLAR.*

8. If any of the following items on the official course outline have changed, explain how the change will affect the budget for your area or any other area:
  - a. Credit value – *no change*
  - b. Class size limit – *no change*
  - c. Frequency of offering – *request to remove as a BIO Honours requirement/no budget impact*
  - d. Resources required (labs, equipment) – *no change*
9. Are field trips required for this course? (Field trip requirements must be announced in the timetable.) How are the trips funded?  
*Field trips are not a requirement.*
10. Estimate of the typical costs for this course, including textbooks and other materials:

**CWC comments and responses:**

- The provided rationale (“no longer a department requirement”) is insufficient. Please provide additional rationale.  
*Rationale = It has been difficult to timetable this 1 credit course so that all upper level students who need to take it can. Since this course is 1 credit only it has been difficult to get volunteers to teach the course.*
- Will BIO 497 be discontinued? (If not, why? What will this course be used for if it is not a program requirement?)  
*YES*
- Does this change reduce the total number of credits for the Honours program?  
*NO, the total number of credits required for the honours degree will stay at 132.*
- Graduation requirements include “CGPA of 3.33”. Is this CGPA, (degree) program GPA, or (Biology Honours) program GPA?  
*The GPA in all Biology courses used towards the degree must be at least 3.33.*

## BIOLOGY

[ufv.ca/biology](http://ufv.ca/biology)

## Biology Honours

## Upper-level requirements

| Course                                                                                                                                                                     | Title                                                                                     | Credits      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------|
| <b>Two of the following:</b>                                                                                                                                               |                                                                                           | 6            |
| BIO 310                                                                                                                                                                    | Conservation Biology                                                                      |              |
| BIO 312                                                                                                                                                                    | Developmental Biology                                                                     |              |
| BIO 320                                                                                                                                                                    | Biochemistry                                                                              |              |
| BIO 416                                                                                                                                                                    | Evolution                                                                                 |              |
| <b>Plus:</b> (see Note)                                                                                                                                                    |                                                                                           |              |
| <del>BIO 497</del>                                                                                                                                                         | <del>Biology Seminar</del>                                                                | <del>±</del> |
| BIO 499                                                                                                                                                                    | Directed Studies in Honours Biology                                                       | 9            |
| 24 credits of BIO courses numbered 300 and above. (Included in these 24 upper-level credits must be at least eight credits chosen from four-credit BIO courses with labs.) |                                                                                           | 24           |
| Electives                                                                                                                                                                  | Upper-level university courses in any discipline, 3 credits of which must be non-Biology. | 14           |

Note: Students who completed MATH 302 prior to September 2012 can use this course toward upper-level requirements.

Upper-level courses at other institutions may be counted as upper-level Biology transfer credit. See Courses at other institutions for details.

## Honours research project

Prior to enrolling in BIO 499, each honours candidate will need to meet with their honours supervisor to assess their progress in the honours program. At this time, the candidate should submit an updated transcript to their supervisor for review.

Successful completion of a research project is required prior to graduation. This project, which will be developed in consultation with a faculty (or research and honours) supervisor, will demonstrate a student's skill and knowledge in the area of biological research being pursued. Each honours applicant will then be required to present the findings of their research at a professional or university conference, or at some other venue approved by the HAC.

Following project completion and presentation, the honours supervisor will recommend a letter grade. The HAC will choose whether or not to accept this grade based on further review of the student's work in BIO 499.

## Graduation requirements

The student's final CGPA must be at least 3.33, and a grade of B+ or better must be achieved in BIO 499, in order for an honours designation to be awarded.

# MEMO



To: UEC  
From: Karin Jager, Program Working Group Chair  
Cc: Jacqueline Nolte, Dean, College of Arts; Bruce Kirkley, Program Development Coordinator  
Date: November 23, 2018  
Re: Correction to GDD Major Full Proposal: Reference to GD 361 changed to GD 461

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The Program Development and Quality Assurance Office would like to note a correction made to the GDD Major proposal approved at UEC on September 28<sup>th</sup>, 2018. In the program requirements for the proposal, GD 361 Portfolio Development for GDD has been changed to GD 461 Advanced Portfolio for GDD. PDQA has confirmed that this is an editorial adjustment that corrects an oversight in the proposal submitted to UEC in September, which should have shown GD 461 rather than 361.



# MEMO

To: UEC  
From: Randy Kelley, Director School of Trades  
Date: 07/12/2018  
Re: Harmonization – Construction Electrician

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As information for UEC, We have received an Official Program Standards Notification (OPSN) from the ITA that pertains to the Construction Electrician program offered at UFV. These mandated changes resulting from the Pan-Canadian Harmonization Initiative come into effect December 1, 2018 but will effectively come into place for our programs starting in January 2019.

The intent of the Harmonization Initiative is to align the sequence of technical education provided to apprentices across the nation. This initiative was launched by the Canadian Council of Directors of Apprenticeship in Fall of 2013, and is endorsed by both federal and provincial regulating bodies.

The following are available to UEC members in **S:\Groups\UEC\2018-12-14 Construction Electrician:**

1. Memo
2. OPSN 2017 003.3 (Official Program Standards Notification)
3. Program Update
4. Training Transition Plan

Additional Materials included:

Construction Electrician Program Outline (Apprenticeship)

Training Topics and Time Allocations (Apprenticeship)(Level One applies to Foundation) (p15-22)