



UNDERGRADUATE EDUCATION COMMITTEE (UEC)

June 17, 2016 - 10:00 AM

A225

AGENDA

~~~~~

Page

#### 1. APPROVAL OF THE AGENDA

#### 2. APPROVAL OF UEC MINUTES

4 - 7      2.1. UEC draft minutes: May 20, 2016

MOTION: To approve the draft minutes as presented.

#### 3. COURSES AND PROGRAMS

##### 8 - 35      3.1. Health Sciences

Discontinuation: NURS 211, 220, 307, 310

Discontinuation: HSC 310, 312

New course: NURS 300, Professional Nursing: Research

New course: NURS 305, Professional Nursing: Leadership

Changes including title, prerequisites, and corequisites: NURS 301, 304

Changes including credits, prerequisites, corequisites, and total hours: NURS 303, 306

Change to program requirements: Bachelor of Science in Nursing

MOTION: To approve the HSC and NURS course outlines as presented.

MOTION: To recommend approval of the program changes to the Bachelor of Science in Nursing as presented.

##### 36 - 47      3.2. Geography and the Environment

New course: ENV 200

New course: ENV 299

New course: ENV 399

New course: ENV 410

New course: ENV 499

New program: Bachelor of Environmental Studies

New program: Bachelor of Environmental Studies (Natural Sciences)

Page

Change to entrance and program requirements: Geographic Information Systems certificate

MOTION: To approve the new course designation ENV (Environmental Studies) as presented.

MOTION: To approve the new ENV courses as presented.

MOTION: To recommend approval of the new Bachelor of Environmental Studies degree as presented.

MOTION: To recommend approval of the new Bachelor of Environmental Studies (Natural Sciences) degree as presented.

MOTION: To recommend the changes to the GIS certificate entrance and program requirements as presented, effective January 2017.

48 -  
173

### **3.3. Applied and Technical Studies**

Change to program length: Plumbing and Piping certificate

Changes including title, credits, prerequisites, and total hours: PLMB 111, 113

Changes including credits, prerequisites, and total hours: PLMB 112, 114

MOTION: To recommend approval of the change in length of the Plumbing and Piping certificate and changes to associated course outlines (PLMB 111, 112, 113, 114) as presented, effective September 2016.

## **4. OTHER BUSINESS/DISCUSSION ITEMS**

### **4.1. UEC Chair, 2016/17**

### **4.2. Admissions Subcommittee report**

### **4.3. Curriculum Quality Subcommittee report**

### **4.4. Transfer Credit Subcommittee report**

### **4.5. Policy Subcommittee report**

174

### **4.6. Addition to UEC committee membership**

MOTION: To recommend that the Director of Advising be added to UEC as an ex-officio non-voting member.

## **5. INFORMATION ITEMS**

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

BIO 093

CHEM 083

PHIL 315, 480, 481, 482, 483

PHYS 083

Page

175 -  
176

**5.2. UEC meeting dates and committee membership for 2016/17**

**6. ADJOURNMENT**



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

May 20, 2016  
10:00 AM - A225  
Abbotsford Campus

### **DRAFT MINUTES**

---

**PRESENT:** Donna Alary, Maria Bos-Chan, Rhonda Colwell, Heather Compeau, John English, Nancy Goad, Jody Gordon, Arlene Leon, Steven Marsh, David McGuire, Rod McLeod, Sylvie Murray, Eric Spalding, Simon Xi  
**ABSENT:** Gurbir Brar, Sue Brigden, Vlad Dvoracek, Peter Geller, Shirley Hardman, Stan Manu, Kate McCulloch, Lisa Moy, Samantha Patridge, Kirsten Robertson, Maureen Wideman  
**GUESTS:** Margret Bollerup, Bruce Kirkley, Noham Weinberg  
**RECORDER:** Amanda Grimson

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

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

##### **2.1. UEC draft minutes: April 22, 2016**

Item 4.6 included a statement that graduate-level credentials only include courses at the 700 level, not the 600 level. This is inaccurate.

##### **MOTION:**

To approve the draft minutes as amended:

- 4.6: removal of statement regarding graduate-level courses.

CARRIED

#### **3. COURSE OUTLINES**

##### **3.1. English**

Discontinuation: ENGL 229, 230, 231, 250, 254, 255, 256, 263, 264, 274, 372

Change to prerequisites: ENGL 200, 204, 205, 206, 207, 209, 214, 216, 225, 228, 270, 275

Change to prerequisites: ENGL 233/THEA 203, ENGL 234/THEA 204

Review with changes including prerequisites: ENGL 220, 226, 227, 240, 245, 280

##### **MOTION:**

To approve the ENGL course outlines and discontinuations as presented.

CARRIED

##### **3.2. Theatre**

Changes including title: THEA 121, 123

##### **MOTION:**

To approve the THEA course outlines as presented.

CARRIED

UEC Draft Minutes  
20 May 2016

---

### **3.3. Chemistry**

New course: CHEM 410

This course was approved by e-mail vote in early May. J. Gordon (UEC Vice-chair and Acting Registrar) thanked the committee for their willingness to be flexible in this unusual case.

#### **MOTION:**

MOTION: To approve the CHEM 410 course outline as presented with a review date of January 2017.

CARRIED BY EMAIL VOTE MAY 6, 2016

MOTION: That a full course review of CHEM 410 be completed by January 2017, or UEC will move to discontinue the course.

CARRIED BY EMAIL VOTE MAY 6, 2016

## **4. PROGRAMS**

### **4.1. Geography**

Change to program: Geographic Information Systems certificate

Several suggestions were made for changes to the entrance requirements, including removing the sentence "New students should apply to Qualifying Studies", and only requiring the prerequisites for COMP 120 and one of STAT 104 or STAT 106, rather than "GEOG, COMP, and STAT course prerequisites".

Any issues will be fixed and resubmitted for the June UEC meeting. S. Murray will assist with revisions.

#### **MOTION:**

To approve the changes to the Geographic Information Systems certificate program, effective January 2017.

WITHDRAWN

## **5. OTHER BUSINESS/DISCUSSION ITEMS**

### **5.1. Graduate-level courses as part of undergraduate programs**

A Master of Science and Technology is in development, and the Program Working Group would like to introduce dual-listed courses that could apply to both graduate and undergraduate programs. These courses would be listed at two different levels (e.g. CHEM 412 and CHEM 712), with additional requirements (a project, etc.) for graduate students.

Such courses are intended to be taught at the graduate level, but there may be some advanced undergraduate students who will want to enroll as well. This is a practice currently followed by SFU and UBC. For instance, every graduate-level chemistry course offered at SFU is dual-listed as an undergraduate course; at UBC, approximately 70% are dual-listed. SFU also allows concurrent enrollment in graduate and undergraduate programs, but that is not being proposed at this point.

UEC Draft Minutes  
20 May 2016

---

It was noted that this is a similar model to high school students taking university-level courses. A number of UFV's partner institutions in Europe also allow UFV students to take Masters-level courses.

There was a concern about counting the same credits for more than one credential, but N. Weinberg (PWG chair) indicated that there is already a significant amount of overlap between science programs, even though students must complete the specific requirements for each program.

Some institutions choose a different numbering structure for courses that can be applied to both graduate and undergraduate programs. It was suggested that the PWG consider offering these courses at the 500 level, rather than dual-listing at the 400 and 700 levels.

**MOTION:**

To approve in principle the notion of graduate-level courses as part of undergraduate-level programs.

CARRIED

**5.2. Guiding Principles for Quality Curriculum**

S. Pattridge, H. Compeau, L. Thompson, and S. Murray have been working on revisions to the principles based on feedback from UEC and Faculty Councils. The included tables are not for approval, but will be considered "living documents".

There have been substantial changes to the "Inclusive" principle since UEC last reviewed this document, but most of the other changes are small.

It was noted that principle #6, "Inclusive", may be unnecessary as this is already part of the B.C. Human Rights Code. The committee felt that this was important to include as a reminder for curriculum developers, but agreed that reference to the code should be replaced with more general language.

**MOTION:**

To recommend to Senate the approval of the *Guiding Principles for Curriculum Quality* as amended:

- Reference to B.C. Human Rights Code in principle #6 will be replaced with a more general reference to human rights legislation, although it will remain in the explanatory paragraphs.

CARRIED

**5.3. Procedures for program and course approval**

The Program Development Office has undertaken the annual review of this document, and proposed some revisions. Additional revisions were also suggested.

**MOTION:**

To approve the revised procedures as amended:

- Major vs. minor changes to an existing program:
  - o "Addition or deletion of a specialization (e.g., concentration or

UEC Draft Minutes  
20 May 2016

---

- option ~~under a major~~)"
- o "\*\*\*If not considered a new program or covered under the Program Discontinuance policy (222). Addition of a minor or major is considered a new program, not a major program change. Degree programs that refer to their main areas of specialization as "options" or "concentrations" must consult the Program Development Office to determine whether addition of a new specialization is considered a major program change or a new program."

CARRIED

**5.4. Policy Subcommittee report**

The Course Credits policy (105) has been approved by Senate.

**5.5. Admissions Subcommittee report**

There was no report from this subcommittee.

The ad hoc subcommittee created to look at admissions and interview processes was also discussed. This subcommittee has met once, but has not made much progress yet. It was suggested that this topic could be further explored at the UEC retreat, with the new registrar. The subcommittee members will continue gathering information in preparation for retreat.

**5.6. Transfer Credit Subcommittee report**

**6. ADJOURNMENT**

The meeting was adjourned at 11:47 am.

**Memo for Course Changes**

To: UEC/ Campus Wide Consultation

From: Samantha Hampton, Co-Chair of BSN Task Force Committee; Nancy Goad, BSN Program Coordinator

Date \_\_\_\_\_, 2016

**Subject: Proposal for revision of NURS 300 NURS 301, NURS 303, NURS 304, NURS 305, NURS 306, discontinuation of NURS 307 and NURS 220**

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: additional of a course

2. Rationale for change:

- Revisions are being made to allow for improved levelling of nursing concepts across the 4 year BSN Program and to enhance leadership/communication qualities of students.

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

- The BSN curriculum is being reviewed and revised to ensure currency of concepts and improved levelling of the content. A substantive review has not occurred for several years.
- The learning outcomes reflect the standards of practice for a Registered Nurse (RN) in B.C. The course outlines reflect overall standards of practice inherent in the program outcomes.

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

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

- BSN Faculty, BSN Curriculum Committee, Faculty Council Curriculum Committee November 4<sup>th</sup>, 2015, 2015 and Faculty Council- Health Sciences November 20<sup>th</sup>, 2015.

6. What consideration has been given to indigenizing the curriculum?
  - There is a strong focus in this curriculum related to diversity. Aboriginal health and healing practices are emphasized.
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
    - Semester 5:**
      - NURS 300 will replace NURS 307; with the revised curriculum, research will be taught earlier in the program in semester 5 instead of semester 6. The implementation date of NURS 300 is Summer, 2017. No change in credit.
      - As of September 2017, HSC 310 will be discontinued; with the revised curriculum, HSC 310 has been integrated in NURS 205 in semester 4.
      - NURS 303, the Nursing practice course for semester 5, will increase from 4 credits to 6 which reflects to allocation of clinical hours across the revised curriculum with NURS 120 and NURS 220 being discontinued.
      - There will be an overall increase in tuition of \$294.80.
    - Semester 6:**
      - NURS 307 will be discontinued January 2018, as it is now reflected as NURS 300 in semester 4.
      - NURS 305 is a new 3 credit course that focuses on leadership in nursing; these 3 credits will be offset by the discontinuation of HSC 312. The implementation date of NURS 305 is September 2017.
      - HSC 312 will be discontinued January 2018, as the Canadian Health Care Systems content has now been integrated throughout the revised curriculum.
      - NURS 306 increases in credit from 5 to 6 reflect the allocation of clinical hours across the revised curriculum.
      - There will be an overall decrease in tuition of \$294.80.

Note: The overall cost of tuition across year three in the revised curriculum remains the same as the current program; please see figure below.

| <b>Year 3 Semester 5-current program</b> |           | <b>Semester 6-current program</b>   |           |
|------------------------------------------|-----------|-------------------------------------|-----------|
| Course                                   | Credits   | Course                              | Credits   |
| NURS 301 Situational Transitions         | 4         | NURS 304 Multiple Transitions       | 4         |
| NURS 303 Nursing Practice                | 4         | NURS 306 Nursing Practice           | 5         |
| HSC 310 Ethics in Health Care            | 3         | NURS 307 Nursing Research           | 3         |
| STATS 104/106 Statistics                 | 4         | HSC 312 Canadian Health Care System | 3         |
| <b>Total</b>                             | <b>15</b> | Elective (any discipline)           | 3         |
|                                          |           | <b>Total</b>                        | <b>18</b> |

| <b>Year 3 Semester 5- Revised program</b>  |           | <b>Semester 6-Revised program</b>         |           |
|--------------------------------------------|-----------|-------------------------------------------|-----------|
| Course                                     | Credits   | Course                                    | Credits   |
| NURS 301 Health & Wellness :Maternal/Child | 4         | NURS 304 Health & Wellness: Complex Care  | 4         |
| NURS 300 Professional Nursing: Research    | 3         | NURS 305 Professional Nursing: Leadership | 3         |
| NURS 303 Nursing Practice                  | 6         | NURS 306 Nursing Practice                 | 6         |
| STATS 104 Statistics                       | 4         | Elective                                  | 3         |
| <b>Total</b>                               | <b>17</b> | <b>Total</b>                              | <b>16</b> |

- b. Class size limit: will be a maximum of 32 for NURS 301, NURS 300 and NURS 303 as these courses will be offered in the summer, fall and winter. NURS 304, NURS 305 and NURS 306 will be a maximum of 54, as the fast track & LPN Access join semester 6 in the fall.
  - c. Frequency of offering: All courses will be offered in the fall and winter. NURS 300, NURS 301 and NURS 303 will also be offered in the summer for the fast-track cohort.
  - 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?
  - There is a clinical component in NURS 303. It is evident in the time table. No additional funding is required.
  - There is a clinical component in NURS 306. It is evident in the timetable. No additional funding is required.
10. Estimate of the typical costs for this course, including textbooks and other materials:  
Textbooks are typically \$1000 in the first semester of the BSN Program. Texts purchased at the beginning of the program are used throughout the program.  
Tuition:
  - NURS 301- \$589.60 plus text
  - NURS 300- \$442.20 plus text
  - NURS 303- \$884.40
  - NURS 304- \$589.60
  - NURS 305- \$442.20

NURS 206- \$884.40

CWC Comments and Responses

The UEC Screening Subcommittee has reviewed these proposals and has the following comments:

**General:**

- Changes will need to be reviewed by Senate Budget Committee in addition to UEC.
- Evaluation section of course outlines are missing totals (i.e. “100%).  
Done
- Prerequisites will be changed for consistency with prerequisite guidelines (e.g. “Admission to the Bachelor of Science in Nursing program, NURS 204, NURS 205, and NURS 206.”)  
Done
- Is the increase in maximum enrolment to 56 correct?  
That is the correct enrolment. This is a combination of the 4 year, 3 year and LPN Access.

**NURS 301:**

- Title: suggest replacing “Maternal/Child” with “Mother and Child” or “Maternal/Filial” for symmetry.  
Maternal/Child is the language that is currently used in nursing.

**NURS 303:**

- Evaluation section indicates that “satisfactory clinical performance” is required. What does this mean? Should this be included (or is it?) in the evaluation break-down?  
The practicum part of the course is deemed satisfactory or unsatisfactory based on their performance in the field. The 60% pass is applied to the academic portion of the course which includes exams, clinical assignments and lab activities.

**NURS 304:**

- Potential disconnect between the course description and the learning outcomes. Suggest including more of a description of the complex care issues (palliative care, institutional issues) in the course description.  
End of life care is the umbrella nursing terminology which reflect palliative care.  
We will add the words “acute illness” as a descriptor of complex health challenges.

**NURS 305:**

- Course short title will be needed.  
We will add the short title: “Prof. Nursing: Leadership”
- Course description: suggest swapping (and potentially combining) the two sentences.

We will swap the sentences.

- Pre/co-requisites: are co-requisites necessary? Also, admission to the program should remain as a prerequisite, as this cannot be a co-requisite.

We will change this.

- PLAR section has not been completed.

This will be completed.

**NURS 306:**

- Evaluation section indicates that “satisfactory clinical performance” is required. What does this mean? Should this be included (or is it?) in the evaluation break-down?

The practicum part of the course is deemed satisfactory or unsatisfactory based on their performance in the field. The 60% pass is applied to the academic portion of the course which includes exams, clinical assignments and lab activities.

- Learning outcomes appear to be identical to NURS 306. Can a difference in level be indicated? Do you mean the same as N303? They are similar and some minor changes have been made.



ORIGINAL COURSE IMPLEMENTATION DATE:

REVISED COURSE IMPLEMENTATION DATE:

COURSE TO BE REVIEWED:

(six years after UEC approval)

Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

|                                                                                                                                                                                                                                                                                                                                                                    |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Code and Number:</b> NURS 300                                                                                                                                                                                                                                                                                                                            |                                                                                               | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Course Full Title:</b> Professional Nursing: Research                                                                                                                                                                                                                                                                                                           |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Course Short Title (if title exceeds 30 characters):</b> Prof. Nursing: Research                                                                                                                                                                                                                                                                                |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Faculty:</b> Faculty of Health Sciences                                                                                                                                                                                                                                                                                                                         |                                                                                               | <b>Department (or program if no department):</b> School of Health Studies; Bachelor of Science in Nursing                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Calendar Description:</b><br>This course will focus on the critique and application of research to support evidence-informed nursing practice. The concepts of communication and ethical and legal practice will be further explored.                                                                                                                           |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                    | Admission to the Bachelor of Science in Nursing program and NURS 204, NURS 205, and NURS 206. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                      | NURS 301 and NURS 303.                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                  |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br><br>Former course code/number:<br><br>Cross-listed with:<br><br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i> |                                                                                               | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>Transfer credit requested (OREg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br><br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---|------------------------------|--|------------------|--|------------------------|--|--------------------------------------------|--|----------------------------|----|--------------------------------------------------------|----|--------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Total Hours:</b> 45<br><br><b>Typical structure of instructional hours:</b><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Lecture hours</td> <td style="text-align: center; padding: 2px;">8</td> </tr> <tr> <td style="padding: 2px;">Seminars/tutorials/workshops</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Laboratory hours</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Field experience hours</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Experiential (practicum, internship, etc.)</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Online learning activities</td> <td style="text-align: center; padding: 2px;">15</td> </tr> <tr> <td style="padding: 2px;">Other contact hours: Concept based teaching activities</td> <td style="text-align: center; padding: 2px;">22</td> </tr> <tr> <td style="text-align: right; padding: 2px;"><b>Total</b></td> <td style="text-align: center; padding: 2px;"><b>45</b></td> </tr> </table> | Lecture hours                       | 8 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 15 | Other contact hours: Concept based teaching activities | 22 | <b>Total</b> | <b>45</b> | <b>Special Topics</b><br><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes,          repeat(s) <input type="checkbox"/> Yes, no limit<br><br><i>Note: The specific topic will be recorded when offered.</i><br><br><b>Maximum enrolment (for information only): 40</b><br><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.): Fall, Winter and Spring</b> |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 8                                   |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 15                                  |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Other contact hours: Concept based teaching activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 22                                  |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>45</b>                           |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Department / Program Head or Director:</b> Hannah MacDonald                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Date approved:</b> June 16, 2015 |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Date approved:</b> Nov. 20, 2015 |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Date of posting:</b>             |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Dean/Associate VP:</b> Joanne MacLean                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Date approved:</b>               |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Date of meeting:</b>             |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Learning Outcomes</b><br><br>Upon completion of the course, the student will be able to: <ol style="list-style-type: none"> <li>1. Examine the research process.</li> <li>2. Critique research studies using the skills of critical thinking.</li> <li>3. Apply evidence based research to nursing practice scenarios.</li> <li>4. Apply advanced communication skills when interacting with families and children.</li> <li>5. Integrate ethical, legal and social justice concepts in the nursing care of maternal child dyad, children and families.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Prior Learning Assessment and Recognition (PLAR)</b><br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, PLAR cannot be awarded for this course because                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Typical Instructional Methods</b> (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)<br><b>Lecture, group discussion, group work, online learning and simulation.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Grading system:</b> Letter Grades: <input checked="" type="checkbox"/> Credit/No Credit: <input type="checkbox"/> Labs to be scheduled independent of lecture hours: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| 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 |
| Lo-Biondo-Wood, G., & Haber, J., Cameron, C., & Singh, M.D.                                                                 | Nursing research in Canada: Methods, critical appraisal, and utilization | 3 <sup>rd</sup> | Toronto: Elsevier | 2013 |
| Perry, S. E., Hockenberry, M. J., Lowdermild, D. L., Keenan-Lindsay, L., & Wilson, D.                                       | Maternal child nursing care in Canada                                    | 1 <sup>st</sup> | Toronto: Elsevier | 2013 |

| Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.) |  |  |  |  |
|----------------------------------------------------------------------------------------------------|--|--|--|--|
| Course pack of selected readings.                                                                  |  |  |  |  |

| Typical Evaluation Methods and Weighting |     |                |     |                   |     |            |      |
|------------------------------------------|-----|----------------|-----|-------------------|-----|------------|------|
| Final exam:                              | 35% | Assignments:   | 25% | Midterm exam:     | 25% | Practicum: |      |
| Participation :                          | 15% | Lab work:      | %   | Field experience: | %   | Shop work: | %    |
| Critiques:                               | %   | Group Project: | %   | Other:            |     | Total:     | 100% |

**Details (if necessary):**

**Typical Course Content and Topics:**

Communication

- Family Communication
- Developmentally appropriate communication with children

Ethical Practice

- genetic testing (fetus and child)
- severely impaired newborns/children (fetus – child)
- Parent choices
- Immunization, abortion

Legal

- Duty to report child abuse
- Apprehension – neonate & child

Evidence informed

- Qualitative and Quantitative research process
- Research problems, questions, hypothesis
- Critiquing the literature review and theoretical framework
- Sampling and setting
- Data collection
- Data analysis
- Ethics in research
- Research utilization

Informatics

- data management related research

Social Justice

- Capacity building



ORIGINAL COURSE IMPLEMENTATION DATE:

REVISED COURSE IMPLEMENTATION DATE: May 2017

COURSE TO BE REVIEWED:  
(six years after UEC approval)

Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

|                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Code and Number:</b> NURS 301                                                                                                                                                                                                                                                                                                                            |  | <b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Course Full Title:</b> Health and Wellness: Maternal/Child                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Course Short Title (if title exceeds 30 characters):</b> Maternal/Child                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Faculty:</b> Faculty of Health Sciences                                                                                                                                                                                                                                                                                                                         |  | <b>Department (or program if no department):</b> School of Health Studies; Bachelor of Science in Nursing program                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Calendar Description:</b><br><br>In this course the concepts of health, environment, and person will be explored with a focus on the care of families during perinatal period and during childhood.                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                    |  | Admission to the Bachelor of Science in Nursing program and NURS 204, NURS 205, and NURS 206.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                      |  | NURS 300 and NURS 303.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br><br>Former course code/number:<br><br>Cross-listed with:<br><br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i> |  | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>Transfer credit requested (OREg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br><br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----|------------------------------|--|------------------|--|------------------------|--|--------------------------------------------|--|----------------------------|----|--------------------------------------------------------|----|--------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Total Hours:</b> 60<br><br><b>Typical structure of instructional hours:</b><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Lecture hours</td> <td style="width: 20%; text-align: center;">10</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 style="text-align: center;">20</td> </tr> <tr> <td>Other contact hours: Concept based learning activities</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: right;"><b>Total</b></td> <td style="text-align: center;"><b>60</b></td> </tr> </table> | Lecture hours                       | 10 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 20 | Other contact hours: Concept based learning activities | 30 | <b>Total</b> | <b>60</b> | <b>Special Topics</b><br><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><br><i>Note: The specific topic will be recorded when offered.</i> |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 20                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Other contact hours: Concept based learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 30                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>60</b>                           |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Maximum enrolment (for information only): 40</b><br><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> Fall, Winter and Spring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Department / Program Head or Director:</b> Hannah MacDonald                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Date approved:</b> June 16, 2015 |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Date approved:</b> Nov. 20, 2015 |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Date of posting:</b>             |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Dean/Associate VP:</b> Joanne MacLean                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Date approved:</b>               |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Date of meeting:</b>             |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Learning Outcomes</b><br>Upon successful completion of this course the students will be able to: <ol style="list-style-type: none"> <li>1. Examine individuals and families with a focus on growth and development during pregnancy and childhood</li> <li>2. Analyze physiological and psychosocial health concepts related to nursing care during pregnancy and childhood</li> <li>3. Analyze the impact of the environment on childbearing families and children</li> <li>4. Examine the development of health policy</li> <li>5. Explore alterations in family processes during perinatal period and childhood illness</li> </ol>                                                                                                                                                                                             |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Learning Outcomes Cont'd</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Prior Learning Assessment and Recognition (PLAR)</b><br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, PLAR cannot be awarded for this course because                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)</b><br>Lecture, group discussion, online instruction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Grading system:</b> Letter Grades: <input checked="" type="checkbox"/> Credit/No Credit: <input type="checkbox"/> Labs to be scheduled independent of lecture hours: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                        |    |              |           |                                                                                                                                                                                                                                                                                                                                                                                                              |

**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 |
|-----------------------------------------------------------------------------------|------------------------------------------------|--------------------------|--------------------------|------|
| Lilley, L. L., Harrington, S., Snyder, J. S.                                      | Pharmacology and the nursing process in Canada | 2 <sup>nd</sup>          | St Louis, MO: Mosby      | 2011 |
| Perry, S. E., Hokenberry, M.J., Lowdermld, D.L., Keenan-Lindsay, L., & Wilson, D. | Maternal child nursing care in Canada          | 1 <sup>st</sup>          | Toronto: Elsevier Canada | 2013 |
| Potter, P. A., & Perry, A. G.                                                     | Canadian fundamentals of nursing               | 5 <sup>th</sup>          | Toronto: Mosby           | 2014 |
|                                                                                   |                                                | <input type="checkbox"/> |                          |      |
|                                                                                   |                                                | <input type="checkbox"/> |                          |      |

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

Use this section for supplies and materials for all sections of this course.

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |     |             |   |
|----------------|-----|--------------|-----|-------------------|-----|-------------|---|
| Final exam:    | 40% | Assignments: | 20% | Midterm exam:     | 25% | Practicum:  |   |
| Quizzes/tests: | %   | Lab work:    | %   | Field experience: | %   | Shop work:  | % |
| Participation: | 15% |              |     | Other:            |     | Total: 100% |   |

**Details (if necessary):**

**Typical Course Content and Topics:**

1. Environment
  - o Child poverty
  - o Social and political supports
  - o Environmental factors that impact human development
  - o Home safety for children
  - o Health policy development and frameworks
  - o Canadian institute for health information
2. Person: Family
  - o Intro to family strengths assessment
  - o Effect of family on healthy child development
3. Person: Community/Population
  - o Community supports for families
4. Health: Culture
  - o Culturally safe care when caring for childbearing families
5. Health: Human Development
  - o Developmental stages from embryo to adolescent
  - o Changes in the female related to childbearing

- o Genetics: impact on development
- o Effects of illness on development
- 6. Health: Pain/Comfort
  - o Management of intrapartum and postpartum pain
  - o Assessment of pain in neonates, infants, children and adolescents
  - o Sleep-Rest
    - Neonate, infant, child and adolescent – normal patterns
    - New parent
- 7. Health Oxygenation & Perfusion
  - o Intrauterine to extrauterine oxygenation
  - o RSV
  - o SIDS
  - o Maternal hemorrhage
  - o Perfusion changes to newborn
  - o Jaundice
  - o Hypertension in pregnancy
- 8. Nutrition and Metabolism
  - o Nutritional needs of the neonate, infant, child and adolescent
  - o Type 1 diabetes
  - o Failure to thrive
  - o Gestational diabetes
- 9. Infection, Immunity and Thermoregulation
  - o Meningitis
  - o Maternal child infection
  - o Childhood immunizations
  - o Active/ passive immunity to fetus
  - o Neonatal thermoregulation
- 10. Mobility and Intracranial regulation
  - o CP
  - o Seizures
- 11. Fluid and Electrolytes and Acid base
  - o Dehydration
  - o Diarrhea
- 12. Reproduction and Sexuality
  - o Pregnancy – normal/abnormal, planned/unplanned
  - o Technologies (IFV)
  - o Infertility
  - o Contraception
  - o Sexuality – childbearing and adolescent
- 13. Health: Stress & Coping, Grief & Loss, Cellular Regulation and Cognition
  - o Hospitalized child
  - o Loss of a child or a child born with a disability
  - o Leukemia
  - o Neonatal abstinence syndrome
- 14. Health: Mood and Violence
  - o Postpartum mood disorders
  - o Adolescent mental health/self esteem
    - Eating Disorders
    - Depression and anxiety
      - Suicide
  - o Child abuse

\*Concept analysis will be applied to an unfolding family cases



ORIGINAL COURSE IMPLEMENTATION DATE: September 2006

REVISED COURSE IMPLEMENTATION DATE: May 2017

COURSE TO BE REVIEWED:  
(six years after UEC approval)

Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

|                                                                                                                                                                                                                                                                                                                                                                        |                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Code and Number:</b> NURS 303                                                                                                                                                                                                                                                                                                                                |                                                                                            | <b>Number of Credits:</b> 6 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Course Full Title:</b> Nursing Practice                                                                                                                                                                                                                                                                                                                             |                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                            |                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Faculty:</b> Faculty of Health Sciences                                                                                                                                                                                                                                                                                                                             |                                                                                            | <b>Department (or program if no department):</b> School of Health Studies; Bachelor of Science in Nursing program                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Calendar Description:</b><br>Nursing practice will include simulation, laboratory, and clinical experiences. Students will manage the nursing care of individuals and families in perinatal and child health settings.                                                                                                                                              |                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                        | Admission to the Bachelor of Nursing Science program and NURS 204, NURS 205, and NURS 206. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                          | NURS 300 and NURS 301.                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                      |                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br><br>Former course code/number:<br><br>Cross-listed with:<br><br>Equivalent course(s):<br><br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i> |                                                                                            | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br><br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--|------------------------------|--|------------------|----|------------------------|-----|--------------------------------------------|--|------------------------------------------|----|----------------------|--|--------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Total Hours:</b> 210<br><br><b>Typical structure of instructional hours:</b><br><table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td></td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">15</td></tr> <tr><td>Field experience hours</td><td style="text-align: center;">180</td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities ( simulation)</td><td style="text-align: center;">15</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>210</b></td></tr> </table>                                                                               | Lecture hours                       |  | Seminars/tutorials/workshops |  | Laboratory hours | 15 | Field experience hours | 180 | Experiential (practicum, internship, etc.) |  | Online learning activities ( simulation) | 15 | Other contact hours: |  | <b>Total</b> | <b>210</b> | <b>Special Topics</b><br><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes,      repe160at(s) <input type="checkbox"/> Yes, no limit<br><br><i>Note: The specific topic will be recorded when offered.</i><br><br><b>Maximum enrolment (for information only): 40</b><br><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.): Fall, Winter and Spring</b> |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 15                                  |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 180                                 |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Online learning activities ( simulation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15                                  |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>210</b>                          |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Department / Program Head or Director:</b> Hannah MacDonald                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Date approved:</b> June 16, 2015 |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Date approved:</b> Nov. 20, 2015 |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Date of posting:</b>             |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Dean/Associate VP:</b> Joanne MacLean                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Date approved:</b>               |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Date of meeting:</b>             |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Learning Outcomes</b><br>Upon successful completion of this course the students will be able to: <ol style="list-style-type: none"> <li>1. Apply the nursing process when caring for individuals and families.</li> <li>2. Utilize therapeutic communication skills when caring for individuals and families.</li> <li>3. Utilize principles of teaching and learning with the individual and family.</li> <li>4. Collaborate as a member of the health care team.</li> <li>5. Demonstrate leadership skills.</li> <li>6. Utilize critical inquiry skills to formulate clinical judgments.</li> <li>7. Apply theory to actual and potential ethical and legal issues.</li> <li>8. Perform within UFV and agency policies, CRNBC Professional Standards, and Practice Standards.</li> <li>9. Demonstrate progression in clinical performance.</li> </ol> |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Prior Learning Assessment and Recognition (PLAR)</b><br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, PLAR cannot be awarded for this course because                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)</b><br>Lab practice, online learning, simulation, practicum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Grading system:</b> Letter Grades: <input type="checkbox"/> Credit/No Credit: <input checked="" type="checkbox"/> Labs to be scheduled independent of lecture hours: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |  |                              |  |                  |    |                        |     |                                            |  |                                          |    |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| 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              |     |            |           |
| Curren, A. M.                                                                                                                                                                                     | Math for meds                                                                               | 11 <sup>th</sup> | San Diego: W.I. Publications                    | 2015              |     |            |           |
| Deglin, J.H., & Vallerand, A.H.                                                                                                                                                                   | Davis drug guide for nurses                                                                 | 12 <sup>th</sup> | Philadelphia: F. A. Davis                       | 2011              |     |            |           |
| Elkin, M.K., Perry, A.G., & Potter, P.A.                                                                                                                                                          | Nursing interventions and clinical skills                                                   | 5 <sup>th</sup>  | St. Louis, MO: Mosby                            | 2011              |     |            |           |
| .                                                                                                                                                                                                 |                                                                                             |                  |                                                 |                   |     |            |           |
| Jarvis, C.                                                                                                                                                                                        | A pocket guide to physical examination and health assessment                                | 2 <sup>nd</sup>  | St. Louis: W. B. Saunders                       | 2014              |     |            |           |
| Lewis, S.M., Heitkemper, M.M., & Dirksen, S.R.                                                                                                                                                    | Medical surgical nursing in Canada                                                          | 3 <sup>rd</sup>  | St. Louis: Mosby                                | 2013              |     |            |           |
| Lilley, L.L., Harrington, S., & Snyder, J. S.                                                                                                                                                     | Pharmacology in the nursing process in Canada                                               | 2 <sup>nd</sup>  | St. Louis: Mosby                                | 2011              |     |            |           |
| Perry, S.e., Hockenberry, M.J., Lowdermild, D.L., Keenan-Lindsay, L., & Wilson, D.                                                                                                                | Maternal child nursing care in Canada                                                       | 1 <sup>st</sup>  | Toronto: Elsevier Canada                        | 2013              |     |            |           |
| Porth, C. M.                                                                                                                                                                                      | Essentials of pathophysiology                                                               | 4 <sup>th</sup>  | Philadelphia: Wolters Kluwer Health, Lippincott | 2015              |     |            |           |
| Potter, P. A., & Perry, A. G.                                                                                                                                                                     | Canadian fundamentals of nursing                                                            | 5 <sup>th</sup>  | Toronto: Mosby                                  | 2014              |     |            |           |
| Van Leeuwen, A. M., & Poelhuis-Leth, P.J.                                                                                                                                                         | Davis's comprehensive handbook of laboratory and diagnostic tests with nursing implications | 5 <sup>th</sup>  | Philadelphia: F. A. Davis                       | 2013              |     |            |           |
| Venes, D. (Ed.)                                                                                                                                                                                   | Taber's cyclopedic medical dictionary                                                       | 22 <sup>nd</sup> | Philadelphia: F. A. Davis                       | 2013              |     |            |           |
| Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)                                                                                                |                                                                                             |                  |                                                 |                   |     |            |           |
| Nursing uniform and shoes                                                                                                                                                                         |                                                                                             |                  |                                                 |                   |     |            |           |
| Typical Evaluation Methods and Weighting                                                                                                                                                          |                                                                                             |                  |                                                 |                   |     |            |           |
| Final exam:                                                                                                                                                                                       | 40%                                                                                         | Assignments:     | 40%                                             | Midterm exam:     | 20% | Practicum: | Pass/Fail |
| Quizzes/tests:                                                                                                                                                                                    | %                                                                                           | Lab work:        | %                                               | Field experience: | %   | Shop work: | %         |
| Other:                                                                                                                                                                                            |                                                                                             | Other:           |                                                 | Other:            |     | Total:     | 100%      |
| Details (if necessary): Students must achieve 60% in the academic evaluations and satisfactory clinical performance to achieve credit in the course.                                              |                                                                                             |                  |                                                 |                   |     |            |           |
| Clinical indicators, Clinical assignments, and skill performance                                                                                                                                  |                                                                                             |                  |                                                 |                   |     |            |           |
| Typical Course Content and Topics:                                                                                                                                                                |                                                                                             |                  |                                                 |                   |     |            |           |
| Classroom/Laboratory/Simulation                                                                                                                                                                   |                                                                                             |                  |                                                 |                   |     |            |           |
| Assessment – maternal (antepartum I, postpartum), newborn and pediatric<br>IV's – pediatric considerations<br>Feeding infants and children<br>Traction/Cast care (self-directed)<br>Labor support |                                                                                             |                  |                                                 |                   |     |            |           |
| Clinical                                                                                                                                                                                          |                                                                                             |                  |                                                 |                   |     |            |           |
| – Clinical experiences include maternity and pediatric units in hospital settings as well as relevant community placements.                                                                       |                                                                                             |                  |                                                 |                   |     |            |           |
| – The clinical includes 6 weeks of pediatrics and 6 weeks of maternity – 45 of these hours will be in community settings                                                                          |                                                                                             |                  |                                                 |                   |     |            |           |


**ORIGINAL COURSE IMPLEMENTATION DATE:** September 2004

**REVISED COURSE IMPLEMENTATION DATE:** September 2017

**COURSE TO BE REVIEWED:**  
(six years after UEC approval)

**Course outline form version: 09/15/14**

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------|--|------------------|--|------------------------|--|--------------------------------------------|--|----------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> NURS 304                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |    | <b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Course Full Title:</b> Health and Wellness: Complex Care                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Complex Care                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Faculty:</b> Faculty of Health Sciences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    | <b>Department (or program if no department):</b> School of Health Studies; Bachelor of Science in Nursing                                                                                                                                                                                                                                                                                                                                                                                                                        |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Calendar Description:</b><br><br>In this course, health, environment, and person will be explored with a focus on the care of individuals and families experiencing complex health challenges including acute care, end of life care, and symptom management.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |    | Admission to the Bachelor of Science in Nursing program and NURS 300, NURS 301, and NURS 303.                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    | NURS 305 and NURS 306.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <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:</b> 60<br><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="padding: 2px;">Lecture hours</td> <td style="text-align: center; padding: 2px;">10</td> </tr> <tr> <td style="padding: 2px;">Seminars/tutorials/workshops</td> <td style="text-align: center; padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Laboratory hours</td> <td style="text-align: center; padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Field experience hours</td> <td style="text-align: center; padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Experiential (practicum, internship, etc.)</td> <td style="text-align: center; padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Online learning activities</td> <td style="text-align: center; padding: 2px;">20</td> </tr> </table> |    | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 20 | <b>Special Topics</b><br><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 20 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                |                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other contact hours: Concept based learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 30                                                                                             | Maximum enrolment (for information only): 56<br><br>Expected frequency of course offerings (every semester, annually, every other year, etc.): Fall and Winter |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>60</b>                                                                                      |                                                                                                                                                                |
| Department / Program Head or Director: Hannah MacDonald                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                | Date approved: June 16, 2015                                                                                                                                   |
| Faculty Council approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                | Date approved: Nov. 20, 2015                                                                                                                                   |
| Campus-Wide Consultation (CWC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                | Date of posting:                                                                                                                                               |
| Dean/Associate VP: Joanne MacLean                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                | Date approved:                                                                                                                                                 |
| Undergraduate Education Committee (UEC) approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                | Date of meeting:                                                                                                                                               |
| <b>Learning Outcomes</b><br><br>Upon successful completion of this course the students will be able to: <ol style="list-style-type: none"> <li>1. Integrate physiological and psychosocial health concepts as they relate to individuals.</li> <li>2. Explore alterations in family processes when individuals experience acute illness or face end of life.</li> <li>3. Analyze the impact of environment on the experience of the individual who is acutely ill or at the end of life.</li> <li>4. Plan nursing care for individuals and families experiencing complex health challenges.</li> <li>5. Examine the continuum of care of individuals and families experiencing end of life.</li> </ol> |                                                                                                |                                                                                                                                                                |
| <b>Prior Learning Assessment and Recognition (PLAR)</b><br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, PLAR cannot be awarded for this course because                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                |                                                                                                                                                                |
| <b>Typical Instructional Methods</b> (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)<br><b>Lecture, Discussion, case studies, Group work, online instruction</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                |                                                                                                                                                                |
| <b>Grading system:</b> Letter Grades: <input checked="" type="checkbox"/> Credit/No Credit: <input type="checkbox"/> Labs to be scheduled independent of lecture hours: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                |                                                                                                                                                                |
| <b>NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                |                                                                                                                                                                |
| <b>Typical Text(s) and Resource Materials</b> (if more space is required, download Supplemental Texts and Resource Materials form)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                |                                                                                                                                                                |
| <b>Author (surname, initials)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Title (article, book, journal, etc.)</b>                                                    | <b>Current ed.    Publisher    Year</b>                                                                                                                        |
| Lewis, S. M.,<br>Heitkemper, M. M., &<br>Dirksen, S. R.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Medical surgical nursing in Canada                                                             | 3 <sup>rd</sup> St. Louis: Mosby    2013                                                                                                                       |
| Lilley, L. L., Harrington,<br>S., & Snyder, J. S.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Pharmacology and the nursing process in Canada                                                 | 2 <sup>nd</sup> St. Louis: Mosby    2011                                                                                                                       |
| Potter P. A. & Perry, A.<br>G.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Canadian fundamentals of nursing                                                               | 5 <sup>th</sup> Toronto: Mosby    2014                                                                                                                         |
| Leeuwen, A, &<br>Poelhuis-Leth, P. J.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Davis's comprehensive handbook of laboratory and<br>diagnostic tests with nursing implications | 5 <sup>th</sup> Philadelphia: R. A. Davis    2013                                                                                                              |
| <b>Required Additional Supplies and Materials</b> (software, hardware, tools, specialized clothing, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                |                                                                                                                                                                |

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |     |            |      |
|----------------|-----|--------------|-----|-------------------|-----|------------|------|
| Final exam:    | 40% | Assignments: | 20% | Midterm exam:     | 25% | Practicum: |      |
| Quizzes/tests: | %   | Lab work:    | %   | Field experience: | %   | Shop work: | %    |
| Participation: | 15% | Other        |     | Other:            |     | Total:     | 100% |

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

1. Health: Culture, Spirituality, Grief/loss, Stress/Coping
  - Health and illness beliefs around death and dying (application of cultural safety)
  - Spiritual wellbeing at end of life
  - Spiritual distress
  - Death and dying
  - Death of a family member
  - CAMs
2. Health: Fluid & Electrolytes and Elimination
  - Ascites
  - Liver failure
  - Acute and chronic renal failure
3. Health: Oxygenation and Perfusion
  - Respiratory distress syndrome
  - Cardiac dysrhythmias
  - ACS – STEMI
  - Disseminated intravascular coagulation
  - Cardiomyopathy
4. Health: Infection
  - Hepatitis
  - Endocarditis
5. Health: Mobility & Sensory Perception
  - ALS
  - Spinal cord injury/compression
6. Health: Cellular regulation, Nutrition, Metabolism
  - Ovarian cancer with metastatic disease
  - Pancreatitis
  - End of life cachexia
7. Health: Pain/ comfort
  - Neuropathic pain
  - Complex pain syndromes
  - Sleep/ rest
  - Significance at end of life
8. Health: Intracranial Regulation, Thermoregulation, Cognition and Tissue Integrity
  - Encephalopathy
  - Multiple injuries
  - Burns
  - Ostomies
  - Complex wounds
  - Brain Injury
  - Alterations related to metastatic disease
9. Person: Family and Community
  - Families: end of life care (role changes at end of life)
  - Community resources for grief and loss
10. Environment: Socio-economic, Political and Health care
  - End of life support
  - Palliative care program
  - Access and choice related to care
  - End of life care continuum


**ORIGINAL COURSE IMPLEMENTATION DATE:** September 2004

**REVISED COURSE IMPLEMENTATION DATE:** September 2017

**COURSE TO BE REVIEWED:**  
(six years after UEC approval)

**Course outline form version: 09/15/14**

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------|--|------------------|--|------------------------|--|--------------------------------------------|--|----------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Course Code and Number:</b> NURS 305                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Course Full Title:</b> Professional Nursing: Leadership                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Course Short Title (if title exceeds 30 characters):</b> Prof. Nursing: Leadership                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Faculty:</b> Faculty of Health Sciences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    | <b>Department (or program if no department):</b> School of Health Studies; Bachelor of Science in Nursing                                                                                                                                                                                                                                                                                                                                                                                                                                    |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Calendar Description:</b><br>This course will focus on the development of advanced nursing leadership skills. In this course students will integrate previously-learned professional nursing concepts into complex nursing care scenarios.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    | Admission to the Bachelor of Science in Nursing program and NURS 300, NURS, 301, and NURS 303.                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    | NURS 304 and NURS 306.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br><br>Former course code/number:<br><br>Cross-listed with:<br><br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br><br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Total Hours:</b> 45<br><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="padding: 2px;">Lecture hours</td> <td style="text-align: center; padding: 2px;">8</td> </tr> <tr> <td style="padding: 2px;">Seminars/tutorials/workshops</td> <td style="text-align: center; padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Laboratory hours</td> <td style="text-align: center; padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Field experience hours</td> <td style="text-align: center; padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Experiential (practicum, internship, etc.)</td> <td style="text-align: center; padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Online learning activities</td> <td style="text-align: center; padding: 2px;">15</td> </tr> </table> |    | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8 | Seminars/tutorials/workshops |  | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities | 15 | <b>Special Topics</b><br><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><br><i>Note: The specific topic will be recorded when offered.</i> |  |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 8  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 15 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |                              |  |                  |  |                        |  |                                            |  |                            |    |                                                                                                                                                                                                                                                                                                                                                                                                              |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                           |                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other contact hours: Concept based learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 22                                                                        | Maximum enrolment (for information only): 56<br><br>Expected frequency of course offerings (every semester, annually, every other year, etc.): Fall and Winter |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>45</b>                                                                 |                                                                                                                                                                |
| Department / Program Head or Director: Hannah MacDonald                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                           | Date approved: June 16, 2015                                                                                                                                   |
| Faculty Council approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                           | Date approved: Nov. 20, 2015                                                                                                                                   |
| Campus-Wide Consultation (CWC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                           | Date of posting:                                                                                                                                               |
| Dean/Associate VP: Joanne MacLean                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                           | Date approved:                                                                                                                                                 |
| Undergraduate Education Committee (UEC) approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                           | Date of meeting:                                                                                                                                               |
| <b>Learning Outcomes</b><br><br>Upon successful completion of this course the students will be able to: <ol style="list-style-type: none"> <li>1. Examine components of a healthy organizational culture.</li> <li>2. Apply conflict resolution strategies to complex health care scenarios.</li> <li>3. Discuss ethical and legal aspects related to end of life care.</li> <li>4. Apply advanced leadership skills in complex health care scenarios.</li> <li>5. Analyze a clinical policy/procedure integrating current research.</li> <li>6. Discuss quality improvement processes in health care.</li> </ol> |                                                                           |                                                                                                                                                                |
| <b>Prior Learning Assessment and Recognition (PLAR)</b><br>X Yes <input type="checkbox"/> No, PLAR cannot be awarded for this course because                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                           |                                                                                                                                                                |
| <b>Typical Instructional Methods</b> (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)<br><b>Lecture, Discussion, Student presentation, Group work</b>                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                           |                                                                                                                                                                |
| <b>Grading system:</b> Letter Grades: <input checked="" type="checkbox"/> Credit/No Credit: <input type="checkbox"/> Labs to be scheduled independent of lecture hours: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                       |                                                                           |                                                                                                                                                                |
| <b>NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                           |                                                                                                                                                                |
| <b>Typical Text(s) and Resource Materials</b> (if more space is required, download Supplemental Texts and Resource Materials form)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                           |                                                                                                                                                                |
| <b>Author (surname, initials)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Title (article, book, journal, etc.)</b>                               | <b>Current ed.    Publisher    Year</b>                                                                                                                        |
| Arnold, E. C., & Boggs, K. U.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Interpersonal relationships: Professional communication skills for nurses | 6 <sup>th</sup> St. Louis: W. B. Saunders    2011                                                                                                              |
| Kelly, P., & Crawford, H.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Nursing leadership and Management                                         | 2 <sup>nd</sup> ed.    Nelson Education Ltd.    2013                                                                                                           |
| Potter P. A. & Perry, A. G.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Canadian fundamentals of nursing                                          | 5 <sup>th</sup> ed.    Toronto: Mosby    2014                                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                           | <input type="checkbox"/>                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                           | <input type="checkbox"/>                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                           | <input type="checkbox"/>                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                           | <input type="checkbox"/>                                                                                                                                       |
| <b>Required Additional Supplies and Materials</b> (software, hardware, tools, specialized clothing, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                           |                                                                                                                                                                |

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |     |            |      |
|----------------|-----|--------------|-----|-------------------|-----|------------|------|
| Final exam:    | 35% | Assignments: | 25% | Midterm exam:     | 30% | Practicum: |      |
| Quizzes/tests: | %   | Lab work:    | %   | Field experience: | %   | Shop work: | %    |
| Case Study:    | 10% | Other:       |     | Other:            |     | Total:     | 100% |

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

1. Collaboration and Communication
  - o Conflict resolution (bedside with the individual and family, and interdisciplinary)
  - o Mediation
  - o Advanced collaboration skills
    - Interdisciplinary rounds
      - Physician orders
      - Referrals
2. Ethics
  - o End of life decision making
3. Legal
  - o physician-assisted death
  - o advanced directives related to end of life
4. Leadership
  - Supervision of HCP
    - o mentoring/coaching
    - o patient assignments (care coordination)
5. Safety
  - o Quality Improvement
  - o Nursing care audits
  - o Chart audit
6. Evidence informed/research
  - o Process of policy development



**ORIGINAL COURSE IMPLEMENTATION DATE:** September 2004

**REVISED COURSE IMPLEMENTATION DATE:** September 2017

**COURSE TO BE REVIEWED:**  
(six years after UEC approval)

**Course outline form version: 09/15/14**

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

|                                                                                                                                                                                                                                                                                                                                                                    |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Code and Number:</b> NURS 306                                                                                                                                                                                                                                                                                                                            |                                                                                               | <b>Number of Credits:</b> 6 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Course Full Title:</b> Nursing Practice                                                                                                                                                                                                                                                                                                                         |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                        |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Faculty:</b> Faculty of Health Sciences                                                                                                                                                                                                                                                                                                                         |                                                                                               | <b>Department (or program if no department):</b> School of Health Studies; Bachelor of Science in Nursing program                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Calendar Description:</b><br>Nursing Practice will include laboratory, simulation, and clinical experiences. Students will manage the complex nursing care of patients in medical/palliative health care settings.                                                                                                                                              |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                    | Admission to the Bachelor of Science in Nursing Program and NURS 300, NURS 301, and NURS 303. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                      | NURS 304 and NURS 305.                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Pre/corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                  |                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Equivalent Courses (cannot be taken for additional credit)</b><br><br>Former course code/number:<br><br>Cross-listed with:<br><br>Equivalent course(s):<br><i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i> |                                                                                               | <b>Transfer Credit</b><br>Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>Transfer credit requested (OReg to submit to BCCAT):<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form)<br><br>Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--|------------------------------|--|------------------|----|------------------------|-----|--------------------------------------------|--|----------------------------|---|----------------------|--|--------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Total Hours:</b> 210<br><br><b>Typical structure of instructional hours:</b><br><table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td></td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">21</td></tr> <tr><td>Field experience hours</td><td style="text-align: center;">180</td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">9</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>210</b></td></tr> </table>                                                                                                                                                                                                     | Lecture hours                       |  | Seminars/tutorials/workshops |  | Laboratory hours | 21 | Field experience hours | 180 | Experiential (practicum, internship, etc.) |  | Online learning activities | 9 | Other contact hours: |  | <b>Total</b> | <b>210</b> | <b>Special Topics</b><br><br>Will the course be offered with different topics?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>If yes, different lettered courses may be taken for credit:<br><input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit<br><br><i>Note: The specific topic will be recorded when offered.</i><br><br><b>Maximum enrolment (for information only): 56</b><br><br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.): Fall and Winter</b> |
| Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 21                                  |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 180                                 |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 9                                   |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>210</b>                          |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Department / Program Head or Director:</b> Hannah MacDonald                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Date approved:</b> June 16, 2015 |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Date approved:</b> Nov. 20, 2015 |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Date of posting:</b>             |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Dean/Associate VP:</b> Joanne MacLean                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Date approved:</b>               |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Date of meeting:</b>             |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Learning Outcomes</b><br>Upon successful completion of this course students will be able to: <ol style="list-style-type: none"> <li>1. Apply the nursing process when caring for individuals and families experiencing complex health challenges.</li> <li>2. Utilize therapeutic communication skills when caring for individuals and families.</li> <li>3. Utilize principles of teaching and learning with the individual and family.</li> <li>4. Collaborate as a member of the health care team.</li> <li>5. Utilize critical inquiry skills to formulate clinical judgments.</li> <li>6. Perform within UFV and agency policies, CRNBC Professional Standards, and Practice Standards.</li> <li>7. Utilize ethical decision making frameworks in selected situations.</li> <li>8. Apply relevant legislation to clinical situations.</li> <li>9. Demonstrate leadership skills.</li> <li>10. Demonstrate progression in clinical performance.</li> </ol> |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Prior Learning Assessment and Recognition (PLAR)</b><br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, PLAR cannot be awarded for this course because                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Typical Instructional Methods</b> (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)<br>Lecture, lab demonstration, skill practice, clinical/community experiences, small group seminar, simulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Grading system:</b> Letter Grades: <input type="checkbox"/> Credit/No Credit: <input checked="" type="checkbox"/> Labs to be scheduled independent of lecture hours: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |  |                              |  |                  |    |                        |     |                                            |  |                            |   |                      |  |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| 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 |             |           |
| Curren, A. M.                                                                                                                                        |     | Math for meds: Dosages and solutions                                                        | 11 <sup>th</sup> | San Diego: W.I. Publications                    | 2015 |             |           |
| Deglin, J. H., & Vallerand, A. H.                                                                                                                    |     | Davis's drug guide for nurses                                                               | 12 <sup>th</sup> | Philadelphia: F. A. Davis                       | 2011 |             |           |
| Elkin, M. K., Perry, A G., & Potter, P. A.                                                                                                           |     | Nursing interventions and clinical skills                                                   | 5 <sup>th</sup>  | St Louis: Mosby                                 | 2011 |             |           |
| Jarvis, C.                                                                                                                                           |     | A pocket guide to physical examination and health assessment                                | 2 <sup>nd</sup>  | St. Louis: W. B. Saunders                       | 2014 |             |           |
| Lewis, S. M., Heitkemper, M. M., & Dirksen, S. R.                                                                                                    |     | Medical surgical nursing in Canada                                                          | 3 <sup>rd</sup>  | St. Louis: Mosby                                | 2013 |             |           |
| Lilley, L. L., Harrington, S., & Snyder, J. S.                                                                                                       |     | Pharmacology in the nursing process in Canada                                               | 2 <sup>nd</sup>  | St. Louis: Mosby                                | 2011 |             |           |
| Porth, C. M.                                                                                                                                         |     | Essentials of pathophysiology                                                               | 4 <sup>th</sup>  | Philadelphia: Wolters Kluwer Health, Lippincott | 2015 |             |           |
| Potter, P. A., & Perry, A. G.                                                                                                                        |     | Canadian fundamentals of nursing                                                            | 5 <sup>th</sup>  | Toronto: Mosby                                  | 2014 |             |           |
| Van Leeuwen, A. M., & Poelhuis-Leth, P. J.                                                                                                           |     | Davis's comprehensive handbook of laboratory and diagnostic tests with nursing implications | 5 <sup>th</sup>  | Philadelphia: F. A. Davis                       | 2013 |             |           |
| Venes, D. (Ed.)                                                                                                                                      |     | Taber's cyclopedic medical dictionary                                                       | 22 <sup>nd</sup> | Philadelphia: F. A. Davis Company               | 2013 |             |           |
| Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)                                                   |     |                                                                                             |                  |                                                 |      |             |           |
| Typical Evaluation Methods and Weighting                                                                                                             |     |                                                                                             |                  |                                                 |      |             |           |
| Final exam:                                                                                                                                          | 40% | Assignments:                                                                                | 20%              | Midterm exam:                                   | 40%  | Practicum:  | Pass/Fail |
| Quizzes/tests:                                                                                                                                       | %   | Lab work:                                                                                   | %                | Field experience:                               | %    | Shop work:  | %         |
| Other:                                                                                                                                               |     | Other:                                                                                      |                  | Other:                                          |      | Total: 100% |           |
| Details (if necessary): Students must achieve 60% in the academic evaluations and satisfactory clinical performance to achieve credit in the course. |     |                                                                                             |                  |                                                 |      |             |           |
| Clinical indicators, Clinical assignments, and skill performance                                                                                     |     |                                                                                             |                  |                                                 |      |             |           |
| Typical Course Content and Topics:                                                                                                                   |     |                                                                                             |                  |                                                 |      |             |           |
| Laboratory:                                                                                                                                          |     |                                                                                             |                  |                                                 |      |             |           |
| Complex Wound Care                                                                                                                                   |     |                                                                                             |                  |                                                 |      |             |           |
| Ostomy Care                                                                                                                                          |     |                                                                                             |                  |                                                 |      |             |           |
| Tracheostomy Care                                                                                                                                    |     |                                                                                             |                  |                                                 |      |             |           |
| Cardiac Arrest (Code)                                                                                                                                |     |                                                                                             |                  |                                                 |      |             |           |
| Chest Tubes                                                                                                                                          |     |                                                                                             |                  |                                                 |      |             |           |
| Central Venous Catheters, Total Parenteral Nutrition (TPN)                                                                                           |     |                                                                                             |                  |                                                 |      |             |           |
| Subcutaneous Infusion (on-line)                                                                                                                      |     |                                                                                             |                  |                                                 |      |             |           |
| Clinical:                                                                                                                                            |     |                                                                                             |                  |                                                 |      |             |           |
| - Clinical experience includes acute medical palliative units and community settings                                                                 |     |                                                                                             |                  |                                                 |      |             |           |
| - The clinical includes 12 weeks of instruction (180hrs)                                                                                             |     |                                                                                             |                  |                                                 |      |             |           |

**Memo for Program Changes**

To: UEC/ Campus Wide Consultation

From: Samantha Hampton, Co-Chair of BSN Task Force Committee; Nancy Goad, BSN Program Coordinator

Date: \_\_\_\_\_, 2015

**Subject: Program change Bachelor of Science in Nursing – Addition of NURS 300 & NURS 305, Discontinuation of NURS 220, NURS 211, NURS 310, NURS 307 and HSC 312**

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):

Discontinued Courses:

In an effort to remove redundant time in the clinical setting and to enhance student learning, the nursing faculty have decided that discontinuing NURS 220 (a clinical consolidation course) and increasing clinical hours across the program, will better support student learning.

NURS 211 will be discontinued as of September 2016, as there is no longer maternity content or medicine in year 1. The content now comes later in the program. PN access student will go directly into year two (semester 3) more seamlessly.

HSC 310 will be discontinued as of September 2017, as the ethics content has been integrated across the revised BSN program with a focus in semester 4 (year 2 of the program).

HSC 312 will be discontinued as of September 2017. The content from that course has been integrated across the BSN program in the revised curriculum.

NURS 307 will be discontinued September 2017 as the content has been integrated throughout the revised curriculum with some content moving to NURS 300.

Addition of Courses:

NURS 300 is a new professional nursing course that integrates some of the NURS 307 research content along with other professional nursing concepts. This course will be implemented Summer of 2017.

NURS 305 is a professional nursing course that focuses on leadership in nursing. With the review of the BSN program, it was felt that our graduates require more education in leadership to keep up with a changing health care system. The implementation date for this course is Summer 2017.

Changes to reflect second-year course changes already approved:

UEC approved course changes in January which still need to be reflect in the program. These are:

- Removal of NURS 120 from Semester II
- Removal of NURS 211 from Semester III
- Replacement of HSC 210 with HSC 211 in Semester III
- Removal of NURS 220, 230, and HSC 212 from Semester IV

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

The BSN faculty spent time reviewing our program outcomes to ensure that they aligned with the Institutional Learning Outcomes.

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

In our nursing courses we have a strong diversity focus and Aboriginal health and healing practices are emphasized.

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

There will be no additional resources 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?

There will be no negative impact to students. There will be no change in student enrolment

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?

We are doing an extensive revision of our BSN program. Once all program changes have been made our program credits will change from 133 to 132.

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.)

None are necessary

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 will be no change in required or elective courses from other disciplines

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

Memo is attached to this e-mail.



*The Faculty of Health Sciences*

## **Memo**

To: Faculty Council, Health Sciences  
Undergraduate Education Committee

From: Joanne MacLean, PhD  
Dean, Faculty of Health Sciences

Date: March 1st, 2016

Re: BSN Year 3 Curriculum Changes

---

I am writing to confirm that budgetary implications of the proposed changes to the BSN curriculum have been considered and will be addressed within the Faculty of Health Sciences budget. Changes included within the overall curriculum mapping will include a decrease in program credits from 133 to 132 over the 4 years of the program. This change will not fully present until full implementation of the new curriculum which is in roll-out of year 1 and 2. Presently, approval for the deletion of HSC 310, HSC 312, NURS 211, NURS 220 and NURS 307, as well as revision of NURS 300, 301, 303 – 306 inclusive is requested and has my support.

Should you require additional information, please do not hesitate to contact me.

A handwritten signature in blue ink, appearing to read "Joanne MacLean", with a stylized flourish at the end.

# MEMO



To: UEC  
Cc: Rod McLeod; Dr. Sylvie Murray; Dr. Lucy Lee; Dr. Jacqueline Nolte  
From: Dr. Michelle Rhodes, Chair, Environmental Studies Program Working Group  
Date: June 8, 2016  
Re: Proposed Bachelor of Environmental Studies, and Bachelor of Environmental Studies (Natural Sciences)

---

The Environmental Studies Program Working Group (PWG) is seeking approval from UEC for a new degree program: **Bachelor of Environmental Studies (BES)**. The program proposal was presented at College of Arts Council on April 22 and recommended for approval. It was reviewed at UEC Screening subcommittee on May 26. Comments and responses are attached.

The BES is one of two new credentials being proposed as part of this program – the other, a Bachelor of Environmental Studies (Natural Sciences), was submitted to the Faculty of Science because of its science content and nomenclature. It was recommended for approval at the February 5<sup>th</sup> Science Faculty Council meeting.

The BES program will be administered by the Department of Geography and the Environment in the College of Arts.

Also submitted for approval are five new core courses created specifically for this program (ENV course code).

**Note:** *The program proposals and additional documents are available in S:\Groups\UEC\2016-06-07... and in the shared UEC Dropbox folder.*

**Program summary:**

The BES is structured around a primary core of courses that introduces students to the study of human-environment relationships, environmental thought and change, and strategies for environmental research and problem-solving. This core is complemented by skills-focused courses (e.g. statistics, communications, research, etc.) and courses in three breadth areas (society and culture; political economy; and natural sciences). The Natural Sciences designation requires additional science-based courses.

**Concept Paper:**

This program was approved for development as part of the 2012, 2013 and 2014 Update to the Education Plan.



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 11/22/13

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

**Course Code and Number:** ENV 200

**Number of Credits:** 4 [Course credit policy \(105\)](#)

**Course Full Title:** Bioregional Communities  
**Course Short Title:**

**Faculty:** Faculty of Social Sciences

**Department (or program if no department):** Geography and the Environment

### Calendar Description:

Uses the Fraser Lowlands as a laboratory for the development of multidisciplinary and hands-on approaches to defining our bioregion and the ecological and cultural communities within it. Explores sociocultural, scientific, and economic expressions of sustainability within regional geographic contexts. Field trips outside of class time will be required.

**Prerequisites (or NONE):** 18 university-level credits including GEOG 111.

**Corequisites (if applicable, or NONE):**

**Pre/corequisites (if applicable, or NONE):**

### Equivalent Courses (cannot be taken for additional credit)

Former course code/number:

Cross-listed with:

Equivalent course(s):

*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.*

### Transfer Credit

Transfer credit already exists: ☐ Yes ☒ No

Transfer credit requested (OREg to submit to BCCAT):

☒ Yes ☐ No (Note: If yes, fill in transfer credit form)

Resubmit revised outline for articulation: ☐ Yes ☐ No

To find out how this course transfers, see [bctransferguide.ca](http://bctransferguide.ca).

**Total Hours:** 60

### Typical structure of instructional hours:

|                                            |           |
|--------------------------------------------|-----------|
| Lecture hours                              | 15        |
| Seminars/tutorials/workshops               | 15        |
| Laboratory hours                           | 15        |
| Field experience hours                     | 15        |
| Experiential (practicum, internship, etc.) |           |
| Online learning activities                 |           |
| Other contact hours:                       |           |
| <b>Total</b>                               | <b>60</b> |

### Special Topics

Will the course be offered with different topics?

☐ Yes ☒ No

If yes,

Different lettered courses may be taken for credit:

☐ No ☐ Yes, repeat(s) ☐ Yes, no limit

*Note: The specific topic will be recorded when offered.*

**Maximum enrolment (for information only):** 28

**Expected frequency of course offerings**  
 (every semester, annually, etc.): Annually

**Department / Program Head or Director:** Dr. Michelle Rhodes

**Date approved:** May 2016

**Campus-Wide Consultation (CWC)**

**Date of posting:** June 10, 2016

**Faculty Council approval**

**Date approved:** May 2016

**Dean/Associate VP:** Dr. Jacqueline Nolte

**Date approved:** May 2016

**Undergraduate Education Committee (UEC) approval**

**Date of meeting:** June 17, 2016

## Learning Outcomes

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

1. Identify, regardless of where they live, the features that help to define their bioregions;
2. Discuss the different ways in which community, region, and sustainability are envisioned at different scales;
3. Provide written and oral explanation of how Indigeneity, colonization, and process of settlement have transformed understandings of bioregional relationships;
4. Demonstrate ability to use different tools used to create more sustainable environments in unique regional contexts;
5. Devise solutions to local environmental challenges, utilizing a varied skillset from the sciences, humanities, social sciences, etc.

## Prior Learning Assessment and Recognition (PLAR)

☒ Yes ☐ No

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

This is a team-taught course that integrates a variety of approaches to discussing, analyzing, and working towards improving bioregional communities. These approaches include 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)

| <u>Author<br/>Surname,<br/>Initials</u> | <u>Title (article, book, journal, etc.)</u>                                                                                                                             | <u>Current<br/>Edition</u> | <u>Publisher</u> | <u>Year<br/>Publishe<br/>d</u> |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------|--------------------------------|
| 1. Thayer, Robert                       | LifePlace: Bioregional Thought and Practice                                                                                                                             | <input type="checkbox"/>   | UC Press         | 2003                           |
| 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          | 1986                           |
| 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. Legnick, L, et al                    | Metropolitan Foodsheds: A resilient response to the climate change challenge? <i>Journal of Environmental Planning and Policy</i>                                       | <input type="checkbox"/>   |                  | 2015                           |
| James, R.                               | A Bioregional Economy: a green and post-capitalist alternative to the economy of accumulation. <i>Local Economy</i>                                                     |                            |                  | 2014                           |
| Dale, A. and Newman, L                  | Sustainable Economy for Some: Green urban development and affordability. <i>Local Environment</i>                                                                       |                            |                  | 2009                           |

## Typical Evaluation Methods and Weighting

|                   |                |                         |               |                   |                 |        |
|-------------------|----------------|-------------------------|---------------|-------------------|-----------------|--------|
| Final exam:       | Reflection(s): | 10%                     | Midterm exam: | %                 | Research Essay: | 25%    |
| Quizzes/tests:    | %              | Lab work:               | 25%           | Field experience: | 20%             |        |
| Seminar Exercises | 20%            | Portfolio Contributions | %             | Other             | %               | Total: |
|                   |                |                         |               |                   |                 | 100%   |

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

## 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 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



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 11/22/13

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

**Course Code and Number:** ENV 299

**Number of Credits:** 1 [Course credit policy \(105\)](#)

**Course Full Title:** Environmental Portfolio I  
**Course Short Title:**

**Faculty:** Faculty of Social Sciences

**Department (or program if no department):** Geography and the Environment

### Calendar Description:

Portfolio development course focused on identifying and expanding on environmental linkages between required and elective courses within the BES and BES (Natural Sciences) program, ideas presented in courses and lived experiences, and academic experiences and employer expectations. Designed to be taken during the winter term of the student's second year in BES or BES (Natural Sciences) program.

**Prerequisites (or NONE):** 45 university-level credits including GEOG 111 and ENV 200, and admission to the Bachelor of Environmental Studies program or Bachelor of Environmental Studies (Natural Sciences) program.

**Corequisites (if applicable, or NONE):**

**Pre/corequisites (if applicable, or NONE):**

### Equivalent Courses (cannot be taken for additional credit)

Former course code/number:

Cross-listed with:

Equivalent course(s):

*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.*

### Transfer Credit

Transfer credit already exists: ☐ Yes ☒ No

Transfer credit requested (OREg to submit to BCCAT):

☐ Yes ☒ No (Note: If yes, fill in transfer credit form)

Resubmit revised outline for articulation: ☐ Yes ☐ No

To find out how this course transfers, see [bctransferguide.ca](http://bctransferguide.ca).

**Total Hours: 15**

### Typical structure of instructional hours:

|                                            |           |
|--------------------------------------------|-----------|
| Lecture hours                              |           |
| Seminars/tutorials/workshops               | 15        |
| Laboratory hours                           |           |
| Field experience hours                     |           |
| Experiential (practicum, internship, etc.) |           |
| Online learning activities                 |           |
| Other contact hours:                       |           |
| <b>Total</b>                               | <b>15</b> |

### Special Topics

Will the course be offered with different topics?

☐ Yes ☒ No

If yes,

Different lettered courses may be taken for credit:

☐ No ☐ Yes, repeat(s) ☐ Yes, no limit

*Note: The specific topic will be recorded when offered.*

**Maximum enrolment (for information only):** 30

**Expected frequency of course offerings**  
 (every semester, annually, etc.): Annually

**Department / Program Head or Director:** Dr. Michelle Rhodes

**Date approved:** May 2016

**Campus-Wide Consultation (CWC)**

**Date of posting:** June 10, 2016

**Faculty Council approval**

**Date approved:** May 2016

**Dean/Associate VP:** Dr. Jacqueline Nolte

**Date approved:** May 2016

**Undergraduate Education Committee (UEC) approval**

**Date of meeting:** June 17, 2016

ENV 299

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. Conduct a self-assessment on what has been learned through the student's particular course of study;
2. Identify significant connections between related ideas and skills introduced in different disciplinary contexts;
3. Identify meaningful linkages between environmental issues and concepts discussed in classroom settings and what is observed in day-to-day experiences;
4. Articulate the ethical implications of learned materials and skills;
5. Discuss the application and significance of concepts and skills as they relate to program learning outcomes;
6. Apply knowledge of future employment prospects in the development of basic portfolio presentation materials.

## Prior Learning Assessment and Recognition (PLAR)

☐ Yes ☒ No, PLAR cannot be awarded for this course because portfolio is tied to program learning outcomes

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

The course is taught in a seminar format with guest lectures and an emphasis on student-directed learning. Students in this course may work alongside students taking ENV 399 and ENV 499 as part of the seminar. Meetings may take place between instructor and student in a one-to-one format, face-to-face or on-line.

This course is offered as Credit/ No Credit.

**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)

| <u>Author Surname,<br/>Initials</u> | <u>Title (article, book, journal, etc.)</u> | <u>Current Edition</u>              | <u>Publisher</u> | <u>Year<br/>Published</u> |
|-------------------------------------|---------------------------------------------|-------------------------------------|------------------|---------------------------|
| 1.                                  |                                             | <input checked="" type="checkbox"/> |                  |                           |
| 2.                                  |                                             | <input type="checkbox"/>            |                  |                           |
| 3.                                  |                                             | <input type="checkbox"/>            |                  |                           |
| 4.                                  |                                             | <input type="checkbox"/>            |                  |                           |
| 5.                                  |                                             | <input type="checkbox"/>            |                  |                           |

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

## Typical Evaluation Methods and Weighting

|                       |                             |                     |              |
|-----------------------|-----------------------------|---------------------|--------------|
| Final exam:           | Self-Assessments: 20%       | Midterm exam: %     | Practicum: % |
| Quizzes/tests: %      | Lab work: %                 | Field experience: % |              |
| Seminar Exercises 20% | Portfolio Contributions 60% | Other %             | Total: 0%    |

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

## Typical Course Content and Topics

Week 1: Goals of the course; What is the purpose of a portfolio?  
 Week 2: Self-Assessment of career plans, environmental ideas/ skills practiced to date, and individual capacity for change  
 Week 3: Reflection on core courses within program learning outcomes  
 Week 4: Application of skills and thought to employment—review of opportunities and trends in environmental sector hiring  
 Week 5: Guest lectures/ roundtable from employers  
 Week 6: Selecting a skill and presenting it in portfolio form (e.g. GIS, Public Communications, Business Plan Development, etc.)  
 Week 7: Selecting a skill and presenting it in oral form (e.g. GIS, Public Communications, Business Plan Development, etc.)  
 Week 8: Guest lectures/ roundtable from employers  
 Week 9: Selecting a skill and presenting it in portfolio form (e.g. GIS, Public Communications, Business Plan Development, etc.)  
 Week 10: Selecting a skill and presenting it in oral form (e.g. GIS, Public Communications, Business Plan Development, etc.)  
 Week 11: Identifying skills and knowledge gaps, and how to meet these  
 Week 12: Reflection on personal engagement in one's community; Guest lectures/ roundtable from employers  
 Week 13: Cumulative self-assessment; portfolio compilation



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 11/22/13

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

**Course Code and Number:** ENV 399

**Number of Credits:** 1 [Course credit policy \(105\)](#)

**Course Full Title:** Environmental Portfolio II  
**Course Short Title:**

**Faculty:** Faculty of Social Sciences

**Department (or program if no department):** Geography and the Environment

### Calendar Description:

Portfolio development course focused on identifying and expanding on environmental linkages between required and elective courses within the BES program, ideas presented in courses and lived experiences, and academic experiences and employer expectations. Designed to be taken during the winter term of the student's third year (between 60 and 90 credits) in the BES or BES (Natural Sciences) program.

**Prerequisites (or NONE):** 60 university-level credits including ENV 299, and admission to the Bachelor of Environmental Studies program or Bachelor of Environmental Studies (Natural Sciences) program.

**Corequisites (if applicable, or NONE):**

**Pre/corequisites (if applicable, or NONE):**

### Equivalent Courses (cannot be taken for additional credit)

Former course code/number:

Cross-listed with:

Equivalent course(s):

*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.*

### Transfer Credit

Transfer credit already exists: ☐ Yes ☒ No

Transfer credit requested (OREg to submit to BCCAT):

☐ Yes ☒ No (Note: If yes, fill in transfer credit form)

Resubmit revised outline for articulation: ☐ Yes ☐ No

To find out how this course transfers, see [bctransferguide.ca](http://bctransferguide.ca).

**Total Hours: 15**

### Typical structure of instructional hours:

|                                            |           |
|--------------------------------------------|-----------|
| Lecture hours                              |           |
| Seminars/tutorials/workshops               | 15        |
| Laboratory hours                           |           |
| Field experience hours                     |           |
| Experiential (practicum, internship, etc.) |           |
| Online learning activities                 |           |
| Other contact hours:                       |           |
| <b>Total</b>                               | <b>15</b> |

### Special Topics

Will the course be offered with different topics?

☐ Yes ☒ No

If yes,

Different lettered courses may be taken for credit:

☐ No ☐ Yes, repeat(s) ☐ Yes, no limit

*Note: The specific topic will be recorded when offered.*

**Maximum enrolment (for information only): 30**

**Expected frequency of course offerings**  
 (every semester, annually, etc.): Annually

**Department / Program Head or Director:** Dr. Michelle Rhodes

**Date approved:** May 2016

**Campus-Wide Consultation (CWC)**

**Date of posting:** June 10, 2016

**Faculty Council approval**

**Date approved:** May 2016

**Dean/Associate VP:** Dr. Jacqueline Nolte

**Date approved:** May 2016

**Undergraduate Education Committee (UEC) approval**

**Date of meeting:** June 17, 2016

**Learning Outcomes**

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

1. Build on previous self-assessments to reflect on what been learned through the student's particular course of study;
2. Explore both significant and more subtle connections between related ideas and skills introduced in different disciplinary contexts;
3. Discuss meaningful linkages between environmental issues and concepts discussed in classroom settings and what is observed in day-to-day experiences;
4. Articulate the ethical implications of learned materials and skills;
5. Discuss the application and significance of concepts and skills as they relate to program learning outcomes;
6. Develop formal portfolio presentation materials.

**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 is taught on-line and in a seminar format with an emphasis on student-directed learning. Students in this course will work alongside students taking GEOG 299 and GEOG 499 as part of the seminar.

This course is offered as Credit/ No Credit.

**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)**

| <u>Author Surname,<br/>Initials</u> | <u>Title (article, book, journal, etc.)</u> | <u>Current Edition</u>   | <u>Publisher</u> | <u>Year<br/>Published</u> |
|-------------------------------------|---------------------------------------------|--------------------------|------------------|---------------------------|
| 1.                                  |                                             |                          |                  |                           |
| 2.                                  |                                             | <input type="checkbox"/> |                  |                           |
| 3.                                  |                                             | <input type="checkbox"/> |                  |                           |
| 4.                                  |                                             | <input type="checkbox"/> |                  |                           |
| 5.                                  |                                             | <input type="checkbox"/> |                  |                           |

**Typical Evaluation Methods and Weighting**

|                        |                       |                     |              |
|------------------------|-----------------------|---------------------|--------------|
| Final exam:            | Self-Assessments: 20% | Midterm exam: %     | Practicum: % |
| Quizzes/tests: %       | Lab work: %           | Field experience: % | Shop work: % |
| Class Presentation 20% | Final Portfolio 60%   | Journal %           | Total: 0%    |

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

**Typical Course Content and Topics**

Week 1: Goals of the course; Areas to build on in one's portfolio (started in ENV 299)  
 Week 2: Review of career plans, environmental ideas/ skills practiced to date, and individual capacity for change  
 Week 3: Reflection on using core courses to meet program learning outcomes  
 Week 4: Application of skills and thought to employment—review of opportunities and trends in environmental sector hiring  
 Week 5: Guest lectures/ roundtable from employers  
 Week 6: Selecting an advanced skill and presenting it in portfolio form (e.g. GIS, Public Communications, Business Plan Development, etc.)  
 Week 7: Selecting an advanced skill and presenting it in oral form (e.g. GIS, Public Communications, Business Plan Development, etc.)  
 Week 8: Guest lectures/ roundtable from employers  
 Week 9: Selecting an advanced skill and presenting it in portfolio form (e.g. GIS, Public Communications, Business Plan Development, etc.)  
 Week 10: Selecting an advanced skill and presenting it in oral form (e.g. GIS, Public Communications, Business Plan Development, etc.)  
 Week 11: Identifying skills and knowledge gaps, and how to meet these  
 Week 12: Reflection on personal engagement in one's community; Guest lectures/ roundtable from employers  
 Week 13: Cumulative self-assessment; portfolio compilation



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 11/22/13

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

**Course Code and Number:** ENV 410

**Number of Credits:** 4 [Course credit policy \(105\)](#)

**Course Full Title:** Special Topics in Environmental Studies  
**Course Short Title:**

**Faculty:** Faculty of Social Sciences

**Department (or program if no department):** Geography and the Environment

### Calendar Description:

Seminar course structured for in-depth exploration of environmental issue, body of literature, and/or research question. Topic may be approached from one or more different disciplinary perspectives. Field trips outside of class time may be required.

**Prerequisites (or NONE):** 60 university-level credits.

**Corequisites (if applicable, or NONE):**

**Pre/corequisites (if applicable, or NONE):**

### Equivalent Courses (cannot be taken for additional credit)

Former course code/number:

Cross-listed with:

Equivalent course(s):

*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.*

### Transfer Credit

Transfer credit already exists: ☐ Yes ☒ No

Transfer credit requested (OReg to submit to BCCAT):

☒ Yes ☐ No (Note: If yes, fill in transfer credit form)

Resubmit revised outline for articulation: ☐ Yes ☐ No

To find out how this course transfers, see [bctransferguide.ca](http://bctransferguide.ca).

**Total Hours:** 60

### Typical structure of instructional hours:

|                                            |           |
|--------------------------------------------|-----------|
| Lecture hours                              |           |
| Seminars/tutorials/workshops               | 60        |
| Laboratory hours                           |           |
| Field experience hours                     |           |
| Experiential (practicum, internship, etc.) |           |
| Online learning activities                 |           |
| Other contact hours:                       |           |
| <b>Total</b>                               | <b>60</b> |

### Special Topics

Will the course be offered with different topics?

☒ Yes ☐ No

If yes,

Different lettered courses may be taken for credit:

☐ No ☒ Yes, repeat(s) ☒ Yes, no limit

*Note: The specific topic will be recorded when offered.*

**Maximum enrolment (for information only):** 24

**Expected frequency of course offerings**  
 (every semester, annually, etc.): Annually

**Department / Program Head or Director:** Dr. Michelle Rhodes

**Date approved:** May 2016

**Campus-Wide Consultation (CWC)**

**Date of posting:** June 10, 2016

**Faculty Council approval**

**Date approved:** May 2016

**Dean/Associate VP:** Dr. Jacqueline Nolte

**Date approved:** May 2016

**Undergraduate Education Committee (UEC) approval**

**Date of meeting:** June 17, 2016

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. Utilized advanced library and field research methodologies in final reports or essays;
3. Integrate varied points of view in both written and verbal analysis of an issue or body of work;
4. Provide a verbal defense of, and demonstrate extensive knowledge supporting, one's perspective on a complicated environmental question;
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

## 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,<br>Initials                 | Title (article, book, journal, etc.)                                | Current Edition          | Publisher           | Year<br>Published |
|---------------------------------------------|---------------------------------------------------------------------|--------------------------|---------------------|-------------------|
| <b>Special Topic: Ecological Literature</b> |                                                                     | <input type="checkbox"/> |                     |                   |
| 1. Coursepack                               |                                                                     | <input type="checkbox"/> |                     |                   |
| 2. Carolan, T. & Stewart, F.                | <u>Cascadia: The Life and Breath of the World</u>                   | X                        | Univ. Hawaii Press  | 2013              |
| 3. Robinson, Eden                           | <u>The Sasquatch at Home</u>                                        | X                        | Univ. Alberta Press | 2013              |
| 4. Glavin, T. & B. Parfitt                  | <u>Sturgeon Reach</u>                                               | X                        | New Star            | 2013              |
| <b>Special Topic: Oil</b>                   |                                                                     |                          |                     |                   |
| Bridge, G. and LeBillion, P.                | <u>Oil</u>                                                          |                          | Polity              | 2012              |
| Barrett, R. and Worden, D. eds.             | <u>Oil Culture</u>                                                  |                          | U Minn Press        | 2014              |
| Black, T., ed.                              | <u>A Line in the Tar Sands: Struggles for environmental justice</u> |                          | PM Press (Oakland)  | 2014              |

## Typical Evaluation Methods and Weighting

|                          |                          |                      |                            |
|--------------------------|--------------------------|----------------------|----------------------------|
| Mid-term essay: 25%      | Short Reaction Paper 10% | Reading response: 5% | Workshop participation 10% |
| Seminar Presentation 15% | Term Essay: 35%          |                      | Total:100%                 |

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

## Typical Course Content and Topics

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

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

Rdg: 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.*

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

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

Rdg: "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'.*

Rdg: 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.*

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

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

Rdg: 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.*

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

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

Rdg: 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.*

Rdg: Wade Davis "The Shadow of Red Cedar"; Charles Lillard, "Writers for Clayoquot."

**Week 10:** *Fish, Weather, Coastal Stories*

Rdg: Theresa Kishkan, "Marine Air"; Tom Jay "The Salmon of the Heart"; Judith Roche, "Salmon Suite."

**Week 11:** *Dharma Gaia*

Rdg: Ursula LeGuin, "Women and Wilderness"; Julia Menard-Warwick, "Tree-Planting at Sombrio Creek"; Susan Musgrave, Two Poems.

**Week 12:** *In the Canadian Grain.*

Rdg: Chief Thunderchild, "A Winter of Hardship"; Farley Mowat, from *Never Cry Wolf*; Bob Hunter, "From Amchitka to Mururoa."

**Week 13:** *East –West - Home*

Rdg: 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*



ORIGINAL COURSE IMPLEMENTATION DATE:  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED: (six years after UEC approval)  
 Course outline form version: 11/22/13

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

**Course Code and Number:** ENV 499

**Number of Credits:** 1 [Course credit policy \(105\)](#)

**Course Full Title:** Environmental Portfolio III  
**Course Short Title:**

**Faculty:** Faculty of Social Sciences

**Department (or program if no department):** Geography and the Environment

### Calendar Description:

Advanced portfolio development course focused on identifying and expanding on environmental linkages between required and elective courses within the BES and BES (Natural Sciences) program, ideas presented in courses and lived experiences, and academic experiences and employer expectations. Designed to be taken during the winter term of the student's final year in BES or BES (Natural Sciences) program.

**Prerequisites (or NONE):** 90 university-level credits including ENV 399, and admission to the Bachelor of Environmental Studies or Bachelor of Environmental Studies (Natural Sciences) program.

**Corequisites (if applicable, or NONE):**

**Pre/corequisites (if applicable, or NONE):**

### Equivalent Courses (cannot be taken for additional credit)

Former course code/number:

Cross-listed with:

Equivalent course(s):

*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.*

### Transfer Credit

Transfer credit already exists: ☐ Yes ☒ No

Transfer credit requested (OREg to submit to BCCAT):

☐ Yes ☒ No (Note: If yes, fill in transfer credit form)

Resubmit revised outline for articulation: ☐ Yes ☐ No

To find out how this course transfers, see [bctransferguide.ca](http://bctransferguide.ca).

**Total Hours: 15**

### Typical structure of instructional hours:

|                                            |           |
|--------------------------------------------|-----------|
| Lecture hours                              |           |
| Seminars/tutorials/workshops               | 15        |
| Laboratory hours                           |           |
| Field experience hours                     |           |
| Experiential (practicum, internship, etc.) |           |
| Online learning activities                 |           |
| Other contact hours:                       |           |
| <b>Total</b>                               | <b>15</b> |

### Special Topics

Will the course be offered with different topics?

☐ Yes ☒ No

If yes,

Different lettered courses may be taken for credit:

☐ No ☐ Yes, repeat(s) ☐ Yes, no limit

*Note: The specific topic will be recorded when offered.*

**Maximum enrolment (for information only):** 30

**Expected frequency of course offerings**  
 (every semester, annually, etc.): Annually

**Department / Program Head or Director:** Dr. Michelle Rhodes

**Date approved:** May 2016

**Campus-Wide Consultation (CWC)**

**Date of posting:** June 10, 2016

**Faculty Council approval**

**Date approved:** May 2016

**Dean/Associate VP:** Dr. Jacqueline Nolte

**Date approved:** May 2016

**Undergraduate Education Committee (UEC) approval**

**Date of meeting:** June 17, 2016

**Learning Outcomes**

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

1. Conduct a nuanced self-assessment on what has been learned through a particular course of study;
2. Explore both significant and more subtle connections between related ideas and skills introduced in different disciplinary contexts;
3. Discuss the lessons learned from building linkages between academic approaches to environmental issues and that which occurs in day-to-day experiences;
4. Articulate the ethical implications of learned materials and skills;
5. Identify and demonstrate through self-assessment and presentation of evidence one's strength in research and capabilities in scholarship;
6. Discuss the application and significance of most significant concepts and skills gleaned from the program as they relate to program and institutional learning outcomes;
7. Develop a cumulative, formal portfolio and present effectively to an audience.

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

☐ Yes ☒ No, PLAR cannot be awarded for this course because Portfolio is tied to program learning outcomes

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

The course is taught on-line and in a seminar format with an emphasis on student-directed learning. Students in this course will work alongside students taking GEOG 299 and GEOG 399 as part of the seminar.

This course is offered as Credit/ No Credit.

**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)

| <u>Author Surname,<br/>Initials</u> | <u>Title (article, book, journal, etc.)</u> | <u>Current Edition</u>              | <u>Publisher</u> | <u>Year<br/>Published</u> |
|-------------------------------------|---------------------------------------------|-------------------------------------|------------------|---------------------------|
| 1.                                  |                                             | <input checked="" type="checkbox"/> |                  |                           |
| 2.                                  |                                             | <input type="checkbox"/>            |                  |                           |
| 3.                                  |                                             | <input type="checkbox"/>            |                  |                           |
| 4.                                  |                                             | <input type="checkbox"/>            |                  |                           |
| 5.                                  |                                             | <input type="checkbox"/>            |                  |                           |

**Typical Evaluation Methods and Weighting**

|                    |                   |                 |               |                   |            |            |    |
|--------------------|-------------------|-----------------|---------------|-------------------|------------|------------|----|
| Final exam:        | Self-Assessments: | 20%             | Midterm exam: | %                 | Practicum: | %          |    |
| Quizzes/tests:     | %                 | Lab work:       | %             | Field experience: | %          | Shop work: | %  |
| Class Presentation | 20%               | Final Portfolio | 60%           | Journal           | 0%         | Total:     | 0% |

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

**Typical Course Content and Topics**

Week 1: Goals of the course; Final portfolios—purpose and content; What does the journal entail?  
 Week 2: Self-Assessment of environmental ideas/ skills practiced to date, and of individual capacity for change  
 Week 3: Reflection on connections between research and advanced study within program, and connections to learning outcomes  
 Week 4: Applying environmental thought and research to practice and profession  
 Week 5: Presenting project-management skills in portfolio form  
 Week 6: Presenting research, numeracy, and/or scientific skills and presenting it in oral form  
 Week 7: Application of skills and thought to employment—review of opportunities and trends in environmental sector hiring  
 Week 8: Science and environmental practice--reflections  
 Week 9: Presenting collaboration skills in portfolio form  
 Week 10: Presenting additional skills in portfolio form  
 Week 11: Identifying skills and knowledge gaps, and how to meet these once one has completed their formal programs of study  
 Week 12: Reflection on personal engagement in one's community  
 Week 13: Cumulative self-assessment; final portfolio compilation

**Memo for Program Changes**

To: UEC

From: Rodney Smith

Date: June 13th

**Subject: Program change: Plumbing and Piping Certificate Program**

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): Aligned with the Industry Training Authority standard Program Guide

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

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

5. Will additional resources be required? If so, how will these costs be covered? No

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

UFV's Plumbing and Piping Program has been operating at 34 weeks since its inception and contains materials that are more than the ITA prescribed content. The additional content is not required to enter the plumbing and piping trades. UFV's program is the longest and most expensive in the system. Comparable programs around the Province are 25 weeks in length including those at nearby institutions. Students will save approximately \$1000 per year and be ready for entry-level employment 9 weeks sooner.

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? Reduction of credits from 34 to 25. Same Certificate issued.

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.): None.
9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed. N/A
10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

SBC is considering budgetary implications concurrently. Budgetary implications are neutral.

**Memo for Course Changes**

To: UEC

From: Rodney Smith

Date: June 13<sup>th</sup>, 2016

**Subject: Proposal for revision of Plumbing 111: Plumbing Fundamentals**

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: Program alignment with the Industry Training Authority standard Program Outline.

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

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)? N/A

6. What consideration has been given to indigenizing the curriculum? Currently working on examples relevant to plumbing matters found in indigenous settings/communities.

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

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)

All budget implications are covered within the Program and the Faculty (SBC is reviewing).

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: \$100 (no change).



ORIGINAL COURSE IMPLEMENTATION DATE: September 2013  
 REVISED COURSE IMPLEMENTATION DATE: September 2016  
 COURSE TO BE REVIEWED: (six years after UEC approval) February 2019  
 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> PLMB 111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Plumbing Fundamentals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | <b>Department (or program if no department):</b> Plumbing and Piping                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>This course introduces students to the scientific theory, calculations, and problem-solving techniques in the piping trades. There will be an emphasis on standard measurement units and conversions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           | Admission to the Plumbing and Piping certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <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 type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 75</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td style="text-align: right;">40</td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: right;">35</td></tr> <tr><td>Laboratory hours</td><td></td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td></td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: right;"><b>75</b></td></tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 40 | Seminars/tutorials/workshops | 35 | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>Total</b> | <b>75</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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 40        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 35        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>75</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           | <b>Maximum enrolment (for information only):</b> 20<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> Annually                                                                                                                                                                                                                                                                                                                                                     |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> John English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           | <b>Date approved:</b> June 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           | <b>Date of meeting:</b> June 17, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

**PLMB 111**

**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. Use mathematics and science to solve problems in the piping trades
2. Use trigonometry to solve problems in the piping trades
3. Calculate piping measurements including elevations and grades
4. Describe factors that affect fluid flow in a piping system including Pascal's theory of pressure and Archimedes' principle of displacement
5. Calculate the expansion and contraction of various piping materials due to heating and cooling

**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 with labs for drawing exercises

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

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

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

| Author (surname, initials) | Title (article, book, journal, etc.) | Current ed.              | Publisher | Year |
|----------------------------|--------------------------------------|--------------------------|-----------|------|
| 1.                         | Plumbing Custom Package              | <input type="checkbox"/> |           |      |
| 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.)**

Scientific calculator

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |   |            |      |
|----------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:    | 50% | Assignments: | 20% | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 20% | Lab work:    | %   | Field experience: | % | Shop work: | 10%  |
| Other:         | %   | Other:       | %   | Other:            | % | Total:     | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

Problem solving techniques  
 Volume and conversion problems  
 Trigonometry  
 Piping measurement calculations  
 Pressure, displacement, and fluid power  
 Heat transfer and load calculations

**Memo for Course Changes**

To: UEC

From: Rodney Smith

Date: June 13<sup>th</sup>, 2016

**Subject: Proposal for revision of Plumbing 112: Tools and Materials**

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: Program alignment with the Industry Training Authority standard Program Outline.

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

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)? N/A

6. What consideration has been given to indigenizing the curriculum? Currently working on examples relevant to plumbing matters found in indigenous settings/communities.

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

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)

All budget implications are covered within the Program and the Faculty (SBC is reviewing).

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: \$100 (no change).



**ORIGINAL COURSE IMPLEMENTATION DATE:** September 2013  
**REVISED COURSE IMPLEMENTATION DATE:** September 2016  
**COURSE TO BE REVIEWED:** (six years after UEC approval) February 2019  
**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> PLMB 112                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | <b>Number of Credits:</b> 7 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Tools and Materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | <b>Department (or program if no department):</b> Plumbing and Piping                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>This course introduces the tools and common materials used in the piping trades. Students will learn to select and safely use the appropriate tool and materials through practical projects designed for work applications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | PLMB 110, or instructor's permission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <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 type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 175</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td style="text-align: right;">40</td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: right;">35</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: Shop</td><td style="text-align: right;">100</td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: right;"><b>175</b></td></tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 40 | Seminars/tutorials/workshops | 35 | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: Shop | 100 | <b>Total</b> | <b>175</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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 40         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 35         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours: Shop                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>175</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Maximum enrolment (for information only):</b> 20<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> Annually                                                                                                                                                                                                                                                                                                                                                     |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> John English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | <b>Date approved:</b> June 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | <b>Date of meeting:</b> June 17, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

**PLMB 112**

**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. Select hand tools, portable power tools, and stationary power tools appropriate to the piping process
2. Use hand tools, portable power tools, and stationary power tools appropriate to the piping process
3. Inspect and maintain hand tools, portable power tools, and stationary power tools appropriate to the piping process
4. Use pressure measuring tools including manometers and mechanical gauges
5. Select and use ladder and platforms
6. Identify materials common to the piping trades

**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)  
presentation, tool demonstrations and shop time, group and individual practicals

**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.                         | Plumbing Custom Package                    | <input type="checkbox"/>            |           |      |
| 2.                         | National Plumbing Code of Canada           | <input checked="" type="checkbox"/> |           |      |
| 3. Joyce, Michael A.       | Residential Construction Academy: Plumbing | <input checked="" type="checkbox"/> |           |      |
| 4.                         |                                            | <input type="checkbox"/>            |           |      |
| 5.                         |                                            | <input type="checkbox"/>            |           |      |

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

PPE, plumbing hand tool kit

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |   |            |      |
|----------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:    | 50% | Assignments: | 20% | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 20% | Lab work:    | %   | Field experience: | % | Shop work: | 10%  |
| Other:         | %   | Other:       | %   | Other:            | % | Total:     | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

Hand tools  
Portable power tools  
Stationary power tools  
Measurement tools  
Ladders and scaffolding  
Piping materials

**Memo for Course Changes**

To: UEC

From: Rodney Smith

Date: June 13<sup>th</sup>, 2016

**Subject: Proposal for revision of Plumbing 113: Organize Work**

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: Program alignment with the Industry Training Authority standard Program Outline.

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

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)? N/A

6. What consideration has been given to indigenizing the curriculum? Currently working on examples relevant to plumbing matters found in indigenous settings/communities.

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

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)

All budget implications are covered within the Program and the Faculty (SBC is reviewing).

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: \$100 (no change).



ORIGINAL COURSE IMPLEMENTATION DATE: September 2013  
 REVISED COURSE IMPLEMENTATION DATE: September 2016  
 COURSE TO BE REVIEWED: (six years after UEC approval) February 2019  
 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> PLMB 113                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> Organize Work                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           | <b>Department (or program if no department):</b> Plumbing and Piping                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>This course introduces the piping industry codes, regulations, and language of mechanical blueprints. Students will learn to read and interpret the piping symbols used on mechanical blueprint drawings, identify relevant codes and standards, and use workplace documentation.                                                                                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           | Admission to the Plumbing and Piping certificate program.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Corequisites (if applicable, or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prelcorequisites (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 type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 75</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Lecture hours</td><td style="text-align: right;">43</td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: right;">25</td></tr> <tr><td>Laboratory hours</td><td style="text-align: right;">7</td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td></td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: right;"><b>75</b></td></tr> </table> |           | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 43 | Seminars/tutorials/workshops | 25 | Laboratory hours | 7 | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: |  | <b>Total</b> | <b>75</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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 43        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Seminars/tutorials/workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 25        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>75</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           | <b>Maximum enrolment (for information only):</b> 20<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> Annually                                                                                                                                                                                                                                                                                                                                                     |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> John English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           | <b>Date approved:</b> June 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           | <b>Date of meeting:</b> June 17, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |   |                        |  |                                            |  |                            |  |                      |  |              |           |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

PLMB 113

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. Use drafting tools, symbols, lettering and line conventions when creating drawings
2. Convert between isometric and orthographic projections
3. Interpret information found on a set of drawings
4. Identify codes and standards encountered in the piping trades
5. Describe documentation encountered in the piping trades, including manufacturer and supplier documentation
6. Source manufacturer documentation

**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 with labs for drawing exercises

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

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

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

| Author (surname, initials) | Title (article, book, journal, etc.)       | Current ed.                         | Publisher | Year |
|----------------------------|--------------------------------------------|-------------------------------------|-----------|------|
| 1. Joyce, Michael A.       | Residential Construction Academy: Plumbing | <input checked="" type="checkbox"/> | Cengage   |      |
| 2.                         | Plumbing Custom Package                    | <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.)**

Scientific Calculator

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |   |            |      |
|----------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:    | 50% | Assignments: | 20% | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 20% | Lab work:    | %   | Field experience: | % | Shop work: | 10%  |
| Other:         | %   | Other:       | %   | Other:            | % | Total:     | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

Abbreviation and Symbols  
 Mechanical plan Reading  
 Orthographic Drawings  
 Isometric Drawings  
 Piping codes and environmental regulations  
 Manufacturer and supplier documentation

**Memo for Course Changes**

To: UEC

From: Rodney Smith

Date: June 13<sup>th</sup>, 2016

**Subject: Proposal for revision of Plumbing 114: DWV, Water and Fixtures**

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: Program alignment with the Industry Training Authority standard Program Outline.

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

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)? N/A

6. What consideration has been given to indigenizing the curriculum? Currently working on examples relevant to plumbing matters found in indigenous settings/communities.

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

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)

All budget implications are covered within the Program and the Faculty (SBC is reviewing).

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: \$100 (no change).



ORIGINAL COURSE IMPLEMENTATION DATE: September 2013  
 REVISED COURSE IMPLEMENTATION DATE: September 2016  
 COURSE TO BE REVIEWED: (six years after UEC approval) February 2019  
 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> PLMB 114                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | <b>Number of Credits:</b> 9 <a href="#">Course credit policy (105)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Full Title:</b> DWV, Water, and Fixtures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Course Short Title (if title exceeds 30 characters):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty:</b> Faculty of Applied and Technical Studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | <b>Department (or program if no department):</b> Plumbing and Piping                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Calendar Description:</b><br>This course applies local codes to properly size, install, and test drainage, venting, and water pipes and fittings. This includes the basic design and operation of drain, waste, venting, potable, hot water, and gas systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Prerequisites (or NONE):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | PLMB 112 and PLMB 113, or instructor's permission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <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 type="checkbox"/> No<br>To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> . |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total Hours: 225</b><br><b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td style="text-align: right;">50</td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: right;">25</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: Shop</td><td style="text-align: right;">150</td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: right;"><b>225</b></td></tr> </table> |            | Lecture hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 50 | Seminars/tutorials/workshops | 25 | Laboratory hours |  | Field experience hours |  | Experiential (practicum, internship, etc.) |  | Online learning activities |  | Other contact hours: Shop | 150 | <b>Total</b> | <b>225</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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Laboratory hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Field experience hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Experiential (practicum, internship, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Online learning activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Other contact hours: Shop                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 150        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>225</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Maximum enrolment (for information only):</b> 20<br><b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> Annually                                                                                                                                                                                                                                                                                                                                                     |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Department / Program Head or Director:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Faculty Council approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | <b>Date approved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Campus-Wide Consultation (CWC)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | <b>Date of posting:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Dean/Associate VP:</b> John English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | <b>Date approved:</b> June 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Undergraduate Education Committee (UEC) approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | <b>Date of meeting:</b> June 17, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                              |    |                  |  |                        |  |                                            |  |                            |  |                           |     |              |            |                                                                                                                                                                                                                                                                                                                                                                                                  |  |

**PLMB 114**

**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. Install the appropriate pipe, fittings and valves for different piping systems
2. Install residential plumbing projects accurately
3. Organize and plan a residential plumbing installation
4. Size to code drainage, waste and vent piping systems
5. Install residential plumbing fixtures
6. Work in compliance with health and safety standards
7. Use acceptable methods of structure penetration and repair

**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)  
presentation, shop time, group and individual practicals

**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.                         | Plumbing Custom Package                    | <input type="checkbox"/>            |           |      |
| 2.                         | National Plumbing Code of Canada           | <input checked="" type="checkbox"/> |           |      |
| 3. Joyce, Michael A.       | Residential Construction Academy: Plumbing | <input checked="" type="checkbox"/> |           |      |
| 4.                         |                                            | <input type="checkbox"/>            |           |      |
| 5.                         |                                            | <input type="checkbox"/>            |           |      |

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

PPE, plumbing hand tool kit

**Typical Evaluation Methods and Weighting**

|                |     |              |     |                   |   |            |      |
|----------------|-----|--------------|-----|-------------------|---|------------|------|
| Final exam:    | 50% | Assignments: | 20% | Midterm exam:     | % | Practicum: | %    |
| Quizzes/tests: | 20% | Lab work:    | %   | Field experience: | % | Shop work: | 10%  |
| Other:         | %   | Other:       | %   | Other:            | % | Total:     | 100% |

**Details (if necessary):**

**Typical Course Content and Topics**

Venting systems  
Drainage systems  
Waste systems  
Potable water systems  
Hot water systems  
Residential gas systems



Section 2  
Program Overview



## OCCUPATION ANALYSIS CHART PLUMBER

|                                                         |                                                      |                                                               |                                            |                                                               |                                                               |                                 |
|---------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------|
| <b>Use Safe Work Practices</b><br>A                     | Control Workplace Hazards<br>A1                      | Use information in the OHS Regulation and WCB Standards<br>A2 | Use WHMIS<br>A3                            | Use personal protective equipment<br>A4                       | Practice fire prevention<br>A5                                |                                 |
|                                                         | 1                                                    | 1                                                             | 1                                          | 1                                                             | 1                                                             |                                 |
| <b>Use Tools and Equipment</b><br>B                     | Use hand tools<br>B1                                 | Use portable power tools<br>B2                                | Use stationary power tools<br>B3           | Use measuring and levelling tools<br>B4                       | Use cutting, brazing and soldering equipment<br>B5            | Use ladders and platforms<br>B6 |
|                                                         | 1                                                    | 1                                                             | 1                                          | 1   2                                                         | 1                                                             | 1                               |
|                                                         | Use rigging and hoisting equipment<br>B7             |                                                               |                                            |                                                               |                                                               |                                 |
|                                                         | 1                                                    |                                                               |                                            |                                                               |                                                               |                                 |
| <b>Organize Work</b><br>C                               | Use mathematics and science<br>C1                    | Read drawings and specifications<br>C2                        | Use codes, regulations and standards<br>C3 | Use manufacturer and supplier documentation<br>C4             | Plan a project<br>C5                                          |                                 |
|                                                         | 1                                                    | 1   2   3   4                                                 | 1                                          | 1                                                             | 2     4                                                       |                                 |
| <b>Prepare and Assemble Plumbing Components</b><br>D    | Install pipe<br>D1                                   | Install valves<br>D2                                          | Install fittings<br>D3                     | Penetrate structures<br>D4                                    |                                                               |                                 |
|                                                         | 1                                                    | 1                                                             | 1                                          | 1                                                             |                                                               |                                 |
| <b>Install Sanitary and Storm Drainage Systems</b><br>E | Install sanitary drain, waste and vent systems<br>E1 | Install Storm Drainage Systems<br>E2                          | Install sanitary sewer systems<br>E3       | Test and commission sanitary and storm drainage systems<br>E4 | Maintain and repair sanitary and storm drainage systems<br>E5 |                                 |
|                                                         | 2     4                                              | 2     4                                                       | 4                                          | 2     4                                                       | 2     4                                                       |                                 |



## Section 2 Program Overview



|                                                                 |                                                                                                                                                                    |                                                                                                                                            |                                                                                                                                           |                                                                                                                                           |                                                                                                                                        |                                                                                                                                        |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <div>Install Private Sewage Systems</div> <div>F</div>          | <div>Install private sewage disposal systems</div> <div>F1</div> <div><div></div><div></div><div></div><div>4</div><div></div></div>                               | <div>Maintain and repair sewage disposal systems</div> <div>F2</div> <div><div></div><div></div><div></div><div>4</div><div></div></div>   |                                                                                                                                           |                                                                                                                                           |                                                                                                                                        |                                                                                                                                        |
| <div>Install Water Service and Distribution</div> <div>G</div>  | <div>Install water services</div> <div>G1</div> <div><div></div><div></div><div>3</div><div></div><div></div></div>                                                | <div>Install potable water distribution systems</div> <div>G2</div> <div><div></div><div></div><div>3</div><div>4</div><div></div></div>   | <div>Install private potable water supply systems</div> <div>G3</div> <div><div></div><div></div><div>3</div><div></div><div></div></div> | <div>Install water treatment systems</div> <div>G4</div> <div><div></div><div></div><div>3</div><div></div><div></div></div>              | <div>Test and commission potable water systems</div> <div>G5</div> <div><div></div><div></div><div>3</div><div></div><div></div></div> | <div>Maintain and repair potable water systems</div> <div>G6</div> <div><div></div><div></div><div>3</div><div></div><div></div></div> |
| <div>Install Fixtures and Appliances</div> <div>H</div>         | <div>Install fixtures and trim</div> <div>H1</div> <div><div></div><div>2</div><div></div><div></div><div></div></div>                                             | <div>Install appliances</div> <div>H2</div> <div><div></div><div>2</div><div>3</div><div></div><div></div></div>                           | <div>Test and commission fixtures and appliances</div> <div>H3</div> <div><div></div><div>2</div><div>3</div><div></div><div></div></div> | <div>Maintain and repair fixtures and appliances</div> <div>H4</div> <div><div></div><div>2</div><div>3</div><div></div><div></div></div> |                                                                                                                                        |                                                                                                                                        |
| <div>Install Hydronic Heating and Cooling</div> <div>I</div>    | <div>Describe the operation of hydronic heating and cooling piping systems</div> <div>I1</div> <div><div></div><div>2</div><div></div><div></div><div></div></div> | <div>Install hydronic heating and cooling systems</div> <div>I2</div> <div><div></div><div>2</div><div></div><div>4</div><div></div></div> | <div>Test and commission hydronic systems</div> <div>I3</div> <div><div></div><div>2</div><div></div><div>4</div><div></div></div>        | <div>Maintain and repair hydronic systems</div> <div>I4</div> <div><div></div><div>2</div><div></div><div>4</div><div></div></div>        |                                                                                                                                        |                                                                                                                                        |
| <div>Install Specialized Systems</div> <div>J</div>             | <div>Install medical gas systems</div> <div>J1</div> <div><div></div><div>2</div><div></div><div></div><div></div></div>                                           | <div>Install irrigation systems</div> <div>J2</div> <div><div></div><div></div><div></div><div>4</div><div></div></div>                    | <div>Install compressed air systems</div> <div>J3</div> <div><div></div><div>2</div><div></div><div></div><div></div></div>               | <div>Install fire protection systems</div> <div>J4</div> <div><div></div><div></div><div>3</div><div></div><div></div></div>              | <div>Test and commission specialized systems</div> <div>J5</div> <div><div></div><div>2</div><div>3</div><div>4</div><div></div></div> | <div>Maintain and repair specialized systems</div> <div>J6</div> <div><div></div><div>2</div><div>3</div><div>4</div><div></div></div> |
| <div>Apply Plumbing Principles</div> <div>K</div>               | <div>Apply Plumbing Principles</div> <div>K1</div> <div><div></div><div></div><div></div><div>4</div><div></div></div>                                             |                                                                                                                                            |                                                                                                                                           |                                                                                                                                           |                                                                                                                                        |                                                                                                                                        |
| <div>Install Natural Gas and Propane Systems</div> <div>L</div> | <div>Install and Service Fuel Systems</div> <div>L1</div> <div><div></div><div></div><div>3</div><div>4</div><div></div></div>                                     | <div>Install and Service Gas Equipment</div> <div>L2</div> <div><div></div><div></div><div>3</div><div>4</div><div></div></div>            | <div>Install Venting and Air Supply</div> <div>L3</div> <div><div></div><div></div><div></div><div>4</div><div></div></div>               | <div>Install and Service Controls and Safeguards</div> <div>L4</div> <div><div></div><div></div><div></div><div>4</div><div></div></div>  | <div>Use gas codes, regulations and standards</div> <div>L5</div> <div><div></div><div></div><div></div><div>4</div><div></div></div>  |                                                                                                                                        |



Program Content  
Level 1



# **LEVEL 1**

## **Plumber**



**Program Content  
Level 1**



**LINE A: USE SAFE WORK PRACTICES**

**Competency: A-1 Control Workplace Hazards**

**Learning Objectives:**

- 1 The learner will be able to describe workplace hazards.
- 2 The learner will be able to manage workplace hazards.
- 3 The learner will be able to demonstrate emergency procedures.
- 4 The learner will be able to describe non-emergency injury reporting procedures.
- 5 The learner will be able to describe how worksite safety policies are established.

| LEARNING TASKS                                           | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe short term hazards in the plumbing industry   | <ul style="list-style-type: none"> <li>• Excavations</li> <li>• Working around heavy equipment</li> <li>• Sharp objects</li> <li>• Ladders</li> <li>• Work platforms</li> <li>• Confined space</li> <li>• Electrical</li> <li>• Lockout procedures</li> <li>• Compressed gas</li> <li>• Explosive material (dust)</li> <li>• Lifting                             <ul style="list-style-type: none"> <li>– Procedures</li> </ul> </li> <li>• Personal apparel                             <ul style="list-style-type: none"> <li>– Clothing</li> <li>– Hair and beards</li> <li>– Jewellery</li> </ul> </li> <li>• Housekeeping</li> <li>• Horseplay</li> <li>• Respect for others safety</li> <li>• Constant awareness of surroundings</li> <li>• Safe attitude</li> <li>• Management of hazards</li> </ul> |
| 2 Describe long term hazards in the plumbing industry    | <ul style="list-style-type: none"> <li>• Respiratory disease</li> <li>• Repetitive strain injuries</li> <li>• Management of hazards</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3 Describe safety precautions when working at elevations | <ul style="list-style-type: none"> <li>• Wind</li> <li>• Floor openings</li> <li>• Guard rails</li> <li>• Safety lines</li> <li>• Weather</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4 Describe emergency procedures                          | <ul style="list-style-type: none"> <li>• Stressed Cables</li> <li>• Emergency shutoffs</li> <li>• Fire control systems</li> <li>• Eye wash facilities</li> <li>• Emergency exits</li> <li>• Emergency contact/phone numbers</li> <li>• Outside meeting place</li> <li>• Disaster meeting place</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



**Program Content  
Level 1**



- |   |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Describe non-emergency injury reporting procedures    | <ul style="list-style-type: none"> <li>• First aid facilities</li> <li>• Reports</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6 | Describe how a workplace safety policy is established | <ul style="list-style-type: none"> <li>• Process                             <ul style="list-style-type: none"> <li>– Hazard assessment</li> <li>– Conditions</li> <li>– Meeting requirements                                     <ul style="list-style-type: none"> <li>• Tool box</li> </ul> </li> <li>– Reporting hazards and incidents</li> <li>– Reporting injuries</li> <li>– Investigations</li> <li>– Committees</li> <li>– Employee orientation</li> <li>– First-aid</li> <li>– Hearing</li> <li>– Records and statistics</li> <li>– Lock-out</li> <li>– Non-compliance procedures</li> </ul> </li> <li>• Minimum standards                             <ul style="list-style-type: none"> <li>– Acts and Regulations</li> </ul> </li> </ul> |
| 7 | Describe lock-out and tag-out procedures              | <ul style="list-style-type: none"> <li>• Understanding of system operation</li> <li>• Components requiring lock-out</li> <li>• Identification requirements</li> <li>• Situations where lock-out is required</li> <li>• Lock-out equipment                             <ul style="list-style-type: none"> <li>– Chains</li> <li>– Tags</li> <li>– Locks</li> </ul> </li> <li>• Fabrication of isolation devices                             <ul style="list-style-type: none"> <li>– Blind flanges</li> <li>– Spades</li> </ul> </li> </ul>                                                                                                                                                                                                            |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.

**Achievement Criteria:**

- |   |             |                                                                                                                                                              |
|---|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Performance | The learner will lock-out mechanical and electrical equipment.                                                                                               |
|   | Conditions  | The learner will be given:<br>Single and multiple lock-out equipment<br>Motor control centre<br>Disconnect<br>Valve                                          |
|   | Criteria    | The learner will score 70% or better on a rating sheet that reflects the following criteria:<br>Proper procedure used<br>Sequence<br>Confirmation of lockout |



**Program Content  
Level 1**



**LINE A: USE SAFE WORK PRACTICES**

**Competency: A-2 Use Information in the OHS Regulation and WCB Standards**

**Learning Objectives:**

- 1 The learner will be able to locate the Parts of the Occupational Health and Safety Regulation as it applies to the Plumbing Worker's workplace.

| LEARNING TASKS                                                                       | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Use terms used in the Workers' Compensation Act                                    | <ul style="list-style-type: none"> <li>• Definitions, Section 1 of the Act</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2 Describe the conditions under which compensation will be paid                      | <ul style="list-style-type: none"> <li>• Part 1, Division 2 of the Act</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3 Describe the general duties of employers, employees and others                     | <ul style="list-style-type: none"> <li>• Part 2, Division 3, Sections 115-124 of the Act</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4 Describe the Workers' Compensation Act requirements for the reporting of accidents | <ul style="list-style-type: none"> <li>• Part1, Division 5, Sections 53 and 54 of the Act</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5 Describe the "Core Requirements" of the Occupational Health and Safety Regulation  | <ul style="list-style-type: none"> <li>• Definitions</li> <li>• Application</li> <li>• Rights and Responsibilities                             <ul style="list-style-type: none"> <li>– Health and safety programs</li> <li>– Young worker orientation</li> <li>– Contractor's safety policy manuals</li> <li>– Investigations and reports</li> <li>– Workplace inspections</li> <li>– Right to refuse work</li> </ul> </li> <li>• General Conditions                             <ul style="list-style-type: none"> <li>– Building and equipment safety</li> <li>– Emergency preparedness</li> <li>– Preventing violence</li> <li>– Working alone</li> <li>– Ergonomics</li> <li>– Illumination</li> <li>– Indoor air quality</li> <li>– Smoking and lunchrooms</li> </ul> </li> </ul> |



**Program Content  
Level 1**



- 6 Apply the “General Hazard Requirements” of the Occupational Health and Safety Regulation (Book 2)

- Chemical and biological substances
- Substance specific requirements
- Noise, vibration, radiation and temperature
- Personal protective clothing and equipment
- Confined spaces
- De-energization and lockout
- Fall protection
- Tools, machinery and equipment
- Ladders, scaffolds and temporary work platforms
- Cranes and hoists
- Rigging
- Mobile equipment
- Transportation of workers
- Traffic control
- Electrical safety

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE A: USE SAFE WORK PRACTICES**

**Competency: A-3 Use WHMIS**

**Learning Objectives:**

- 1 The learner will be able to describe the purpose of the Workplace Hazardous Materials Information System (WHMIS) Regulations.
- 2 The learner will be able to explain the contents of material safety data sheets (MSDS).
- 3 The learner will be able to explain the contents of a WHMIS label.
- 4 The learner will be able to apply WHMIS regulations

| LEARNING TASKS                                                                                                                                     | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 State the legislation that requires suppliers of hazardous materials to provide MSDS's and label products as a condition of sale and importation | <ul style="list-style-type: none"> <li>• Hazardous Product Act</li> <li>• Controlled Products Regulations</li> <li>• Ingredient Disclosure List</li> <li>• Hazardous Materials Information Review Act</li> <li>• Hazardous Materials Information Review Regulations</li> </ul>                                                                                                                                                                          |
| 2 State the purpose of the Workplace Hazardous Materials Information System (WHMIS)                                                                | <ul style="list-style-type: none"> <li>• Protection of Canadian workers from the adverse effects of hazardous materials through the provision of relevant information while minimizing the economic impact on industry and the disruption of trade</li> <li>• Recognition of rights                             <ul style="list-style-type: none"> <li>– Workers</li> <li>– Employers</li> <li>– Suppliers</li> <li>– Regulators</li> </ul> </li> </ul> |
| 3 Describe the key elements of WHMIS                                                                                                               | <ul style="list-style-type: none"> <li>• Material safety data sheets (MSDSs)</li> <li>• Labelling of containers of hazardous materials</li> <li>• Worker education programs</li> </ul>                                                                                                                                                                                                                                                                  |
| 4 Describe the responsibilities of suppliers under WHMIS                                                                                           | <ul style="list-style-type: none"> <li>• Provide                             <ul style="list-style-type: none"> <li>– MSDSs</li> <li>– Labels</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                    |
| 5 Describe the responsibilities of employers under WHMIS                                                                                           | <ul style="list-style-type: none"> <li>• Provide                             <ul style="list-style-type: none"> <li>– MSDSs</li> <li>– Labels</li> <li>– Work education programs in the workplace</li> </ul> </li> </ul>                                                                                                                                                                                                                                |
| 6 Describe information to be disclosed on a MSDS                                                                                                   | <ul style="list-style-type: none"> <li>• Hazardous ingredients</li> <li>• Preparation information</li> <li>• Product information</li> <li>• Physical data</li> <li>• Fire or explosion</li> <li>• Reactivity data</li> <li>• Toxicological properties</li> <li>• Preventive measures</li> <li>• First-aid measures</li> </ul>                                                                                                                           |



**Program Content  
Level 1**



- 7 Identify symbols found on WHMIS labels and their meaning
    - Compressed gases
    - Flammable and combustible materials
    - Oxidizing materials
    - Poisonous and infectious materials
      - Materials Causing Immediate and Serious Toxic Effects
      - Materials Causing Other Toxic Effects
      - Biohazardous Infectious Materials
    - Corrosive Materials
    - Dangerously Reactive Materials
  - 8 Apply WHMIS regulations as they apply to hazardous materials used in the shop
    - Use, storage and disposal of shop materials
- Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE A: USE SAFE WORK PRACTICES**

**Competency: A-4 Use Personal Protective Equipment**

**Learning Objectives:**

- 1 The learner will be able to select and use personal protective equipment.

| LEARNING TASKS                                        | CONTENT                                                                                                                                                                                                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe personal protective equipment requirements | <ul style="list-style-type: none"> <li>• Safety footwear</li> <li>• Eye protection</li> <li>• Ear protection</li> <li>• Head protection</li> <li>• Respiratory protection</li> <li>• Clothing</li> <li>• Fall protection</li> </ul> |
| 2 Use personal protective equipment                   | <ul style="list-style-type: none"> <li>• Selection</li> <li>• Purpose</li> <li>• Operating procedures</li> <li>• Training requirements</li> <li>• Inspection</li> <li>• Maintenance</li> <li>• Storage</li> </ul>                   |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.

**Achievement Criteria:**

|             |                                                                                                                                                                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance | The learner will use personal protective equipment.                                                                                                                                                                                                 |
| Conditions  | The learner will be given:<br>Personal protective equipment                                                                                                                                                                                         |
| Criteria    | A suggested method of rating a student in this competency might be for the student to start with 100% and marks be deducted for each infraction that occurs while working in the shop. This would be reflected in the appropriate shop competencies |



**Program Content  
Level 1**



**LINE A: USE SAFE WORK PRACTICES**

**Competency: A-5 Practice Fire Prevention**

**Learning Objectives:**

- 1 The learner will be able to prevent and identify various classes of fires.
- 2 The learner will be able to select appropriate fire extinguishers for the class of fire and environmental condition.

| LEARNING TASKS                                                                                                                                                 | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe the conditions necessary to support a fire                                                                                                          | <ul style="list-style-type: none"> <li>• Air</li> <li>• Fuel</li> <li>• Heat</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2 Describe the classes of fires according to the materials being burned                                                                                        | <ul style="list-style-type: none"> <li>• Class A</li> <li>• Class B</li> <li>• Class C</li> <li>• Class D</li> <li>• Symbols and colours</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                               |
| 3 Apply preventative fire safety precautions when working near, handling or storing flammable liquids or gases, combustible materials and electrical apparatus | <ul style="list-style-type: none"> <li>• Hot work permit (site specific)</li> <li>• Handling and storage of flammable materials</li> <li>• Symbols</li> <li>• Fuels                             <ul style="list-style-type: none"> <li>– Diesel</li> <li>– Gasoline</li> <li>– Propane</li> <li>– Natural Gas</li> </ul> </li> <li>• Ventilation                             <ul style="list-style-type: none"> <li>– Purging</li> </ul> </li> <li>• Lubricants</li> <li>• Oily rags</li> <li>• Combustible metals</li> <li>• Aerosols</li> </ul> |
| 4 Describe the considerations and steps to be taken prior to fighting a fire.                                                                                  | <ul style="list-style-type: none"> <li>• Warning others and fire department</li> <li>• Evacuation of others</li> <li>• Fire contained and not spreading</li> <li>• Personal method of egress</li> <li>• Training</li> </ul>                                                                                                                                                                                                                                                                                                                       |
| 5 Describe the procedure for using a fire extinguisher                                                                                                         | <ul style="list-style-type: none"> <li>• Extinguisher selection</li> <li>• P.A.S.S.                             <ul style="list-style-type: none"> <li>– Pull</li> <li>– Aim</li> <li>– Squeeze</li> <li>– Sweep</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                           |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE B: USE TOOLS AND EQUIPMENT**

**Competency: B-1 Use Hand Tools**

**Learning Objectives:**

- 1 The learner will be able to select hand tools appropriate to plumbing processes.
- 2 The learner will be able to use hand tools.
- 3 The learner will be able to inspect and maintain hand tools.

**LEARNING TASKS**

**CONTENT**

- |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe hand tools used in the trade | <ul style="list-style-type: none"> <li>• Cutting tools</li> <li>• Measuring and marking tools</li> <li>• Bracing and securing tools</li> <li>• Hammering tools</li> <li>• Leveling tools                             <ul style="list-style-type: none"> <li>– Pitch levels</li> </ul> </li> <li>• Wrenches and pliers</li> <li>• Screwdrivers</li> <li>• Chiseling tools</li> <li>• Squaring tools</li> <li>• Threading tools</li> <li>• Flaring and swaging tools</li> <li>• Tubing benders</li> <li>• Expanding and crimping tools</li> </ul> |
| 2 Use hand tools                        | <ul style="list-style-type: none"> <li>• Types</li> <li>• Parts</li> <li>• Purpose/Uses</li> <li>• Procedures/Operations</li> <li>• Safety</li> <li>• Adjustment</li> <li>• Inspection</li> <li>• Maintenance</li> <li>• Storage</li> </ul>                                                                                                                                                                                                                                                                                                     |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE B: USE TOOLS AND EQUIPMENT**

**Competency: B-2 Use Portable Power Tools**

**Learning Objectives:**

- 1 The learner will be able to select portable power tools appropriate to plumbing processes.
- 2 The learner will be able to use portable power tools.
- 3 The learner will be able to inspect and maintain power tools.

| LEARNING TASKS                  | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe portable power tools | <ul style="list-style-type: none"> <li>• Types                             <ul style="list-style-type: none"> <li>– Electric</li> <li>– Pneumatic</li> <li>– Powder actuated</li> </ul> </li> <li>• Certification requirements</li> <li>• Cutting tools</li> <li>• Grinding and abrasive tools</li> <li>• Threading tools</li> <li>• Drilling and boring tools</li> <li>• Specialty tools                             <ul style="list-style-type: none"> <li>– Fusion tools</li> <li>– Power crimpers</li> <li>– Grooving tools</li> <li>– T-Drill</li> </ul> </li> <li>• Accessories</li> </ul> |
| 2 Use portable power tools      | <ul style="list-style-type: none"> <li>• Types</li> <li>• Parts</li> <li>• Purpose/Uses</li> <li>• Procedures/Operations</li> <li>• Safety</li> <li>• Adjustment</li> <li>• Inspection</li> <li>• Maintenance</li> <li>• Storage</li> </ul>                                                                                                                                                                                                                                                                                                                                                      |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE B: USE TOOLS AND EQUIPMENT**

**Competency: B-3 Use Stationary Power Tools**

**Learning Objectives:**

- 1 The learner will be able to select stationary power tools appropriate to plumbing processes.
- 2 The learner will be able to use shop equipment.
- 3 The learner will be able to inspect and maintain shop equipment.

| LEARNING TASKS                    | CONTENT                                                                                                                                                                                                                                                                 |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe stationary power tools | <ul style="list-style-type: none"> <li>• Cutting tools</li> <li>• Grinding and abrasive tools</li> <li>• Threading tools</li> <li>• Drilling and boring tools</li> <li>• Specialty tools</li> <li>• Accessories</li> <li>• Grooving tools</li> </ul>                    |
| 2 Use stationary power tools      | <ul style="list-style-type: none"> <li>• Types</li> <li>• Parts</li> <li>• Purpose/Uses</li> <li>• Procedures/Operations</li> <li>• Capacities</li> <li>• Safety</li> <li>• Adjustment</li> <li>• Inspection</li> <li>• Minor maintenance</li> <li>• Storage</li> </ul> |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE B: USE TOOLS AND EQUIPMENT**

**Competency: B-4 Use Measuring and Levelling Tools**

**Learning Objectives:**

- 1 The learner will be able to describe pressure measuring tools.
- 2 The learner will be able to use pressure measuring tools.

| LEARNING TASKS                         | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe pressure measuring tools    | <ul style="list-style-type: none"> <li>• Manometers                             <ul style="list-style-type: none"> <li>– Types</li> <li>– Filling</li> <li>– Fluids</li> </ul> </li> <li>• Mechanical gauges                             <ul style="list-style-type: none"> <li>– Analog</li> <li>– Digital</li> <li>– Standard</li> <li>– Compound</li> </ul> </li> </ul>                                                                                                 |
| 2 Use manometers and mechanical gauges | <ul style="list-style-type: none"> <li>• Gas pressures                             <ul style="list-style-type: none"> <li>– Standing line pressures</li> <li>– Operating line pressures</li> <li>– Gauge pressures</li> <li>– Absolute pressures</li> <li>– Conversion between different pressures</li> </ul> </li> <li>• Diagnostics                             <ul style="list-style-type: none"> <li>– Pressure tests</li> <li>– Leak detection</li> </ul> </li> </ul> |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.

**Achievement Criteria:**

|             |                                                                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance | The learner will use pressure gauges and manometers to measure standing and operating pressures.                                                                                                                     |
| Conditions  | The learner will be given:<br>A gas piping system<br>Mechanical gauges<br>Manometers                                                                                                                                 |
| Criteria    | The learner will score 70% or better on a rating sheet that reflects the following criteria:<br>Selection of test method<br>Use of measurement devices<br>Leak detection<br>Correction<br>Verification of correction |



**Program Content  
Level 1**



**LINE B: USE TOOLS AND EQUIPMENT**

**Competency: B-5 Use Cutting, Brazing and Soldering Equipment**

**Learning Objectives:**

- 1 The learner will be able to select cutting, brazing and soldering equipment appropriate to plumbing processes.
- 2 The learner will be able to use cutting brazing and soldering equipment.
- 3 The learner will be able to inspect and maintain cutting, brazing and soldering equipment.

| LEARNING TASKS                                       | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe oxy-acetylene equipment                   | <ul style="list-style-type: none"> <li>• Parts                             <ul style="list-style-type: none"> <li>– Oxygen cylinders</li> <li>– Acetylene cylinders</li> <li>– Regulators</li> <li>– Gauges</li> <li>– Spark arrestors</li> <li>– Torches</li> </ul> </li> <li>• Safety Devices</li> </ul>                                                                                                                                                                                                                                                            |
| 2 Describe cutting, brazing and soldering techniques | <ul style="list-style-type: none"> <li>• Selection</li> <li>• Procedure</li> <li>• Limitations</li> <li>• Inspection</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3 Use oxy-acetylene equipment                        | <ul style="list-style-type: none"> <li>• Safety</li> <li>• Transportation of Dangerous Goods Legislation</li> <li>• Ventilation</li> <li>• Flammable material recognition</li> <li>• Types</li> <li>• Parts</li> <li>• Purpose/Uses</li> <li>• Procedures/Operations                             <ul style="list-style-type: none"> <li>– Setup</li> <li>– Take down</li> <li>– Tip selection</li> <li>– Alloy selection</li> <li>– Flux selection</li> </ul> </li> <li>• Adjustment</li> <li>• Inspection</li> <li>• Minor maintenance</li> <li>• Storage</li> </ul> |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**Achievement Criteria:**

- |   |                           |                                                                                                                                                                               |
|---|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Performance<br>Conditions | <p>The learner will braze and solder</p> <p>The learner will be given:</p> <p>Materials</p> <p>Specifications</p>                                                             |
|   | Criteria                  | <p>The learner will score 70% or better on a rating sheet that reflects the following criteria:</p> <p>Penetration</p> <p>Accuracy</p> <p>Appearance</p> <p>Pressure test</p> |
| 2 | Performance<br>Conditions | <p>The learner will cut carbon steel</p> <p>The learner will be given:</p> <p>Materials</p> <p>Specifications</p>                                                             |
|   | Criteria                  | <p>The learner will score 70% or better on a rating sheet that reflects the following criteria:</p> <p>Appearance</p> <p>Accuracy</p>                                         |



**Program Content  
Level 1**



**LINE B: USE TOOLS AND EQUIPMENT**

**Competency: B-6 Use Ladders and Platforms**

**Learning Objectives:**

- 1 The learner will be able to describe ladders and elevated platforms.
- 2 The learner will be able to select and use ladders and platforms.

| LEARNING TASKS                            | CONTENT                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe ladders and elevated platforms | <ul style="list-style-type: none"> <li>• Types                             <ul style="list-style-type: none"> <li>– Ladders</li> <li>– Platforms</li> <li>– Lifts</li> </ul> </li> <li>• Uses</li> <li>• Safety</li> <li>• Fall arrest equipment</li> <li>• Hazard recognition</li> <li>• Government regulations</li> </ul> |
| 2 Use ladders and elevated platforms      | <ul style="list-style-type: none"> <li>• Selection</li> <li>• Operating procedures</li> <li>• Limitations</li> <li>• Securing</li> <li>• Inspection</li> <li>• Maintenance</li> <li>• Storage</li> </ul>                                                                                                                    |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE B: USE TOOLS AND EQUIPMENT**

**Competency: B-7 Use Rigging and Hoisting Equipment**

**Learning Objectives:**

- 1 The learner will be able to describe hoisting, lifting and rigging equipment.
- 2 The learner will be able to tie knots, bends and hitches.
- 3 The learner will be able to select and use hoisting, lifting and rigging equipment.

| LEARNING TASKS                                     | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe the principles of lifting and hoisting  | <ul style="list-style-type: none"> <li>• Mechanical advantage</li> <li>• Balance points</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2 Describe hoisting, lifting and rigging equipment | <ul style="list-style-type: none"> <li>• Lifting and Hoisting                             <ul style="list-style-type: none"> <li>– Cranes</li> <li>– Boom trucks</li> <li>– Loaders</li> <li>– Tirsors</li> <li>– Come-alongs</li> <li>– Tuggers</li> <li>– Chain falls</li> </ul> </li> <li>• Accessories                             <ul style="list-style-type: none"> <li>– Slings/chokes</li> <li>– Shackles</li> <li>– Chains</li> <li>– Tag lines</li> <li>– Spreader bars</li> <li>– Snatch blocks</li> <li>– Turnbuckles</li> <li>– Softeners</li> </ul> </li> </ul> |
| 3 Describe lifting and hoisting communication      | <ul style="list-style-type: none"> <li>• Types                             <ul style="list-style-type: none"> <li>– Hand signals</li> <li>– Communication with the operator</li> <li>– Communication with others</li> </ul> </li> <li>• Purpose/meaning</li> </ul>                                                                                                                                                                                                                                                                                                            |
| 4 Tie knots, bends and hitches                     | <ul style="list-style-type: none"> <li>• Types                             <ul style="list-style-type: none"> <li>– Half hitch</li> <li>– Timber hitch</li> <li>– Rolling hitch</li> <li>– Clove hitch</li> <li>– Figure of eight</li> <li>– Reef knot</li> <li>– Sheet bend</li> <li>– Bowline</li> <li>– Bowline on a bight</li> <li>– Trucker's hitch</li> </ul> </li> <li>• Purposes</li> <li>• Limitations</li> </ul>                                                                                                                                                    |
| 5 Use hoisting, lifting and rigging equipment      | <ul style="list-style-type: none"> <li>• Safety</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



**Program Content  
Level 1**



- Certification requirements
- Estimation of weights
- Equipment capacities
- Equipment selection
- Lifting location
- Operating procedures
- Communication/hand signals
- Securing of loads
- Equipment inspection
- Equipment maintenance
- Equipment storage
- Disposal procedures

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.

**Achievement Criteria:**

|             |                                                                                              |
|-------------|----------------------------------------------------------------------------------------------|
| Performance | The learner will set-up and lift loads                                                       |
| Conditions  | The learner will be given:                                                                   |
|             | Two point lifts                                                                              |
|             | Three point lifts                                                                            |
| Criteria    | The learner will score 70% or better on a rating sheet that reflects the following criteria: |
|             | Proper equipment use                                                                         |



**Program Content  
Level 1**



**LINE C: ORGANIZE WORK**

**Competency: C-1 Use Mathematics and Science**

**Learning Objectives:**

- 1 The learner will be able to use mathematics and science to solve problems in the plumbing trade.

| LEARNING TASKS                                                                           | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Add, subtract, multiply and divide whole numbers, fractions, decimals and percentages. | <ul style="list-style-type: none"> <li>• Whole numbers, fractions, decimals, percentages</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                   |
| 2 Transpose formulas                                                                     | <ul style="list-style-type: none"> <li>• Processes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3 Use formulas to calculate area.                                                        | <ul style="list-style-type: none"> <li>• Circles, cylinders, squares, rectangles, triangles</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                |
| 4 Use formulas to calculate volumes.                                                     | <ul style="list-style-type: none"> <li>• Cylinders, rectangular tanks, square tanks</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                        |
| 5 Use formulas to calculate capacity.                                                    | <ul style="list-style-type: none"> <li>• Imperial gallons, US gallons, Liters</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                              |
| 6 Perform conversions                                                                    | <ul style="list-style-type: none"> <li>• Length</li> <li>• Volume</li> <li>• Capacity</li> <li>• Area</li> <li>• Mass</li> <li>• Weight</li> <li>• Heat energy</li> <li>• Temperature                             <ul style="list-style-type: none"> <li>– Fahrenheit</li> <li>– Centigrade</li> <li>– Kelvin</li> <li>– Rankin</li> </ul> </li> <li>• Pressure                             <ul style="list-style-type: none"> <li>– Absolute</li> <li>– Gauge</li> </ul> </li> </ul> |
| 7 Calculate piping measurements                                                          | <ul style="list-style-type: none"> <li>• Terms                             <ul style="list-style-type: none"> <li>– Thread allowance</li> <li>– Fitting allowance</li> <li>– End to end</li> <li>– End to centre</li> <li>– Centre to centre</li> <li>– Face to face</li> <li>– End to back</li> <li>– Back to back</li> <li>– Socket depth</li> </ul> </li> <li>• Calculations</li> <li>• Grades</li> <li>• Elevations</li> <li>• Benchmarks</li> </ul>                              |



**Program Content  
Level 1**



- |    |                                                                                                 |                                                                                                                                                                                                                            |
|----|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | Use the Pythagorean theorem of right angles.                                                    | <ul style="list-style-type: none"> <li>• Hypotenuse, side opposite, side adjacent</li> </ul>                                                                                                                               |
| 9  | Calculate offsets using the applicable trigonometric function.                                  | <ul style="list-style-type: none"> <li>• Sine, cosine, tangent</li> </ul>                                                                                                                                                  |
| 10 | Calculate the required measurements for a parallel piping offset.                               | <ul style="list-style-type: none"> <li>• Equal spread</li> <li>• Rolling</li> <li>• Jumper</li> </ul>                                                                                                                      |
| 11 | Define the properties of matter.                                                                | <ul style="list-style-type: none"> <li>• Density</li> <li>• Cohesion</li> <li>• Adhesion</li> <li>• Tensile strength</li> <li>• Ductility</li> <li>• Malleability</li> <li>• Elasticity</li> <li>• Conductivity</li> </ul> |
| 12 | Use Pascal's theory of pressure and force.                                                      | <ul style="list-style-type: none"> <li>• Pounds</li> <li>• Newton's</li> </ul>                                                                                                                                             |
| 13 | Use Archimedes' principles of displacement and floatation.                                      | <ul style="list-style-type: none"> <li>• Specific weight</li> <li>• Specific gravity</li> </ul>                                                                                                                            |
| 14 | Define mechanical advantage as it relates to fluid power.                                       | <ul style="list-style-type: none"> <li>• Hydraulics</li> <li>• Hydrostatics</li> </ul>                                                                                                                                     |
| 15 | Describe factors that affect fluid flow in a piping system.                                     | <ul style="list-style-type: none"> <li>• Viscosity</li> <li>• Laminar flow</li> <li>• Turbulent flow</li> <li>• Velocity</li> <li>• Piping material</li> <li>• Fittings</li> </ul>                                         |
| 16 | Describe factors that affect gas volumes and pressures.                                         | <ul style="list-style-type: none"> <li>• Boyle's Law</li> <li>• Charles Law</li> <li>• Combined Gas Law</li> </ul>                                                                                                         |
| 17 | Calculate the expansion and contraction of various piping materials due to heating and cooling. | <ul style="list-style-type: none"> <li>• Ferrous</li> <li>• Non-ferrous</li> <li>• Thermoplastic</li> </ul>                                                                                                                |
| 18 | Define methods of heat transfer.                                                                | <ul style="list-style-type: none"> <li>• Conduction</li> <li>• Convection</li> <li>• Radiation</li> </ul>                                                                                                                  |
| 19 | Perform heat load calculations.                                                                 | <ul style="list-style-type: none"> <li>• Sensible, latent &amp; specific heat</li> </ul>                                                                                                                                   |



**Program Content  
Level 1**



- 20 Describe characteristics of hydrocarbon gases

- Chemistry
- Heat value
- Specific gravity
- Flow characteristics
- Ignition temperature

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE C: ORGANIZE WORK**

**Competency: C-2 Read Drawings and Specifications**

**Learning Objectives:**

- 1 The learner will be able to use drafting tools.
- 2 The learner will be able to use drafting symbols, lettering and line conventions.
- 3 The learner will be able to convert between isometric and orthographic projections.
- 4 The learner will be able to interpret information found on a set of drawings.

| LEARNING TASKS                                                              | CONTENT                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe drafting tools and materials.                                    | <ul style="list-style-type: none"> <li>• Drawing boards</li> <li>• T-squares</li> <li>• Triangles</li> <li>• Protractors</li> <li>• French curves</li> <li>• Pencils</li> <li>• Erasers and shields</li> <li>• Scale rulers</li> <li>• Compasses</li> <li>• Dividers</li> <li>• Templates</li> </ul> |
| 2 Use scale rulers to determine actual dimensions from a piping diagram.    | <ul style="list-style-type: none"> <li>• Scale rulers</li> </ul>                                                                                                                                                                                                                                     |
| 3 Describe piping and fixture symbols currently used in the plumbing trade. | <ul style="list-style-type: none"> <li>• Tees</li> <li>• Wyes</li> <li>• Flanges</li> <li>• Elbows</li> <li>• Valves</li> <li>• Water closets</li> <li>• Urinals</li> <li>• Sinks</li> <li>• Tubs and showers</li> </ul>                                                                             |
| 4 Describe lettering and dimensioning of piping diagrams.                   | <ul style="list-style-type: none"> <li>• Hidden lines</li> <li>• Object lines</li> <li>• Border lines</li> <li>• Center lines</li> <li>• Dimension lines</li> <li>• Extension lines</li> <li>• Phantom lines</li> </ul>                                                                              |
| 5 Describe drawing projections                                              | <ul style="list-style-type: none"> <li>• Isometric</li> <li>• Orthographic</li> <li>• Oblique</li> <li>• Views</li> </ul>                                                                                                                                                                            |
| 6 Use drawing projections.                                                  | <ul style="list-style-type: none"> <li>• Isometric</li> <li>• Orthographic</li> <li>• Conversion from one to the other</li> </ul>                                                                                                                                                                    |



**Program Content  
Level 1**



- |   |                                      |                                                                                                                                |
|---|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 7 | Use tools to sketch irregular shapes | <ul style="list-style-type: none"> <li>• French curves</li> <li>• Templates</li> <li>• Compasses</li> <li>• Splines</li> </ul> |
|---|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.

**Achievement Criteria:**

|             |                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Performance | The learner will create an isometric drawing from a set of orthographic drawings.                                                           |
| Conditions  | The learner will be given:<br>A set of orthographic drawings<br>Sketching tools<br>Paper                                                    |
| Criteria    | The learner will score 70% or better on a rating sheet that reflects the following criteria:<br>Correct use of symbols, lines and lettering |



**Program Content  
Level 1**



**LINE C: ORGANIZE WORK**

**Competency: C-3 Use Codes, Regulations and Standards**

**Learning Objectives:**

- 1 The learner will be able to identify codes and standards encountered in the plumbing trade.
- 2 The learner will be able to identify various environmental agencies that affect the plumbing trade.

| LEARNING TASKS                                                                              | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Identify code, standards and organizations affecting the plumbing trade                   | <ul style="list-style-type: none"> <li>• American National Standards Institute (ANSI)</li> <li>• American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)</li> <li>• American Society of Plumbing Engineers (ASPE)</li> <li>• American Society of Testing and Materials (ASTM)</li> <li>• American Water Works Association (AWWA)</li> <li>• National Standard of Canada (CAN)</li> <li>• Canadian Commission on Building and Fire Codes (CCBFC)</li> <li>• Canadian Gas Association (CGA)</li> <li>• Canadian General Standards Board (CGSB)</li> <li>• Canadian Standards Association (CSA)</li> <li>• National Building Code of Canada (NBC)</li> <li>• National Fire Protection Association (NFPA)</li> <li>• Underwriters' Laboratories of Canada (ULC)</li> <li>• Municipal bylaws                             <ul style="list-style-type: none"> <li>– Permits</li> </ul> </li> <li>• Health Act</li> <li>• Safety Standards Act</li> <li>• Leadership in Energy and Environmental Design (LEED)</li> <li>• Planning</li> <li>• Installation</li> <li>• Maintenance</li> </ul> |
| 2 Describe where the various codes and standards are encountered within the plumbing trade. | <ul style="list-style-type: none"> <li>• Planning</li> <li>• Installation</li> <li>• Maintenance</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3 Identify various environmental agencies with concerns to sewage disposal.                 | <ul style="list-style-type: none"> <li>• BC Health Department</li> <li>• Workers' Compensation Board (WCB) Regulations (Worksafe BC)</li> <li>• BC Water and Waste Association (BCWWA)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.

**Achievement Criteria:**

|             |                                                                              |
|-------------|------------------------------------------------------------------------------|
| Performance | The learner will use codes and standards in the application of shop projects |
| Conditions  | The learner will be given:                                                   |
|             | Projects                                                                     |
|             | Codes and standards                                                          |
| Criteria    | This would be reflected in the appropriate shop competencies.                |



**Program Content  
Level 1**



**LINE C: ORGANIZE WORK**

**Competency: C-4 Use Manufacturer and Supplier Documentation**

**Learning Objectives:**

- 1 The learner will be able to describe documentation encountered in the plumbing trade.
- 2 The learner will be able to describe information contained in manufacturer and supplier documentation.
- 3 The learner will be able to describe how to use the internet to source manufacturer's documentation.

**LEARNING TASKS**

**CONTENT**

- |                                                                             |                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe documentation encountered in the plumbing trade                  | <ul style="list-style-type: none"> <li>• Tool and equipment documentation</li> <li>• Material Safety and Data Sheets</li> <li>• System component documentation</li> <li>• Proprietary product documentation</li> <li>• Certification agencies</li> </ul> |
| 2 Describe information contained in manufacturer and supplier documentation | <ul style="list-style-type: none"> <li>• Installation instructions and requirements</li> <li>• Operation and maintenance manuals</li> <li>• Product specifications</li> <li>• Warranty information</li> </ul>                                            |
| 3 Describe how to use the internet to source manufacturer's documentation   | <ul style="list-style-type: none"> <li>• Manufacturer's web-sites</li> <li>• Search engines</li> </ul>                                                                                                                                                   |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE D: PREPARE AND ASSEMBLE PLUMBING COMPONENTS**

**Competency: D-1 Install Pipe**

**Learning Objectives:**

- 1 The learner will be able to describe piping and tubing materials used in the plumbing trade.
- 2 The learner will be able to join piping.

| LEARNING TASKS                          | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe piping and tubing materials. | <ul style="list-style-type: none"> <li>• Copper pipe and tubing</li> <li>• Cast iron soil and pressure</li> <li>• Carbon and stainless steel pipe and tubing</li> <li>• Brass pipe and tubing</li> <li>• Thermoplastic pipe and tubing</li> <li>• Thermoset plastic pipe</li> <li>• Pyrex pipe</li> <li>• Specialty piping and tubing</li> </ul>                                                                                                                                                                                                                                                                                                                                |
| 2 Describe the method of manufacture.   | <ul style="list-style-type: none"> <li>• Carbon and stainless steel</li> <li>• Copper pipe and tubing</li> <li>• Thermoplastic pipe and tubing</li> <li>• Cast iron pipe</li> <li>• Schedules</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3 Describe methods of pipe support      | <ul style="list-style-type: none"> <li>• Types                             <ul style="list-style-type: none"> <li>– Hangers</li> <li>– Supports</li> <li>– Seismic</li> <li>– Anchors</li> <li>– Guides</li> <li>– Slide plates</li> </ul> </li> <li>• Compatibility with piping</li> <li>• Size</li> <li>• Spacing</li> <li>• Fasteners                             <ul style="list-style-type: none"> <li>– Beam clamps</li> <li>– Drop-in anchors</li> <li>– Draw bolts</li> <li>– Toggle bolts</li> </ul> </li> <li>• Interferences</li> <li>• Insulation thickness</li> <li>• Elevation of hangers</li> <li>• Attachment methods</li> <li>• Tools and equipment</li> </ul> |
| 4 Describe methods of protecting piping | <ul style="list-style-type: none"> <li>• Frost protection                             <ul style="list-style-type: none"> <li>– Heat tape</li> <li>– Frost boxes</li> <li>– Circulating pumps</li> </ul> </li> <li>• Ultraviolet protection</li> <li>• Corrosion protection                             <ul style="list-style-type: none"> <li>– Coatings</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                 |



**Program Content  
Level 1**



- Tape
  - Physical damage
    - Protective plates
    - Sleeving
    - Metal stud grommets
  - Protective measures
    - Insulating
    - Water treatment
    - Dielectric protection
  
- 5 Describe the inspection of pipe before installation
  - Potential defects
    - Pin holes
    - Cracked fittings
    - Bent ends
    - Uneven casting
    - Damaged pipe and coatings
  - Environmental effects
  - Inspection techniques
    - Visual
    - Sounding of cast iron pipe and fittings
  - Interpretation of markings
  - Checking against specifications
  
- 6 Install tubing and pipe
  - Types
  - Sizes
  - Uses
  - Hazards
  - Safety
  - Measuring procedures
  - Selection for application
  - Calculations
    - Length
    - Fitting allowances
    - Offsets
    - Gain or loss
  - Cutting
  - Bending
  - Joining Methods
  - Common fitting angles
  - Tools and equipment

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**Achievement Criteria:**

|             |                                                                                                                                                                                                                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance | The learner will install piping projects that include the following types of pipes:<br>Plastic<br>Copper<br>Carbon steel                                                                                                                                                                            |
| Conditions  | The learner will be given:<br>Project specifications<br>Tools and materials                                                                                                                                                                                                                         |
| Criteria    | The learner will score 70% or better on a rating sheet that reflects the following criteria:<br>Threading<br>Soldering<br>Brazing<br>Solvent welding<br>Crimping/Expanding<br>Flaring<br>Roll grooving<br>Fusion<br>Power crimping<br>Compression fittings<br>Pressure testing<br>Mechanical joints |



**Program Content  
Level 1**



**LINE D: PREPARE AND ASSEMBLE PLUMBING COMPONENTS**

**Competency: D-2 Install Valves**

**Learning Objectives:**

- 1 The learner will be able to describe valves used in the plumbing trade.
- 2 The learner will be able to select and install valves.

| LEARNING TASKS                | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe basic valve types. | <ul style="list-style-type: none"> <li>• Types</li> <li>• Purpose</li> <li>• Materials</li> <li>• Seating design</li> <li>• Orientation</li> <li>• Temperature limitations</li> <li>• Pressure limitations</li> <li>• Applications</li> <li>• Specifications</li> <li>• Special purpose                             <ul style="list-style-type: none"> <li>– Pressure relief</li> <li>– Temperature relief</li> <li>– Pressure reducing/Regulator</li> </ul> </li> </ul> |
| 2 Install valves              | <ul style="list-style-type: none"> <li>• Selection                             <ul style="list-style-type: none"> <li>– Applications</li> <li>– Specifications</li> <li>– Pressure limitations</li> </ul> </li> <li>• Orientation</li> <li>• Installation requirements</li> </ul>                                                                                                                                                                                        |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE D: PREPARE AND ASSEMBLE PLUMBING COMPONENTS**

**Competency: D-3 Install Fittings**

**Learning Objectives:**

- 1 The learner will be able to describe fittings and connection methods used in the plumbing trade.
- 2 The learner will be able to select and install fittings.

| LEARNING TASKS                                  | CONTENT                                                                                                                                                                                            |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe fittings used in the plumbing trade. | <ul style="list-style-type: none"> <li>• Purpose</li> <li>• Types</li> <li>• Applications</li> <li>• Limitations</li> </ul>                                                                        |
| 2 Describe connection methods of fittings.      | <ul style="list-style-type: none"> <li>• Welded</li> <li>• Threaded</li> <li>• Compression</li> <li>• Flared</li> <li>• Soldered/brazed</li> <li>• Mechanical</li> <li>• Solvent welded</li> </ul> |
| 3 Select fittings                               | <ul style="list-style-type: none"> <li>• Applications</li> <li>• Specifications</li> </ul>                                                                                                         |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



**Program Content  
Level 1**



**LINE D: PREPARE AND ASSEMBLE PLUMBING COMPONENTS**

**Competency: D-4 Penetrate Structures**

**Learning Objectives:**

- 1 The learner will be able to use acceptable methods of structure penetration.
- 2

| LEARNING TASKS                                                   | CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Describe considerations when making penetrations in structures | <ul style="list-style-type: none"> <li>• Structural integrity</li> <li>• Fire separation</li> <li>• Interference with other building components and systems</li> <li>• Hidden components behind the surface</li> <li>• Sleeve installation                             <ul style="list-style-type: none"> <li>– Fabrication</li> <li>– Timing</li> <li>– Sealing around                                     <ul style="list-style-type: none"> <li>› Fire stopping</li> <li>› Water-proofing</li> <li>› Isolating groundwater</li> <li>› Protecting pipe</li> <li>› Preventing oxidation</li> </ul> </li> <li>– Sizing</li> <li>– Positioning</li> <li>– Fastening</li> <li>– Protection during concrete pour</li> </ul> </li> </ul> |
| 2 Describe acceptable methods of structure penetration.          | <ul style="list-style-type: none"> <li>• B.C. Building Code</li> <li>• Manufacturer's literature</li> <li>• Fire stopping                             <ul style="list-style-type: none"> <li>– Doughnut type</li> <li>– Gasket type</li> <li>– Caulking</li> <li>– Mineral wool</li> </ul> </li> <li>• Fire rating requirements</li> <li>• Required gaps</li> <li>• Codes, specifications and requirements</li> <li>• Fastening or wrapping fire stopping to pipes</li> <li>• Sealing of vertical and horizontal penetrations</li> <li>• Selection of sealants according to specifications</li> </ul>                                                                                                                                |

**Theory Assessment:** The learner must score a minimum of 70 percent on a written examination.



## Program Overview



## Occupational Analysis Chart

## STEAMFITTER/PIPEFITTER

**Occupation Description:** “Steamfitter/Pipefitter” means a person who installs, alters or repairs steam and hot water boilers and system for the generation and conveyance of steam and hot water and process piping systems in industrial project or manufacturing plants.

|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|----------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------|--------------------------------|
| <b>Safe Work Practices</b><br>A                    | Control workplace hazards<br>A1                           | Describe occupational health and safety regulations<br>A2 | Describe WHMIS and hazardous materials safety<br>A3 | Use personal protective equipment<br>A4           | Practice fire prevention<br>A5           |                                |
|                                                    | 1                                                         | 1                                                         | 1                                                   | 1                                                 | 1                                        |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
| <b>Use Tools and Equipment</b><br>B                | Use hand tools<br>B1                                      | Use ladders and platforms<br>B2                           | Use cutting, brazing and soldering equipment<br>B3  | Use measuring and leveling tools<br>B4            | Use rigging and hoisting equipment<br>B5 | Use portable power tools<br>B6 |
|                                                    | 1                                                         | 1                                                         | 1                                                   | 1 2                                               | 1 2                                      | 1                              |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    | Use stationary power tools<br>B7                          |                                                           |                                                     |                                                   |                                          |                                |
|                                                    | 1                                                         |                                                           |                                                     |                                                   |                                          |                                |
| <b>Organize Work</b><br>C                          | Use mathematics and science (including electricity)<br>C1 | Read drawings and specifications<br>C2                    | Use codes, regulations and standards<br>C3          | Use manufacturer and supplier documentation<br>C4 | Plan a project<br>C5                     |                                |
|                                                    | 1 2                                                       | 1 2 3 4                                                   | 1                                                   | 1                                                 | 2 3 4                                    |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
| <b>Prepare and Assemble Piping Components</b><br>D | Join pipe<br>D1                                           | Select and install valves<br>D2                           | Select and install fittings<br>D3                   | Describe methods of penetrating structures<br>D4  | Describe pumps<br>D5                     |                                |
|                                                    | 1 2                                                       | 1                                                         | 1                                                   | 1                                                 | 2                                        |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |
|                                                    |                                                           |                                                           |                                                     |                                                   |                                          |                                |



## Program Overview



|                                                          |                                                                                                                                                    |                                                                                                                                         |                                                                                                                                                |                                                                                                                                       |                                                                                                                    |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Install Hydronic Heating and Cooling</b><br>E         | Describe the operation of hydronic heating and cooling piping systems<br>E1<br><div><div></div><div>2</div><div></div><div></div><div></div></div> | Describe controls for hydronic heating and cooling systems<br>E2<br><div><div></div><div>2</div><div></div><div></div><div></div></div> | Install, test and commission hydronic heating and cooling systems<br>E3<br><div><div></div><div>2</div><div></div><div></div><div></div></div> | Maintain and repair hydronic heating and cooling systems<br>E4<br><div><div></div><div>2</div><div></div><div></div><div></div></div> |                                                                                                                    |
|                                                          |                                                                                                                                                    |                                                                                                                                         |                                                                                                                                                |                                                                                                                                       |                                                                                                                    |
| <b>Perform Layout, Fabrication and Installation</b><br>F | Prepare pipe and fittings<br>F1<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                                             | Develop and use templates<br>F2<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                                  | Develop a simple spool sheet<br>F3<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                                      | Fabricate from spool sheets<br>F4<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                              | Use welding equipment<br>F5<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                 |
|                                                          |                                                                                                                                                    |                                                                                                                                         |                                                                                                                                                |                                                                                                                                       |                                                                                                                    |
|                                                          | Install supports, hangers, guides and anchors<br>F7<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                         | Erect a piping assembly<br>F8<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                                    | Test and commission a piping assembly<br>F9<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                             |                                                                                                                                       |                                                                                                                    |
| <b>Special Application Systems</b><br>G                  | Install marine systems piping<br>G1<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                                         | Install fuel oil piping systems<br>G2<br><div><div></div><div></div><div>3</div><div></div><div></div></div>                            | Install low pressure steam piping systems<br>G3<br><div><div></div><div></div><div>3</div><div></div><div></div></div>                         | Install high pressure steam piping systems<br>G4<br><div><div></div><div></div><div>3</div><div></div><div></div></div>               | Describe feedwater treatment systems<br>G5<br><div><div></div><div></div><div>3</div><div></div><div></div></div>  |
|                                                          |                                                                                                                                                    |                                                                                                                                         |                                                                                                                                                |                                                                                                                                       |                                                                                                                    |
|                                                          | Install hydraulic piping systems<br>G7<br><div><div></div><div>2</div><div></div><div></div><div></div></div>                                      | Install pneumatic and compressed air piping systems<br>G8<br><div><div></div><div>2</div><div></div><div></div><div></div></div>        | Install process piping systems<br>G9<br><div><div></div><div></div><div></div><div>4</div><div></div></div>                                    | Install air conditioning piping systems<br>G10<br><div><div></div><div></div><div></div><div>4</div><div></div></div>                 | Install refrigeration piping systems<br>G11<br><div><div></div><div></div><div></div><div>4</div><div></div></div> |
|                                                          |                                                                                                                                                    |                                                                                                                                         |                                                                                                                                                |                                                                                                                                       |                                                                                                                    |
|                                                          | Install instrumentation piping systems<br>G13<br><div><div></div><div></div><div></div><div>4</div><div></div></div>                               | Describe renewable energy systems<br>G14<br><div><div></div><div></div><div></div><div>4</div><div></div></div>                         |                                                                                                                                                |                                                                                                                                       |                                                                                                                    |



Program Overview



|                                                                |                                                              |                                                                           |                                                                  |                                                 |                                                             |   |   |  |
|----------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------|---|---|--|
| <b>Water Supply</b><br><br><b>H</b>                            | Describe potable water distribution systems<br><br><b>H1</b> | Describe the installation of cross connection assemblies<br><br><b>H2</b> | Test and commission cross connection assemblies<br><br><b>H3</b> |                                                 |                                                             |   |   |  |
|                                                                |                                                              |                                                                           |                                                                  |                                                 |                                                             | 3 |   |  |
| <b>Install Natural Gas and Propane Systems</b><br><br><b>I</b> | Install and service fuel gas systems<br><br><b>I1</b>        | Install and service fuel gas controls and safeguards<br><br><b>I2</b>     | Install and service fuel gas equipment<br><br><b>I3</b>          | Install venting and air supply<br><br><b>I4</b> | Apply gas codes, regulations and standards<br><br><b>I5</b> |   |   |  |
|                                                                |                                                              |                                                                           |                                                                  |                                                 |                                                             | 3 | 4 |  |



Program Content  
Level 1



# **Level 1**

## **Steamfitter/Pipefitter**



## Program Content Level 1



|             |    |                           |
|-------------|----|---------------------------|
| Line (GAC): | A  | Safe Work Practices       |
| Competency: | A1 | Control workplace hazards |

## Objectives

To be competent in this area, the individual must be able to:

- Describe and manage workplace hazards.
- Demonstrate emergency procedures.
- Describe non-emergency injury reporting procedures.
- Describe how worksite safety policies are established.

## LEARNING TASKS

1. Describe short term hazards in the steamfitter/pipefitter trade
2. Describe long term hazards in the steamfitter/pipefitter trade
3. Describe safety precautions when working at elevations

## CONTENT

- Excavations
- Working around heavy equipment
- Sharp objects
- Ladders
- Work platforms
- Confined space
- Electrical
- Lockout procedures
- Compressed gas
- Explosive material (dust)
- Lifting procedures
- Personal apparel
  - Clothing
  - Hair and beards
  - Jewelry
- Housekeeping
- Horseplay
- Respect for others' safety
- Constant awareness of surroundings
- Safe attitude
- Management of hazards
- Respiratory disease
- Repetitive strain injuries
- Management of hazards
- Wind
- Floor openings
- Guard rails
- Safety lines
- Weather



**Program Content  
Level 1**



**LEARNING TASKS**

4. Describe emergency procedures
  
5. Describe non-emergency injury reporting procedures
  
6. Describe how a workplace safety policy is established
  
  
  
  
  
  
  
  
7. Describe lock-out and tag-out procedures

**CONTENT**

- Stressed Cables
- Emergency shutoffs
- Fire control systems
- Eye wash facilities
- Emergency exits
- Emergency contact/phone numbers
- Outside meeting place
- Disaster meeting place
- First aid facilities
- Reports accessories
- Process
- Hazard assessment
- Conditions
- Meeting requirements
- Tool box
  - Reporting hazards and incidents
  - Reporting injuries
  - Investigations
  - Committees
  - Employee orientation (including new worker/young worker)
  - First-aid
  - Hearing
  - Records and statistics
  - Lock-out
- Minimum standards
- Acts and Regulations
- Understanding of system operation
- Components requiring lock-out
- Identification requirements
- Situations where lock-out is required
- Lock-out equipment
  - Chains
  - Tags
  - Locks
- Fabrication of isolation devices
  - Blind flanges
  - Spades
  - Spectacle blinds
- Lock-out procedures
  - Disconnection



**Program Content  
Level 1**



**Achievement Criteria**

Given information on short-term and long-term hazards, safety precautions when working at elevations, non-emergency injury reporting procedures, workplace safety policies and lock out and tag procedures, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks that include taking safety precautions at elevations, lock out and tag procedures. Tasks must be performed with 100% accuracy.

**Workplace Achievement Criteria**

Given information on short-term and long-term hazards, safety precautions when working at elevations, non-emergency injury reporting procedures, workplace safety policies and lock out and tag procedures, the learner must correctly follow procedures, policies and be aware of safety precautions at all times. Procedures and policies relating to potential long and short-term hazards, safety precautions, safety policies and lock out and tag procedures are imperative. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC): A Safe Work Practices**

**Competency: A2 Describe occupational health and safety regulations**

**Objectives**

To be competent in this area, the individual must be able to:

- Locate the parts of the Occupational Health and Safety Regulation as it applies to the steamfitter/pipefitter workplace.
- Identify hazards that are found in the steamfitter/pipefitter workplace.

**LEARNING TASKS**

**CONTENT**

- |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Define key terms used in the Workers Compensation Act                              | <ul style="list-style-type: none"> <li>• Applicable terms</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. Describe the conditions under which compensation is paid                           | <ul style="list-style-type: none"> <li>• Applicable regulations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3. Describe the general duties of employers, employees and others                     | <ul style="list-style-type: none"> <li>• Applicable regulations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4. Describe the WorkSafeBC requirements for the reporting of accidents                | <ul style="list-style-type: none"> <li>• Applicable requirements and procedures</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5. Describe the "Core Requirements" of the Occupational Health and Safety Regulation  | <ul style="list-style-type: none"> <li>• Definitions</li> <li>• Application</li> <li>• Rights and Responsibilities                             <ul style="list-style-type: none"> <li>○ Health and safety programs</li> <li>○ Young worker orientation</li> <li>○ Contractor's safety policy manuals</li> <li>○ Investigations and reports</li> <li>○ Workplace inspections</li> <li>○ Right to refuse work</li> </ul> </li> <li>• General Conditions                             <ul style="list-style-type: none"> <li>○ Building and equipment safety</li> <li>○ Emergency preparedness</li> <li>○ Preventing violence</li> <li>○ Working alone</li> <li>○ Ergonomics</li> <li>○ Illumination</li> <li>○ Indoor air quality</li> <li>○ Smoking and lunchrooms</li> </ul> </li> </ul> |
| 6. Identify the hazards and safety procedures in the steamfitter/pipefitter workplace | <ul style="list-style-type: none"> <li>• Chemical and biological substances</li> <li>• Substance specific requirements</li> <li>• Noise, vibration, radiation and temperature</li> <li>• Personal protective clothing and equipment</li> <li>• Confined spaces</li> <li>• De-energization and lockout</li> <li>• Fall protection</li> <li>• Tools, machinery and equipment</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                   |



**Program Content  
Level 1**



**LEARNING TASKS**

**CONTENT**

- Ladders, scaffolds and temporary work platforms
- Cranes and hoists
- Rigging
- Mobile equipment
- Transportation of workers
- Traffic control
- Electrical safety

**Achievement Criteria**

Given information on the Workers Compensation Act, WorkSafeBC requirements for accident reporting, core requirements of the Occupational Health and Safety Regulation as well as potential hazards and safety procedures, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include occupational health and safety regulations, potential hazards and safety procedures. Tasks must be performed with 100% accuracy.

**Workplace Achievement Criteria**

Given information on the Workers Compensation Act, WorkSafeBC requirements for accident reporting, core requirements of the Occupational Health and Safety Regulation as well as potential hazards and safety procedures, the learner must correctly follow procedures and policies at all times. Procedures and policies relating to occupational health and safety are highly important. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC):**        **A    Safe Work Practices**  
**Competency:**      **A3   Describe WHMIS and hazardous materials safety**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe the purpose of the Workplace Hazardous Materials Information System (WHMIS) Regulations.
- Explain the contents of material safety data sheets (MSDS).
- Explain the contents of a WHMIS label and apply WHMIS regulations.

**LEARNING TASKS**

**CONTENT**

- |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Describe the regulations that require suppliers of hazardous materials to provide material safety data sheets (MSDSs) and label products as a condition of sale and importation | <ul style="list-style-type: none"> <li>• Hazardous Product Act</li> <li>• Controlled Products Regulations</li> <li>• Ingredient Disclosure List</li> <li>• Hazardous Materials Information Review Act</li> </ul>                                                                                                                                                                                                                                        |
| 2. State the purpose of the Workplace Hazardous Materials Information System (WHMIS)                                                                                               | <ul style="list-style-type: none"> <li>• Protection of Canadian workers from the adverse effects of hazardous materials through the provision of relevant information while minimizing the economic impact on industry and the disruption of trade</li> <li>• Recognition of rights                             <ul style="list-style-type: none"> <li>○ Workers</li> <li>○ Employers</li> <li>○ Suppliers</li> <li>○ Regulators</li> </ul> </li> </ul> |
| 3. Describe the key elements of WHMIS                                                                                                                                              | <ul style="list-style-type: none"> <li>• Material safety data sheets (MSDSs)</li> <li>• Labeling of containers of hazardous materials</li> <li>• Worker education programs</li> </ul>                                                                                                                                                                                                                                                                   |
| 4. Describe the responsibilities of suppliers under WHMIS                                                                                                                          | <ul style="list-style-type: none"> <li>• MSDSs</li> <li>• Labels</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             |
| 5. Describe the responsibilities of employers under WHMIS                                                                                                                          | <ul style="list-style-type: none"> <li>• MSDSs</li> <li>• Labels</li> <li>• Work education programs in the workplace</li> </ul>                                                                                                                                                                                                                                                                                                                         |
| 6. Describe information to be disclosed on a MSDS                                                                                                                                  | <ul style="list-style-type: none"> <li>• Hazardous ingredients</li> <li>• Preparation information</li> <li>• Product information</li> <li>• Physical data</li> <li>• Fire or explosion</li> <li>• Reactivity data</li> <li>• Toxicological properties</li> </ul>                                                                                                                                                                                        |



**Program Content  
Level 1**



**LEARNING TASKS**

7. Identify symbols found on WHMIS labels and their meaning
  
8. Apply WHMIS regulations as they apply to hazardous materials used in the shop

**CONTENT**

- Preventive measures
- First-aid measures
  
- Compressed gases
- Flammable and combustible materials
- Oxidizing materials
- Poisonous and infectious materials
  - Materials causing immediate and serious toxic effects
  - Materials causing other toxic effects
  - Biohazardous infectious materials
- Corrosive materials
- Dangerously reactive materials
  
- Use, storage and disposal of shop materials

**Achievement Criteria**

Given information on WHMIS regulations and requirements for an MSDS, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include WHMIS regulations and MSDS requirements. Tasks must be performed with 100% accuracy.

**Workplace Achievement Criteria**

Given information on WHMIS regulations and requirements for an MSDS, the learner must correctly follow procedures and policies at all times. Procedures and policies relating to workplace hazardous materials are regulated and are highly important. Employer assessed accuracy is required for each task.





**Program Content  
Level 1**



**Line (GAC): A Safe Work Practices**

**Competency: A5 Practice fire prevention**

**Objectives**

To be competent in this area, the individual must be able to:

- Prevent and identify various classes of fires.
- Select appropriate fire extinguishers for the class of fire and environmental condition.

**LEARNING TASKS**

1. Describe the conditions necessary to support a fire
2. Describe the classes of fires according to the materials being burned
3. Apply preventative fire safety precautions when working near, handling or storing flammable liquids or gases, combustible materials and electrical apparatus
4. Describe the considerations and steps to be taken prior to fighting a fire
5. Describe the procedure for using a fire extinguisher

**CONTENT**

- Air
- Fuel
- Heat
- Class A
- Class B
- Class C
- Class D
- Symbols and colours
- Hot work permit (site specific)
- Handling and storage of flammable materials
- Symbols
- Fuels
  - Diesel
  - Gasoline
  - Propane
  - Natural Gas
- Ventilation, including purging
- Lubricants
- Oily rags
- Combustible metals
- Aerosols
- Warning others and fire department
- Evacuation of others
- Fire contained and not spreading
- Personal method of egress
- Training
- Extinguisher selection
- P.A.S.S.
  - Pull
  - Aim
  - Squeeze
  - Sweep



**Program Content  
Level 1**



**Line (GAC): B Use Tools and Equipment**

**Competency: B1 Use hand tools**

**Objectives**

To be competent in this area, the individual must be able to:

- Select and use hand tools appropriate to steamfitter/pipefitter trade.
- Inspect and maintain hand tools.

**LEARNING TASKS**

1. Describe hand tools used in the trade

**CONTENT**

- Cutting tools
- Measuring and marking tools
- Bracing and securing tools
- Hammering tools
- Leveling tools
  - Pitch levels
- Wrenches and pliers
- Screwdrivers
- Chiseling tools
- Squaring tools
- Threading tools
- Dies
- Flaring and swaging tools
  - Tubing benders
  - Expanding and crimping tools
- Types
- Parts
- Purpose/uses
- Procedures/operations
- Safety
- Adjustment
- Inspection
- Maintenance
- Storage

2. Use all hand tools (as listed above)

**Achievement Criteria**

Given information on hand tools and their appropriate use, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include the selection and use of appropriate hand tools as well as follow the inspection and maintenance procedure. Tasks must be performed with 100% accuracy.



**Program Content  
Level 1**



**Workplace Achievement Criteria**

Given information on hand tools and their appropriate use, the learner must correctly inspect, maintain and use tools at all times. Employer assessed accuracy is required for each task.



## Program Content Level 1



**Line (GAC):**      **B    Use Tools and Equipment**

**Competency: B2 Use ladders and platforms**

## Objectives

To be competent in this area, the individual must be able to:

- Describe ladders and elevated platforms.
- Select and use ladders and platforms.

## LEARNING TASKS

1. Describe ladders and elevated platforms

## CONTENT

- Types
  - Ladders
  - Platforms
  - Lifts
- Uses
- Safety
- Fall arrest equipment
- Hazard recognition
- Government regulations
- Selection
- Operating procedures
- Limitations
- Securing
- Inspection
- Maintenance
- Storage

2. Use ladders and elevated platforms

### Achievement Criteria

Given information on the use of ladders and elevated platforms, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition the learner must perform lab practical tasks to include use of ladders and elevated platforms. Tasks must be performed with 100% accuracy.

### Workplace Achievement Criteria

Given information use of ladders and elevated platforms, the learner must correctly follow specified operating procedures for their selection and use at all times. The requirements for, and correct use of ladders and elevated platforms is an integral part of the job. Employer assessed accuracy is required for each task.



## Program Content Level 1



|             |    |                                              |
|-------------|----|----------------------------------------------|
| Line (GAC): | B  | Use Tools and Equipment                      |
| Competency: | B3 | Use cutting, brazing and soldering equipment |

## Objectives

To be competent in this area, the individual must be able to:

- Select cutting, brazing and soldering equipment appropriate to the steamfitter/pipefitter processes.
- Use cutting, brazing and soldering equipment.
- Inspect and maintain cutting, brazing and soldering equipment.

## LEARNING TASKS

1. Describe oxy-acetylene and air/fuel equipment

## CONTENT

- Parts
  - Oxygen cylinders
  - Acetylene cylinders
  - Regulators
  - Gauges
  - Spark arrestors
  - Torches (oxy / fuel, air / fuel)
- Safety devices
- Transportation of Dangerous Goods Legislation
- Ventilation
- Selection
- Procedure
- Limitations
- Inspection
- Safety
- Flammable material recognition
- Types
- Parts
- Purpose/uses
- Procedures/operations
  - Setup
  - Take down
  - Tip selection
  - Alloy selection
  - Flux selection
- Adjustment
- Inspection
- Minor maintenance
- Storage

2. Describe cutting, brazing and soldering techniques

3. Use oxy-acetylene equipment to cut, braze and solder



**Program Content  
Level 1**



**Achievement Criteria**

Given information on oxy-acetylene and air/fuel equipment, and cutting brazing and soldering techniques, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include selection of the appropriate cutting, soldering and brazing technique and use of oxy-acetylene equipment. Tasks must be performed with 90% accuracy.

**Workplace Achievement Criteria**

Given information on oxy-acetylene equipment and cutting, brazing and soldering techniques, the learner must correctly use oxy-acetylene equipment to cut, braze and solder. The use of oxy-acetylene equipment is highly important part of the job Employer assessed accuracy is required for each task.

|             |    |                                  |
|-------------|----|----------------------------------|
| Line (GAC): | B  | Use Tools and Equipment          |
| Competency: | B4 | Use measuring and leveling tools |

## Objectives

To be competent in this area, the individual must be able to:

- Describe pressure measuring tools.
- Use pressure measuring tools.

## LEARNING TASKS

1. Describe pressure measuring tools
2. Use manometers and mechanical gauges

## CONTENT

- **Manometers**
  - Types
  - Filling
  - Fluids
- **Mechanical gauges**
  - Analog
  - Digital
  - Standard
  - Compound
- **Gas pressure testing**
  - Identify hazards
  - Gauge pressures
  - Absolute pressures
  - Conversion between measurement units
  - Leak detection
  - Hydrostatic testing
  - Pneumatic testing
  - Vacuum testing
- **Testing procedures**

### Achievement Criteria

Given information on pressure measuring tools, manometers and mechanical gauges, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include use of pressure measuring tools, including manometers and mechanical gauges. Tasks must be performed with 90% accuracy.

### Workplace Achievement Criteria

Given information on pressure measuring tools, including manometers and mechanical gauges, the learner must correctly use pressure measuring tools at all times. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC):**        **B    Use Tools and Equipment**  
**Competency:**     **B5   Use rigging and hoisting equipment**

**Objectives**

To be competent in this area, the individual must be able to:

- Use hoisting, lifting and rigging equipment.
- Tie knots, bends and hitches.

**LEARNING TASKS**

1. Describe the principles of lifting and hoisting
2. Describe hoisting, lifting and rigging equipment
3. Describe hoisting, lifting and rigging equipment

**CONTENT**

- Mechanical advantage
- Balance points
- Applicable safety codes and regulations
- Lifting and Hoisting
  - Cranes
  - Boom trucks
  - Loaders
  - Tirlors
  - Come-alongs
  - Tuggers
  - Chain falls
  - Jacks
- Accessories
  - Slings / chokers
  - Shackles
  - Chains
  - Tag lines
  - Spreader bars
  - Snatch blocks
  - Turnbuckles
  - Softeners
  - U clips
  - J clips
- Types
  - Hand signals
  - Communication with the operator
  - Communication with others
- Purpose/meaning



## Program Content Level 1



## LEARNING TASKS

4. Describe hoisting, lifting and rigging equipment

## CONTENT

- Types
  - Half hitch
  - Timber hitch
  - Rolling hitch
  - Clove hitch
  - Figure of eight
  - Reef knot
  - Sheet bend
  - Bowline
  - Bowline on a bight
  - Trucker's hitch
- Purposes
- Limitations
- Perform safe hoisting, lifting and rigging tasks in a practical shop exercise

5. Describe hoisting, lifting and rigging equipment

### Achievement Criteria

Given information on the principles of lifting and hoisting, hoisting, lifting and rigging equipment, communication, knots, bends and hitches, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include use of hoisting, lifting, and rigging equipment, communication while lifting and hoisting; knots, bends and hitches. Tasks must be performed with 100% accuracy.

### Workplace Achievement Criteria

Given information on hoisting, lifting and rigging equipment, types of communication and their meaning, ties, bends, knots and hitches, the learner must perform safe and correct hoisting, lifting and rigging at all times. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC): B Use Tools and Equipment**

**Competency: B6 Use portable power tools**

**Objectives**

To be competent in this area, the individual must be able to:

- Select portable power tools appropriate to steamfitter/pipefitter processes.
- Use portable power tools.
- Inspect and maintain portable power tools.

**LEARNING TASKS**

1. Describe portable power tools used in the trade

2. Use portable power tools as listed above

**CONTENT**

- Types
  - Electric
  - Pneumatic
- Cutting tools
- Grinding and abrasive tools
- Threading tools
- Drilling and boring tools
- Specialty tools
  - Fusion tools
  - Power crimpers
  - Grooving tools
  - T-Drill
- Accessories
- Types
- Parts
- Purpose/uses
- Procedures/operations
- Safety
- Adjustment
- Inspection
- Maintenance
- Storage

**Achievement Criteria**

Given information on portable power tools, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include correct use of portable power tools at all times. Tasks must be performed with 100% accuracy.

**Workplace Achievement Criteria**

Given information on portable power tools, the learner must correctly use portable power tools at all times. Use of portable power tools is an important part of the job. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC): B Use Tools and Equipment**

**Competency: B7 Use stationary power tools**

**Objectives**

To be competent in this area, the individual must be able to:

- Select and use stationary power tools appropriate to the steamfitter/pipefitter trade.
- Inspect and maintain stationary power tools.

**LEARNING TASKS**

1. Describe stationary power tools used in the trade
2. Use stationary power tools as listed above

**CONTENT**

- Cutting tools
- Grinding and abrasive tools
- Threading tools
- Drilling and boring tools
- Specialty tools
- Accessories
- Grooving tools
- Types
- Parts
- Purpose/uses
- Procedures/operations
- Safety
- Adjustment
- Inspection
- Maintenance
- Storage

**Achievement Criteria**

Given information on the use of stationary power tools, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include correct use of stationary power tools at all times. Tasks must be performed with 100% accuracy.

**Workplace Achievement Criteria**

Given information on stationary power tools, the learner must correctly use stationary power tools at all times. Use of the stationary power tools is an important part of the job. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC):**        **C   Organize Work**  
**Competency:**     **C1   Use mathematics and science (including electricity)**

**Objectives**

To be competent in this area, the individual must be able to:

- Use mathematics and science to solve problems in the steamfitter/pipefitter trade.

**LEARNING TASKS**

1. Add, subtract, multiply and divide numbers
2. Use formulas to calculate area
3. Use formulas to calculate volumes
4. Use formulas to calculate capacity
5. Transpose formulas
6. Perform conversions

**CONTENT**

- Whole numbers
- Fractions
- Decimals
- Percentages
- Cross-sectional area of pipe
- Cylinders
- Rectangular tanks
- Imperial gallons
- US gallons
- Litres
- Processes
- Length
- Volume
- Capacity
- Area
- Mass
- Weight
- Heat energy
  - Kilowatts
  - BTUs
  - Gigajoules
  - Calories
- Temperature
  - Fahrenheit
  - Centigrade
  - Kelvin
  - Rankin
- Pressure
  - Absolute
  - Gauge



**Program Content  
Level 1**



**LEARNING TASKS**

7. Calculate piping measurements

8. Use the Pythagorean theorem of right angles

9. Calculate offsets using the applicable trigonometric function

10. Calculate the required measurements for a parallel piping offset

11. Define the properties of matter

12. Use Pascal's theory of pressure and force

13. Use Archimedes' principles of displacement and floatation

14. Define mechanical advantage as it relates to fluid power

**CONTENT**

- Terms
  - Thread allowance
  - Fitting allowance
  - End to end
  - End to centre
  - Centre to centre
  - Face to face
  - End to back
  - Back to back
  - Socket depth
- Calculations
- Grades
- Elevations
- Benchmarks
- Hypotenuse
- Side opposite
- Side adjacent
- Calculator methods
- Table-based methods
- Equal spread
- Rolling
- Jumper
- Density
- Cohesion
- Adhesion
- Tensile strength
- Ductility
- Malleability
- Elasticity
- Conductivity
- Heat properties
  - BTUs
  - Calories
  - Gigajoules
  - Specific Heat
- Pounds
- Newtons
- Specific weight
- Specific gravity
- Hydraulics
- Hydrostatics



**Program Content  
Level 1**



**LEARNING TASKS**

15. Describe factors that affect fluid flow in a piping system
16. Describe factors that affect gas volumes and pressures
17. Calculate the expansion and contraction of various piping materials due to heating and cooling
18. Define methods of heat transfer
19. Perform heat load calculations

**CONTENT**

- Viscosity
- Laminar flow
- Turbulent flow
- Velocity
- Piping material
- Fittings
- Boyle's Law
- Charles Law
- Combined Gas Law
- Ferrous
- Non-ferrous
- Thermoplastic
- Conduction
- Convection
- Radiation
- Sensible
- Latent
- Specific heat as it applies to change of state
- Steam tables

**Achievement Criteria**

Given information on basic mathematics, formulas, conversions, calculations, Pythagorean theorem, trigonometrics properties of matter, Pascal's theory, Archimedes' principles, fluid flow, gas volume, expansion and contractions and methods of heat transfer, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include correct use of basic mathematics, formulas, conversions and calculations at all times. Tasks must be performed with 100% accuracy.

**Workplace Achievement Criteria**

Given information on basic mathematics, formulas, conversions, calculations, Pythagorean theorem, trigonometrics properties of matter, Pascal's theory, Archimedes' principles, fluid flow, gas volume, expansion and contractions and methods of heat transfer, the learner must correctly use mathematics and science to solve problems. Using science and mathematics to solve problems is an integral part of the job. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC):**        **C    Organize Work**  
**Competency:**     **C2   Read drawings and specifications**

**Objectives**

To be competent in this area, the individual must be able to:

- Use drafting tools.
- Use drafting symbols, lettering and line conventions.
- Convert between isometric and orthographic projections.
- Interpret information found on a set of drawings.
- Create both plan view and isometric drawings of a piping system.

**LEARNING TASKS**

**CONTENT**

- |                                                                                           |                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Describe drafting tools and materials                                                  | <ul style="list-style-type: none"> <li>• Drawing boards</li> <li>• T-squares</li> <li>• Triangles</li> <li>• Protractors</li> <li>• French curves</li> <li>• Pencils</li> <li>• Erasers and shields</li> <li>• Scale rulers</li> <li>• Compasses</li> <li>• Dividers</li> <li>• Templates</li> </ul> |
| 2. Use scale rulers to determine actual dimensions from a piping diagram                  | <ul style="list-style-type: none"> <li>• Scale rulers</li> </ul>                                                                                                                                                                                                                                     |
| 3. Describe piping and fixture symbols currently used in the steamfitter/pipefitter trade | <ul style="list-style-type: none"> <li>• Tees</li> <li>• Wyes</li> <li>• Flanges</li> <li>• Elbows</li> <li>• Valves</li> </ul>                                                                                                                                                                      |
| 4. Describe lettering and dimensioning of piping diagrams                                 | <ul style="list-style-type: none"> <li>• Hidden lines</li> <li>• Object lines</li> <li>• Border lines</li> <li>• Center lines</li> <li>• Dimension lines</li> <li>• Extension lines</li> <li>• Phantom lines</li> </ul>                                                                              |



**Program Content  
Level 1**



**LEARNING TASKS**

5. Describe drawing projections
6. Use drawing projections
7. Use tools to sketch irregular shapes
8. Create isometric drawings of piping systems

**CONTENT**

- Isometric
- Orthographic
- Oblique
- Views
- Isometric
- Orthographic
- Conversion from one to the other
- French curves
- Templates
- Compasses
- Splines
- Lettering
- Line type
- Information to be contained
- Detail required
- Dimensioning
- Pipe sizing

**Achievement Criteria**

Given information on drafting tools, symbols, lettering and line conventions, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include correct use of drafting tools at all times. Tasks must be performed with 100% accuracy.

**Workplace Achievement Criteria**

Given information on drafting tools, symbols, lettering and line conventions, the learner must correctly use drafting tools to create plan view and isometric drawings of a piping system. Using drafting tools to create drawings and plans is a highly important part of the job. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC):**        **C   Organize Work**  
**Competency:**    **C3   Use codes, regulations and standards**

**Objectives**

To be competent in this area, the individual must be able to:

- Identify codes and standards encountered in the steamfitter/pipefitter trade.
- Identify various environmental agencies that affect the steamfitter/pipefitter and plumbing trades.

**LEARNING TASKS**

1. Identify code, standards and organizations affecting the steamfitter/pipefitter trade

**CONTENT**

- American National Standards Institute (ANSI)
- American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)
- American Society of Testing and Materials (ASTM)
- American Water Works Association (AWWA)
- National Standard of Canada (CAN)
- Canadian Commission on Building and Fire Codes (CCBFC)
- Canadian Gas Association (CGA)
- Canadian General Standards Board (CGSB)
- Canadian Standards Association (CSA)
- National Building Code of Canada (NBC)
- National Fire Protection Association (NFPA)
- Underwriters' Laboratories of Canada (ULC)
- Municipal bylaws
  - Permits
- Health Act
- Safety Standards Act
- Leadership in Energy and Environmental Design (LEED)
- American Society of Mechanical Engineers (ASME)
- Planning
- Installation
- Maintenance

2. Describe where the above codes and standards are applied within the steamfitter/pipefitter trade



**Program Content  
Level 1**



**Achievement Criteria**

Given information on code, standards and organizations that affect the steamfitter/pipefitter trade, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

**Workplace Achievement Criteria**

Given information on code, standards and organizations that affect the steamfitter/pipefitter trade, the learner must correctly use codes and standards and be aware of the various environmental agencies that affect the trade. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC):**        **C    Organize Work**  
**Competency:**      **C4   Use manufacturer and supplier documentation**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe documentation encountered in the steamfitter/pipefitter trade.
- Describe information contained in manufacturer and supplier documentation.
- Describe how to use the internet to source manufacturer's documentation.

**LEARNING TASKS**

1. Describe documentation encountered in the steamfitter/pipefitter trade
2. Describe information contained in manufacturer and supplier documentation
3. Source and use manufacturer's documentation

**CONTENT**

- Tool and equipment documentation
- Material Safety and Data Sheets (MSDS)
- System component documentation
- Proprietary product documentation
- Certification agencies
- Installation instructions and requirements
- Operation and maintenance manuals
- Product specifications
- Warranty information
- Manufacturer's web-sites
- Search engines
- Archival sources
- On-site documentation

**Achievement Criteria**

The learner must perform lab practical tasks to include correct interpretation of manufacturer and supplier documentation at all times. Tasks must be performed with 90% accuracy.

**Workplace Achievement Criteria**

Given information on manufacturer and supplier documentation, the learner must correctly use supplied documentation and information and use the internet to source manufacturer's documentation. Use of available documentation and information is an important part of the job. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC): D Prepare and Assemble Piping Components**  
**Competency: D1 Join pipe**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe piping and tubing materials used in the steamfitter/pipefitter trade.
- Join tubing and piping.

**LEARNING TASKS**

1. Describe piping and tubing materials
2. Describe the method of manufacture
3. Describe methods of pipe support
4. Describe methods of protecting piping

**CONTENT**

- Copper pipe and tubing
- Cast iron soil and pressure
- Brass pipe and tubing
- Copper pipe and tubing
- Cast iron pipe
- Types
  - Hangers
  - Supports
  - Seismic
  - Anchors
  - Guides
  - Slide plates
- Compatibility with piping
- Size
- Spacing
- Fasteners
  - Beam clamps
  - Drop-in anchors
  - Draw bolts
  - Toggle bolts
- Interferences
- Insulation thickness
- Elevation of hangers
- Attachment methods
- Tools and equipment
- Frost protection
  - Heat tape
  - Frost boxes
  - Circulating pumps
- Ultraviolet protection
- Corrosion protection
  - Coatings
  - Tape



## Program Content Level 1



## LEARNING TASKS

## CONTENT

- Physical damage
    - Protective plates
    - Sleeving
    - Metal stud grommets
  - Protective measures
    - Insulating
    - Water treatment
    - Dielectric protection

5. Describe the inspection of pipe before installation

  - Potential defects
    - Pin holes
    - Cracked fittings
    - Bent ends
    - Uneven casting
    - Damaged pipe and coatings
  - Environmental effects
  - Inspection techniques
    - Visual
    - Sounding of cast iron pipe and fittings
  - Interpretation of markings
  - Checking against specifications

6. Describe the installation of tubing and pipe

  - Types
  - Sizes
  - Uses
  - Hazards
  - Safety
  - Measuring procedures
  - Selection for application
  - Calculations
    - Length
    - Fitting allowances
    - Offsets
    - Gain or loss
  - Cutting
  - Bending
  - Joining methods
  - Common fitting angles
  - Tools and equipment

7. Install tubing and pipe

  - Install tubing and pipe in a practical shop exercise



**Program Content  
Level 1**



**Achievement Criteria**

Given information on piping and tubing material, methods of manufacture, types of pipe support and methods of support, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to include correct selection of appropriate pipe, pipe support, methods of protecting the pipe, pre-installation inspection and installation of pipe at all times. Tasks must be performed with 90% accuracy.

**Workplace Achievement Criteria**

Given information on piping and tubing material, methods of manufacture, types of pipe support and methods of support, the learner must join piping and tubing. Joining piping and tubing is an integral part of the job. Employer assessed accuracy is required for each task.



Program Content  
Level 1



**Line (GAC): D Prepare and Assemble Piping Components**

**Competency: D2 Select and install valves**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe valves used in the steamfitter/pipefitter trade.
- Select and install valves.

**LEARNING TASKS**

1. Describe basic valve types

**CONTENT**

- Types
- Purpose
- Materials
- Seating design
- Orientation
- Temperature limitations
- Pressure limitations
- Applications
- Specifications
- Special purpose
  - Pressure relief
  - Temperature relief
  - Pressure reducing/Regulator
- Selection
  - Applications
  - Specifications
  - Pressure limitations
- Orientation
- Installation requirements
- Select and install valves in a practical shop exercise

2. Describe the methods of installing valves

3. Select and install valves

**Achievement Criteria**

Given information on valves, and valve installation methods, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks for correct selection and installation of various valves. Tasks must be performed with 90% accuracy.

**Workplace Achievement Criteria**

Given information on valves, and valve installation methods, the learner must select and install valves. Selecting and installing valves is an important part of the job. Employer assessed accuracy is required for each task.



**Program Content  
Level 1**



**Line (GAC):**        **D    Prepare and Assemble Piping Components**  
**Competency:**      **D3   Select and install fittings**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe fittings and connection methods used in the steamfitter/pipefitter trade.
- Select and install fittings.

**LEARNING TASKS**

1. Describe fittings used in the steamfitter/pipefitter trade
2. Describe connection methods of fittings
3. Describe considerations in selecting fittings
4. Select and install fittings

**CONTENT**

- Purpose
- Types
- Applications
- Limitations
- Welded
- Threaded
- Compression
- Flared
- Soldered/brazed
- Mechanical
- Solvent welded
- Applications
- Specifications
- Select and install fittings in a practical shop exercise

**Achievement Criteria**

Given information on fittings and how to select and connect them, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

In addition, the learner must perform lab practical tasks to select and install fittings. Tasks must be performed with 90% accuracy.

**Workplace Achievement Criteria**

Given information fittings and how to select and connect them, the learner must correctly select and connect various types of fittings. Selecting and installing valves is an important part of the job. Employer assessed accuracy is required for each task.



## Program Content Level 1



**Line (GAC): D Prepare and Assemble Piping Components**

**Competency:** D4 Describe methods of penetrating structures

## Objectives

To be competent in this area, the individual must be able to:

- Describe acceptable methods of structure penetration.

## LEARNING TASKS

1. Describe considerations when making penetrations in structures
2. Describe acceptable methods of structure penetration

## CONTENT

- Structural integrity
- Fire separation
- Interference with other building components and systems
- Hidden components behind the surface
- Electrical wiring
- Reinforcing bars
- Piping
- Post tension cables
- Sleeve installation
  - Fabrication
  - Timing
  - Sealing around
    - Fire stopping
    - Water-proofing
    - Isolating groundwater
    - Protecting pipe
    - Preventing oxidation
  - Sizing
  - Positioning
  - Fastening
  - Protection during concrete pour
- BC Building Code
- Manufacturer's literature
- Fire stopping
  - Doughnut type
  - Gasket type
  - Caulking
  - Mineral wool
- Fire rating requirements
- Required gaps
- Codes, specifications and requirements
- Fastening or wrapping fire stopping to pipes
- Sealing of vertical and horizontal penetrations
- Selection of sealants according to specifications



**Program Content  
Level 1**



**Achievement Criteria**

Given information on considerations when making penetrations in structures and acceptable methods of structure penetration, the learner must correctly identify and answer a series of multiple-choice tests with 70% accuracy.

**Workplace Achievement Criteria**

Given information on considerations when making penetrations in structures and acceptable methods of structure penetration, the learner must correctly describe structure penetration according to BC Building Code. Employer assessed accuracy is required for each task.



## Program Overview



## Occupational Analysis Chart

### DOMESTIC/COMMERCIAL GASFITTER B

**Occupation Description:** "Domestic/Commercial Gasfitter" means a person who installs, tests, maintains and repairs propane and/or natural gas lines, appliances, equipment and accessories in residential and commercial premises.

|                                                         |                                                                                                                                |                                                                                                                                |                                                                                                                                |                                                                                                                                |                                                                                                                                |                                                                                                                                |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>USE SAFE WORK PRACTICES</b><br><br><b>A</b>          | Control Workplace Hazards<br><div style="text-align: right;">A1</div>                                                          | Use Information in the OHS Regulation and WCB Standards<br><div style="text-align: right;">A2</div>                            | Use WHMIS<br><div style="text-align: right;">A3</div>                                                                          | Use Personal Protective Equipment<br><div style="text-align: right;">A4</div>                                                  | Practice Fire Prevention<br><div style="text-align: right;">A5</div>                                                           |                                                                                                                                |
|                                                         | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |                                                                                                                                |
| <b>USE TOOLS AND EQUIPMENT</b><br><br><b>B</b>          | Use Hand Tools<br><div style="text-align: right;">B1</div>                                                                     | Use Portable Power Tools<br><div style="text-align: right;">B2</div>                                                           | Use Stationary Power Tools<br><div style="text-align: right;">B3</div>                                                         | Use Pressure Measuring Equipment<br><div style="text-align: right;">B4</div>                                                   | Use Oxy Acetylene Equipment<br><div style="text-align: right;">B5</div>                                                        | Use Ladders and Platforms<br><div style="text-align: right;">B6</div>                                                          |
|                                                         | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
|                                                         | Use Rigging and Hoisting Equipment<br><div style="text-align: right;">B7</div>                                                 |                                                                                                                                |                                                                                                                                |                                                                                                                                |                                                                                                                                |                                                                                                                                |
|                                                         | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |                                                                                                                                |                                                                                                                                |                                                                                                                                |                                                                                                                                |                                                                                                                                |
| <b>ORGANIZE WORK</b><br><br><b>C</b>                    | Use Mathematics and Science<br><div style="text-align: right;">C1</div>                                                        | Use Drawings and Specifications<br><div style="text-align: right;">C2</div>                                                    | Use Codes, Regulations and Standards<br><div style="text-align: right;">C3</div>                                               | Use Manufacturer and Supplier Documentation<br><div style="text-align: right;">C4</div>                                        | Plan a Project<br><div style="text-align: right;">C5</div>                                                                     |                                                                                                                                |
|                                                         | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1   2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                      | 1   2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                      | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1   2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                      |                                                                                                                                |
| <b>INSTALL AND SERVICE FUEL SYSTEMS</b><br><br><b>D</b> | Describe the Gas Delivery System<br><div style="text-align: right;">D1</div>                                                   | Install Piping and Tubing Systems<br><div style="text-align: right;">D2</div>                                                  | Describe and Interpret Gas Meters<br><div style="text-align: right;">D3</div>                                                  | Install and Service Regulators<br><div style="text-align: right;">D4</div>                                                     | Install and Service Propane Systems<br><div style="text-align: right;">D5</div>                                                |                                                                                                                                |
|                                                         | 1   2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                      | 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1   2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                      | 1   2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                      | 1   2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                      |                                                                                                                                |



Program Overview



INSTALL VENTING AND  
AIR SUPPLY  
  
E

|                         |   |  |  |  |
|-------------------------|---|--|--|--|
| Install Venting Systems |   |  |  |  |
| E1                      |   |  |  |  |
|                         | 2 |  |  |  |

|                            |   |  |  |  |
|----------------------------|---|--|--|--|
| Install Air Supply Systems |   |  |  |  |
| E2                         |   |  |  |  |
|                            | 2 |  |  |  |

INSTALL AND SERVICE  
GAS EQUIPMENT  
  
F

|                                |   |  |  |  |
|--------------------------------|---|--|--|--|
| Install and Service<br>Burners |   |  |  |  |
| F1                             |   |  |  |  |
|                                | 2 |  |  |  |

|                                   |   |  |  |  |
|-----------------------------------|---|--|--|--|
| Install and Service<br>Appliances |   |  |  |  |
| F2                                |   |  |  |  |
|                                   | 2 |  |  |  |

|                                |   |  |  |  |
|--------------------------------|---|--|--|--|
| Perform Combustion<br>Analysis |   |  |  |  |
| F3                             |   |  |  |  |
|                                | 2 |  |  |  |

|                                         |   |  |  |  |
|-----------------------------------------|---|--|--|--|
| Describe Heating and<br>Cooling Systems |   |  |  |  |
| F4                                      |   |  |  |  |
|                                         | 2 |  |  |  |

INSTALL AND SERVICE  
CONTROLS AND  
SAFEGUARDS  
  
G

|                                                      |   |  |  |  |
|------------------------------------------------------|---|--|--|--|
| Use the Principles of<br>Electricity and Electronics |   |  |  |  |
| G1                                                   |   |  |  |  |
|                                                      | 2 |  |  |  |

|                                       |   |  |  |  |
|---------------------------------------|---|--|--|--|
| Use the Principles of Gas<br>Controls |   |  |  |  |
| G2                                    |   |  |  |  |
|                                       | 2 |  |  |  |

|                                     |   |  |  |  |
|-------------------------------------|---|--|--|--|
| Install and Service Gas<br>Controls |   |  |  |  |
| G3                                  |   |  |  |  |
|                                     | 2 |  |  |  |



Program Overview  
Level 1



# **Level 1**

## **Domestic/Commercial Gasfitter B**



**Program Overview  
Level 1**



**Line (GAC): A USE SAFE WORK PRACTICES**

**Competency: A1 Control Workplace Hazards**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe workplace hazards.
- Manage workplace hazards.
- Demonstrate emergency procedures.
- Describe non-emergency injury reporting procedures.
- Describe how worksite safety policies are established.

**LEARNING TASKS**

**CONTENT**

- |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Describe the short term hazards in the gas fitting industry</p> | <ul style="list-style-type: none"> <li>• Excavations</li> <li>• Working around heavy equipment</li> <li>• Sharp objects</li> <li>• Ladders</li> <li>• Work platforms</li> <li>• Confined space</li> <li>• Electrical</li> <li>• Lockout procedures</li> <li>• Compressed gas</li> <li>• Explosive material (dust)</li> <li>• Lifting                             <ul style="list-style-type: none"> <li>o Procedures</li> </ul> </li> <li>• Personal apparel                             <ul style="list-style-type: none"> <li>o Clothing</li> <li>o Health and beards</li> <li>o Jewellery</li> </ul> </li> <li>• Housekeeping</li> <li>• Horseplay</li> <li>• Respect for others safety</li> <li>• Constant awareness of surroundings</li> <li>• Safe attitude</li> <li>• Management of hazards</li> </ul> |
| <p>2. Describe the long term hazards in the gas fitting industry</p>  | <ul style="list-style-type: none"> <li>• Respiratory disease</li> <li>• Repetitive strain injuries</li> <li>• Management of hazards</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



**Program Overview  
Level 1**



3. Describe the safety precautions required when working at elevations
  - Wind
  - Floor openings
  - Guard rails
  - Safety lines
  - Weather
  - Stressed cables
4. Describe emergency procedures
  - Emergency shutoffs
  - Fire control systems
  - Eye wash facilities
  - Emergency exits
  - Emergency contact/phone numbers
  - Outside meeting place
  - Disaster meeting place
5. Describe non-emergency injury reporting procedures
  - First aid facilities
  - Reports
6. Describe how a workplace safety policy is established
  - Process
    - o Hazard assessment
    - o Conditions
    - o Meeting requirements
      - Tool box
    - o Reporting hazards and incidents
    - o Reporting injuries
    - o Investigations
    - o Committees
    - o Employee orientation
    - o First-aid
    - o Hearing
    - o Records and statistics
    - o Lock-out
    - o Non-compliance procedures
  - Minimum standards
    - o Act and Regulations



**Program Overview  
Level 1**



7. Describe lock-out and tag-out procedures
- Understanding of system operation
  - Components requiring lock-out
  - Identification requirements
  - Situations where lock-out is required
  - Lock-out equipment
    - o Chains
    - o Tags
    - o Locks
  - Fabrication of isolation devices
    - o Blind flanges
    - o Spades

**Achievement Criteria**

- Performance** The learner will lock-out mechanical and electrical equipment.
- Conditions** The learner will be given:
- Single and multiple lock-out equipment
  - Motor control centre
  - Disconnect
  - Valve
- Criteria** The learner will score 70% or better on a rating sheet that reflects the following criteria:
- Safety
  - Proper procedure used
  - Sequence
  - Confirmation of lockout



**Program Overview  
Level 1**



**Line (GAC):**        **A    USE SAFE WORK PRACTICES**  
**Competency:**      **A2    Use Information in the OHS Regulation and WCB Standards**

**Objectives**

To be competent in this area, the individual must be able to:

- Use the parts of the Occupational Health and Safety Regulation that apply to the Gas Fitting Worker's workplace.

**LEARNING TASKS**

**CONTENT**

- |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Use terms used in the Workers Compensation Act                                    | • Definitions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. Describe the general duties of employers, employees and others                    | • Part 2, Division 3, Sections 115-124 of the Act                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. Describe the Workers Compensation Act requirements for the reporting of accidents | • Part 1, Division 5 Sections 53 and 54 of the Act                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4. Describe the "Core Requirements" of the Occupational Health and Safety Regulation | <ul style="list-style-type: none"> <li>• Definitions</li> <li>• Application</li> <li>• Rights and Responsibilities <ul style="list-style-type: none"> <li>o Health and safety programs</li> <li>o Young worker orientation</li> <li>o Contractor's safety policy manuals</li> <li>o Investigations and reports</li> <li>o Workplace inspections</li> <li>o Right to refuse work</li> </ul> </li> <li>• General Conditions <ul style="list-style-type: none"> <li>o Building and equipment safety</li> <li>o Emergency preparedness</li> <li>o Preventing violence</li> <li>o Working alone</li> <li>o Ergonomics</li> <li>o Illumination</li> <li>o Indoor air quality</li> <li>o Smoking and lunchrooms</li> </ul> </li> </ul> |



**Program Overview  
Level 1**



5. Apply the “General Hazard Requirements” of the Occupational Health and Safety Regulation
  - Chemical and biological substances
  - Substance specific requirements
  - Noise, vibration, radiation and temperature
  - Personal protective clothing and equipment
  - Confined spaces
  - De-energization and lockout
  - Fall protection
  - Tools, machinery and equipment
  - Ladders, scaffolds and temporary work platforms
  - Cranes and hoists
  - Rigging
  - Mobile equipment
  - Transportation of workers
  - Traffic control
  - Electrical safety



**Program Overview  
Level 1**



**Line (GAC): A USE SAFE WORK PRACTICES**

**Competency: A3 Use WHMIS**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe the purpose of the Workplace Hazardous Materials Information System (WHMIS) Regulations.
- Read material safety data sheets (MSDS).
- Interpret the contents of a WHMIS label.
- Apply WHMIS regulations.

**LEARNING TASKS**

**CONTENT**

- |                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. State the legislation that requires suppliers of hazardous materials to provide MSDS's and label products as a condition of sale and importation | <ul style="list-style-type: none"> <li>• Hazardous Product Act</li> <li>• Controlled Products Regulations</li> <li>• Ingredient Disclosure List</li> <li>• Hazardous Materials Information Review Act</li> <li>• Hazardous Materials Information Review Regulations</li> </ul>                                                                                                                              |
| 2. State the purpose of the Workplace Hazardous Materials Information System (WHMIS)                                                                | <ul style="list-style-type: none"> <li>• Protection of Canadian workers from the adverse effects of hazardous materials through minimizing the economic impact on industry and the disruption of trade</li> <li>• Recognition of rights                             <ul style="list-style-type: none"> <li>o Workers</li> <li>o Employers</li> <li>o Suppliers</li> <li>o Regulators</li> </ul> </li> </ul> |
| 3. Describe the key elements of WHMIS                                                                                                               | <ul style="list-style-type: none"> <li>• Material safety data sheets (MSD'S)</li> <li>• Labelling of containers of hazardous materials</li> <li>• Worker education programs</li> </ul>                                                                                                                                                                                                                      |
| 4. Describe the responsibilities of suppliers under WHMIS                                                                                           | <ul style="list-style-type: none"> <li>• Provide                             <ul style="list-style-type: none"> <li>o MSDS's</li> <li>o Labels</li> </ul> </li> </ul>                                                                                                                                                                                                                                       |
| 5. Describe the responsibilities of employers under WHMIS                                                                                           | <ul style="list-style-type: none"> <li>• Provide                             <ul style="list-style-type: none"> <li>o MSDS's</li> <li>o Labels</li> <li>o Work education programs in the workplace</li> </ul> </li> </ul>                                                                                                                                                                                   |



**Program Overview  
Level 1**



6. Describe information to be disclosed on a MSDS
  - Hazardous ingredients
  - Preparation information
  - Product information
  - Physical data
  - Fire or explosion
  - Reactivity data
  - Toxicological properties
  - Preventive measures
  - First-aid measures
7. Identify symbols found on WHMIS labels and their meaning
  - Compressed gases
  - Flammable and combustible materials
  - Oxidizing materials
  - Poisonous and infectious materials
    - o Material Causing Immediate and Serious Toxic Effects
    - o Biohazardous Infectious Materials
  - Corrosive Materials
  - Dangerously Reactive Materials
8. Apply WHMIS regulations as they apply to hazardous materials used in the shop
  - Use, storage and disposal of shop materials



**Program Overview  
Level 1**



**Line (GAC):        A    USE SAFE WORK PRACTICES**

**Competency:        A4    Use Personal Protective Equipment**

**Objectives**

To be competent in this area, the individual must be able to:

- Select and use personal protective equipment.

**LEARNING TASKS**

**CONTENT**

1. Describe personal protective equipment requirements

- Safety footwear
- Eye protection
- Ear protection
- Head protection
- Respiratory protection
- Clothing
- Fall protection
- High visibility clothing

2. Use personal protective equipment

- Selection
- Purpose
- Operating procedures
- Training requirements
- Inspection
- Maintenance
- Storage



**Program Overview  
Level 1**



**Line (GAC): A USE SAFE WORK PRACTICES**

**Competency: A5 Practice Fire Prevention**

**Objectives**

To be competent in this area, the individual must be able to:

- Prevent and identify various classes of fires.
- Select appropriate fire extinguishers for the class of fire and environmental condition.

**LEARNING TASKS**

**CONTENT**

- |                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Describe the conditions necessary to support a fire                                                                                                           | <ul style="list-style-type: none"> <li>• Air</li> <li>• Fuel</li> <li>• Heat</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. Describe the classes of fires according to the materials being burned                                                                                         | <ul style="list-style-type: none"> <li>• Class A</li> <li>• Class B</li> <li>• Class C</li> <li>• Class D</li> <li>• Class K</li> <li>• Symbols and colors</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Apply preventative fire safety precautions when working near, handling or storing flammable liquids or gases, combustible materials and electrical apparatus. | <ul style="list-style-type: none"> <li>• Hot work permit (site specific)</li> <li>• Handling and storage of flammable materials</li> <li>• Symbols</li> <li>• Fuels                             <ul style="list-style-type: none"> <li>o Diesel</li> <li>o Gasoline</li> <li>o Propane</li> <li>o Natural Gas</li> </ul> </li> <li>• Ventilation                             <ul style="list-style-type: none"> <li>o Purging</li> </ul> </li> <li>• Lubricants</li> <li>• Oily rags</li> <li>• Combustible metals</li> <li>• Aerosols</li> </ul> |
| 4. Describe the considerations and steps to be taken prior to fighting a fire                                                                                    | <ul style="list-style-type: none"> <li>• Warning others and fire department</li> <li>• Evacuation of others</li> <li>• Fire contained and not spreading</li> <li>• Personal method of egress</li> <li>• Training</li> </ul>                                                                                                                                                                                                                                                                                                                       |



**Program Overview  
Level 1**



5. Describe the procedure for using a fire extinguisher
  - Extinguisher selection
  - P.A.S.S.
    - o Pull
    - o Aim
    - o Squeeze
    - o Sweep



**Program Overview  
Level 1**



**Line (GAC): B USE TOOLS AND EQUIPMENT**

**Competency: B1 Use Hand Tools**

**Objectives**

To be competent in this area, the individual must be able to:

- Select hand tools appropriate to gas fitting processes.
- Use hand tools.
- Inspect and maintain hand tools.

**LEARNING TASKS**

1. Describe hand tools used in the trade

2. Use hand tools

**CONTENT**

- Cutting tools
- Measuring and marking tools
- Bracing and securing tools
- Hammering tools
- Levelling tools
  - o Pitch levels
- Wrenches and pliers
- Screwdrivers
- Chiselling tools
- Squaring tools
- Threading tools
- Flaring tools
- Tubing benders
- Types
- Parts
- Purpose/Users
- Procedures/Operations
- Safety
- Adjustment
- Inspection
- Maintenance
- Storage



**Program Overview  
Level 1**



**Line (GAC): B USE TOOLS AND EQUIPMENT**

**Competency: B2 Use Portable Power Tools**

**Objectives**

To be competent in this area, the individual must be able to:

- Select portable power tools appropriate to gas fitting processes.
- Use portable power tools.
- Inspect and maintain power tools.

**LEARNING TASKS**

1. Describe portable power tools

**CONTENT**

- Types
  - o Electric
  - o Pneumatic
  - o Powder actuated tools
- Certification requirements
- Cutting tools
- Grinding and abrasive tools
- Threading tools
- Drilling and boring tools
- Specialty tools
  - o Fusion tools
  - o Power crimpers
- Accessories

2. Use portable power tools

- Types
- Parts
- Purpose/Uses
- Procedures/Operations
- Safety
- Adjustment
- Inspection
- Maintenance
- Storage



## Program Overview

### Level 1



**Line (GAC):        B    USE TOOLS AND EQUIPMENT**

**Competency: B3 Use Stationary Power Tools**

## Objectives

To be competent in this area, the individual must be able to:

- Select stationary power tools appropriate to gas fitting processes.
- Use shop equipment.
- Inspect and maintain shop equipment.

## LEARNING TASKS

1. Describe stationary power tools

## CONTENT

- Cutting tools
  - Grinding and abrasive tools
  - Threading tools
  - Drilling and boring tools
  - Specialty tools
  - Accessories
- 
- Types
  - Parts
  - Purpose/Uses
  - Procedures/Operations
  - Capacities
  - Safety
  - Adjustment
  - Inspection
  - Minor maintenance
  - Storage

2. Use stationary power tools



## Program Overview

### Level 1



**Line (GAC):        B    USE TOOLS AND EQUIPMENT**

**Competency: B4 Use Pressure Measuring Equipment**

## Objectives

To be competent in this area, the individual must be able to:

- Describe pressure measuring tools.
- Use pressure measuring tools.

## LEARNING TASKS

1. Describe pressure measuring tools

## CONTENT

- Manometers
  - o Types
  - o Filing
  - o Fluids
    - Mechanical gauges
  - o Analog
  - o Digital
  - o Standard
  - o Compound
- Gas pressures
  - o Standing line pressures
  - o Operating line pressures
  - o Gauge pressures
  - o Absolute pressures
  - o Conversion between different pressures
- o Diagnostics
  - o Pressure tests
  - o Leak detection

2. Use manometers and mechanical gauges



**Program Overview  
Level 1**



**Line (GAC): B USE TOOLS AND EQUIPMENT**

**Competency: B5 Use Oxy Acetylene Equipment**

**Objectives**

To be competent in this area, the individual must be able to:

- Select oxy acetylene equipment appropriate to gas fitting processes.
- Use oxy acetylene equipment.
- Inspect and maintain oxy acetylene equipment.

**LEARNING TASKS**

**CONTENT**

- |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Describe oxy acetylene equipment        | <ul style="list-style-type: none"> <li>• Parts                             <ul style="list-style-type: none"> <li>o Oxygen cylinders</li> <li>o Acetylene cylinders</li> <li>o Regulators</li> <li>o Gauges</li> <li>o Spark arrestors</li> <li>o Torches</li> </ul> </li> <li>• Safety devices</li> </ul>                                                                                                                                                                                                                                                            |
| 2. Describe cutting and brazing techniques | <ul style="list-style-type: none"> <li>• Selection</li> <li>• Procedure</li> <li>• Limitations</li> <li>• Inspection</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. Use oxy acetylene equipment             | <ul style="list-style-type: none"> <li>• Safety</li> <li>• Transportation of Dangerous Goods Legislation</li> <li>• Ventilation</li> <li>• Flammable material recognition</li> <li>• Types</li> <li>• Parts</li> <li>• Purpose/Uses</li> <li>• Procedures/Operations                             <ul style="list-style-type: none"> <li>o Setup</li> <li>o Take down</li> <li>o Tip Selection</li> <li>o Alloy selection</li> <li>o Flux selection</li> </ul> </li> <li>• Adjustment</li> <li>• Inspection</li> <li>• Minor maintenance</li> <li>• Storage</li> </ul> |



**Program Overview  
Level 1**



**Achievement Criteria:**

Performance Select oxy acetylene equipment appropriate to gas fitting processes.

Conditions The learner will be given:

- Materials
- Specifications

Criteria The learner will score 70% or better on a rating sheet that reflects the following criteria:

- Accuracy
- Appearance



**Program Overview  
Level 1**



**Line (GAC): B USE TOOLS AND EQUIPMENT**

**Competency: B6 Use Ladders and Platforms**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe ladders and elevated platforms.
- Select and use ladders and platforms.

**LEARNING TASKS**

**CONTENT**

1. Describe ladders and elevated platforms

- Types
  - o Ladders
  - o Platforms
  - o Lifts
- Uses
- Safety
- Fall Protection
- Hazard recognition
- Government regulations

2. Use ladders and elevated platforms

- Selection
- Operating Procedures
- Limitations
- Securing
- Inspection
- Maintenance
- Storage



**Program Overview  
Level 1**



**Line (GAC): B USE TOOLS AND EQUIPMENT**

**Competency: B7 Use Rigging and Hoisting Equipment**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe hoisting, lifting and rigging equipment.
- Tie knots, bends and hitches.
- Select and use hoisting, lifting and rigging equipment.

**LEARNING TASKS**

**CONTENT**

- |                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Describe the principles of lifting and hoisting  | <ul style="list-style-type: none"> <li>• Mechanical advantage</li> <li>• Balance points</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. Describe hoisting, lifting and rigging equipment | <ul style="list-style-type: none"> <li>• Lifting and Hoisting                             <ul style="list-style-type: none"> <li>o Cranes</li> <li>o Boom trucks</li> <li>o Loaders</li> <li>o Tirlfors</li> <li>o Come-alongs</li> <li>o Tuggers</li> <li>o Chain falls</li> </ul> </li> <li>• Accessories                             <ul style="list-style-type: none"> <li>o Slings/chokes</li> <li>o Shackles</li> <li>o Chains</li> <li>o Tag lines</li> <li>o Rope types</li> <li>o Spreader bars</li> <li>o Snatch blocks</li> <li>o Turnbuckles</li> <li>o Softeners</li> </ul> </li> </ul> |
| 3. Describe lifting and hoisting communication      | <ul style="list-style-type: none"> <li>• Types                             <ul style="list-style-type: none"> <li>o Hand signals</li> <li>o Communication with the operator</li> <li>o Communication with others</li> </ul> </li> <li>• Purpose/meaning</li> </ul>                                                                                                                                                                                                                                                                                                                                   |



**Program Overview  
Level 1**



- 4. Tie knots, bends and hitches
  - Types
    - o Half hitch
    - o Timber hitch
    - o Rolling hitch
    - o Clove hitch
    - o Figure of eight
    - o Reef knot
    - o Sheet bend
    - o Bowline
    - o Bowline on a bight
    - o Trucker's hitch
  - Purposes
  - Limitations
  
- 5. Use hoisting, lifting and rigging equipment
  - Safety
  - Certification requirements
  - Estimation of weights
  - Equipment capacities
  - Equipment selection
  - Lifting location
  - Operating procedures
  - Communication/hand signals
  - Securing of loads
  - Equipment inspection
  - Equipment maintenance
  - Equipment storage
  - Disposal procedures

**Achievement Criteria**

- |             |                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance | The learner will set-up and lift loads.                                                                                                                                                 |
| Conditions  | The learner will be given: <ul style="list-style-type: none"> <li>• Two point lifts</li> <li>• Three point lifts</li> </ul>                                                             |
| Criteria    | The learner will score 70% or better on a rating sheet that reflects the following criteria: <ul style="list-style-type: none"> <li>• Safety</li> <li>• Proper equipment use</li> </ul> |



**Program Overview  
Level 1**



**Line (GAC): C ORGANIZE WORK**  
**Competency: C1 Use Mathematics and Science**

**Objectives**

To be competent in this area, the individual must be able to:

- Use mathematics and science to solve problems in the Domestic/Commercial Gasfitter B trade.

**LEARNING TASKS**

**CONTENT**

- |                                                                                          |                                                      |
|------------------------------------------------------------------------------------------|------------------------------------------------------|
| 1. Add, subtract, multiply and divide whole numbers, fractions, decimals and percentages | • Whole numbers, fractions, decimals, percentages    |
| 2. Transpose formulas                                                                    | • Processes                                          |
| 3. Use formulas to calculate area                                                        | • Circles, cylinders, squares, rectangles, triangles |
| 4. Use formulas to calculate volumes                                                     | • Cylinders, rectangular tanks, square tanks         |
| 5. Use formulas to calculate capacity                                                    | • Imperial gallons, US gallons, Litres               |
| 6. Perform conversions                                                                   | • Length                                             |
|                                                                                          | • Volume                                             |
|                                                                                          | • Capacity                                           |
|                                                                                          | • Area                                               |
|                                                                                          | • Mass                                               |
|                                                                                          | • Weight                                             |
|                                                                                          | • Heat energy                                        |
|                                                                                          | • Temperature                                        |
|                                                                                          | o Fahrenheit                                         |
|                                                                                          | o Centigrade                                         |
|                                                                                          | o Kelvin                                             |
|                                                                                          | o Rankin                                             |
|                                                                                          | • Pressure                                           |
|                                                                                          | o Absolute                                           |
|                                                                                          | o Gauge                                              |
| 7. Use the Pythagorean theorem of right angles                                           | • Hypotenuse, side opposite, side adjacent           |



**Program Overview  
Level 1**



- |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>8. Calculate piping measurements</p>                                     | <ul style="list-style-type: none"> <li>• Terms                             <ul style="list-style-type: none"> <li>o Thread allowance</li> <li>o Fitting allowance</li> <li>o End to end</li> <li>o End to centre</li> <li>o Centre to centre</li> <li>o Face to face</li> <li>o End to back</li> <li>o Back to back</li> <li>o Socket depth</li> </ul> </li> <li>• Calculations</li> <li>• Grades</li> <li>• Elevations</li> <li>• Benchmarks</li> </ul>                                                                                                                                                                                                                                                                                                                                                                  |
| <p>9. Calculate offsets using the applicable trigonometric function</p>     | <ul style="list-style-type: none"> <li>• Sine, cosine, tangent</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p>10. Calculate the required measurements for a parallel piping offset</p> | <ul style="list-style-type: none"> <li>• Equal spread</li> <li>• Rolling</li> <li>• Jumper</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>11. Define the properties of matter</p>                                  | <ul style="list-style-type: none"> <li>• Substances                             <ul style="list-style-type: none"> <li>o Elements</li> <li>o Compounds</li> <li>o Mixtures</li> </ul> </li> <li>• States (Phases)                             <ul style="list-style-type: none"> <li>o Solids</li> <li>o Liquids</li> <li>o Gases</li> </ul> </li> <li>• Changes of state                             <ul style="list-style-type: none"> <li>o Physical</li> <li>o Chemical</li> </ul> </li> <li>• Density                             <ul style="list-style-type: none"> <li>o Table of densities</li> </ul> </li> <li>• Relative densities</li> <li>• Tensile strength</li> <li>• Ductility</li> <li>• Malleability</li> <li>• Elasticity</li> <li>• Conductivity</li> <li>• Tenacity</li> <li>• Total force</li> </ul> |



**Program Overview  
Level 1**



- |                                                                                             |                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12. Use Pascal's theory of pressure and force                                               | <ul style="list-style-type: none"> <li>• Pounds</li> <li>• Pounds per square inch</li> <li>• Pascal's</li> <li>• Inches of water column</li> </ul>                                                                                     |
| 13. Describe factors that affect fluid flow in a piping system                              | <ul style="list-style-type: none"> <li>• Laminar flow</li> <li>• Turbulent flow</li> <li>• Specific gravity</li> <li>• Size</li> <li>• Piping material</li> <li>• Fittings</li> </ul>                                                  |
| 14. Describe the factors that affect volumes and pressures and velocities                   | <ul style="list-style-type: none"> <li>• Boyle's Law</li> <li>• Charles Laws</li> <li>• Combined Gas Law</li> <li>• Bernoulli's principle</li> </ul>                                                                                   |
| 15. Calculate the expansion and contraction of various materials due to heating and cooling | <ul style="list-style-type: none"> <li>• Ferrous</li> <li>• Non-ferrous</li> <li>• Thermoplastic</li> </ul>                                                                                                                            |
| 16. Define methods of heat transfer                                                         | <ul style="list-style-type: none"> <li>• Conduction</li> <li>• Convection</li> <li>• Radiation</li> </ul>                                                                                                                              |
| 17. Perform heat load calculations                                                          | <ul style="list-style-type: none"> <li>• Sensible, latent &amp; specific heat</li> <li>• British thermal unit</li> <li>• Watts</li> </ul>                                                                                              |
| 18. Characteristics of hydrocarbon gasses                                                   | <ul style="list-style-type: none"> <li>• Chemistry</li> <li>• Heat value</li> <li>• Specific gravity</li> <li>• Flow characteristics</li> <li>• Ignition and flame temperatures</li> <li>• Flame speeds</li> <li>• Odourant</li> </ul> |



Program Overview  
Level 1



**Line (GAC):** C **ORGANIZE WORK**  
**Competency:** C2 **Use Drawings and Specifications**

**Objectives**

To be competent in this area, the individual must be able to:

- Use drafting tools.
- Use drafting symbols, lettering and line conventions.
- Convert between isometric and orthographic projections.
- Interpret information found on a set of drawings.

**LEARNING TASKS**

**CONTENT**

- |                                                                          |                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Describe drafting tools and materials                                 | <ul style="list-style-type: none"> <li>• Drawing boards</li> <li>• T-squares</li> <li>• Triangles</li> <li>• Protractors</li> <li>• French curves</li> <li>• Pencils</li> <li>• Erasers and shields</li> <li>• Scale rulers</li> <li>• Compasses</li> <li>• Dividers</li> <li>• Templates</li> </ul> |
| 2. Use scale rulers to determine actual dimensions from a piping diagram | <ul style="list-style-type: none"> <li>• Scale rulers</li> </ul>                                                                                                                                                                                                                                     |
| 3. Apply piping symbols currently used in the gas fitting trade          | <ul style="list-style-type: none"> <li>• Tees</li> <li>• Flanges</li> <li>• Elbows</li> <li>• Valves</li> <li>• Anchors</li> <li>• Brackets</li> </ul>                                                                                                                                               |
| 4. Apply lettering and dimensioning for piping diagrams                  | <ul style="list-style-type: none"> <li>• Hidden lines</li> <li>• Object lines</li> <li>• Border lines</li> <li>• Center lines</li> <li>• Dimension lines</li> <li>• Extension lines</li> <li>• Phantom lines</li> </ul>                                                                              |



**Program Overview  
Level 1**



- |                                         |                                                                                                                                                                           |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5. Describe drawing projections         | <ul style="list-style-type: none"><li>• Isometric</li><li>• Orthographic</li><li>• Oblique</li><li>• Views</li></ul>                                                      |
| 7. Use tools to sketch irregular shapes | <ul style="list-style-type: none"><li>• Templates</li><li>• Compasses</li><li>• Spines</li></ul>                                                                          |
| 8. Read drawings and specifications     | <ul style="list-style-type: none"><li>• Legends</li><li>• Imperial and metric units</li><li>• Plot plans</li><li>• Sectional drawings</li><li>• Detail drawings</li></ul> |



**Program Overview  
Level 1**



**Line (GAC): C ORGANIZE WORK**  
**Competency: C3 Use Codes, Regulations and Standards**

**Objectives**

To be competent in this area, the individual must be able to:

- Identify codes and standards encountered in the gas fitting trade.
- Identify various environmental agencies that affect the gas fitting trade.

**LEARNING TASKS**

1. Identify code, standards and organizations affecting the gas fitting trade

**CONTENT**

- CSA B149.1
- CSA B149.2
- CSA B149.3
- Safety Standards Act
- Safety Standards General Regulation
- Gas Safety Regulation
- Electrical Safety Regulation
- American National Standards Institute (ANSI)
- American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)
- American Society of Mechanical Engineers (ASME)
- American Society of Testing and Materials (ASTM)
- Boiler Pressure Vessel Regulation/Act
- National Standards of Canada (CAN)
- Canadian Commission of Building and Fire Codes (CCBFC)
- Canadian General Standards Board (CGSB)
- Canadian Standards Association (CSA)
- National Building Code of Canada (NBC)
- National Fire Protection Association (NFPA)
- Underwriters' Laboratories of Canada (ULC)
- Municipal bylaws:
  - o Permits
- Leadership in Energy and Environmental Design (LEED)
- Testing Agencies



**Program Overview  
Level 1**



- |                                                                                              |                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Describe where the various codes and standards are encountered with the gas fitting trade | <ul style="list-style-type: none"><li>• Planning</li><li>• Installation</li><li>• Maintenance</li></ul>                                                                                                                                                       |
| 3 Describe the B149.1 Gas Code                                                               | <ul style="list-style-type: none"><li>• Layout</li><li>• Sections</li><li>• Contents</li><li>• Index</li><li>• Annexes</li><li>• Tables</li><li>• Definitions</li><li>• Scope</li></ul> <p>Revisions</p>                                                      |
| 4. Interpret Sections of the B149.1 Gas Code                                                 | <ul style="list-style-type: none"><li>• Scope</li><li>• Reference Publications</li><li>• Definitions</li><li>• General</li><li>• Piping and Tubing Systems, Hose, and Fittings</li></ul>                                                                      |
| 5. Use the Gas Regulations                                                                   | <ul style="list-style-type: none"><li>• Gas Safety Act</li><li>• Gas Safety Regulations</li><li>• Permits</li><li>• Notification of Completion</li><li>• Approvals</li><li>• Variations to the National Gas Code</li><li>• Bulletins and Directives</li></ul> |



**Program Overview  
Level 1**



**Line (GAC): C ORGANIZE WORK**  
**Competency: C4 Use Manufacturer and Supplier Documentation**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe documentation encountered in the gas fitting trade.
- Use information contained in manufacturer and supplier documentation.
- Use the internet to source manufacturer's documentation.

**LEARNING TASKS**

**CONTENT**

- |                                                                         |                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Describe the documentation encountered in the gas fitting trade      | <ul style="list-style-type: none"> <li>• Tools and equipment documentation</li> <li>• Material Safety and Data Sheets</li> <li>• System component documentation</li> <li>• Proprietary product documentation</li> <li>• Certification agencies</li> </ul> |
| 2. Use information contained in manufacturer and supplier documentation | <ul style="list-style-type: none"> <li>• Installation instructions and requirements</li> <li>• Operation and maintenance manuals</li> <li>• Product specifications</li> <li>• Warranty information</li> </ul>                                             |
| 3. Use the internet to source manufacturer's documentation              | <ul style="list-style-type: none"> <li>• Manufacturer's web-sites</li> <li>• Search engines</li> </ul>                                                                                                                                                    |



**Program Overview  
Level 1**



**Line (GAC): D INSTALL AND SERVICE FUEL SYSTEMS**

**Competency: D1 Describe the Gas Delivery System**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe the parts of a natural gas delivery and distribution system.
- Describe the parts of a propane delivery and storage system.

**LEARNING TASKS**

**CONTENT**

- |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Describe the parts of a natural gas fuel delivery system.</p> | <ul style="list-style-type: none"> <li>• Utility provider                         <ul style="list-style-type: none"> <li>o Gas well</li> <li>o Compressor station</li> <li>o City gate station</li> <li>o District regulator station</li> <li>o Distribution regulator</li> <li>o Gas main</li> <li>o Gas service</li> <li>o Service stop (valve)</li> <li>o Service regulator</li> <li>o Meter</li> </ul> </li> <li>• Consumer                         <ul style="list-style-type: none"> <li>o Gas supply or building line</li> <li>o Branch line</li> <li>o Drop line</li> <li>o Riser</li> <li>o Drip or dirt pocket</li> <li>o Extension                                 <ul style="list-style-type: none"> <li>• Gas pressures</li> </ul> </li> <li>o High</li> <li>o Low</li> </ul> </li> </ul> |
| <p>2. Describe the parts of a propane gas system.</p>               | <ul style="list-style-type: none"> <li>• Vapour distribution</li> <li>• Liquid distribution</li> <li>• Storage</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |



**Program Overview  
Level 1**



**Line (GAC): D INSTALL AND SERVICE FUEL SYSTEMS**

**Competency: D2 Install Piping and Tubing Systems**

**Objectives**

To be competent in this area, the individual must be able to:

- Select piping and tubing for gas installations.
- Install gas piping and tubing.

**LEARNING TASKS**

**CONTENT**

1. Describe piping, tubing and hoses

- Types
  - o Black iron pipe
  - o Copper tubing
  - o PE gas piping
  - o Corrugated stainless steel tubing
  - o Hoses
- Schedules and grades
- Pressure ratings
- Nominal sizes
- Protective coatings
- Cathodic protection
- Identification markings

2. Describe joining piping and tubing

- Safety
- Methods
  - o Welding
  - o Threading
  - o Flaring
  - o Compression fittings
  - o Brazing
- Procedure
- Tools
- Fittings

3. Describe valves

- Types
  - o Plug valves
  - o Butterfly
  - o Ball valves
  - o Needle valves
- Construction
- Operation
- Pressure markings and ratings

**Program Overview  
Level 1**

- Maintenance
- Special purpose
  - o Pressure relief
  - o Temperature relief
  - o Pressure reducing/Regulator
- 4. Describe supports
  - Types
  - Construction
  - Uses
  - Seismic
  - Protective materials
    - o Types
    - o Purpose
  - Spacing
  - Inserts and fasteners
  - Installation procedures
- 5. Install piping, tubing and hoses
  - Types
  - Methods
  - Size
  - Pressures
  - Identification
  - Procedures
  - Fittings
  - Valves
  - Pressure reducing valves/Regulators
  - Prohibited practice
  - Location limitations
  - Structural penetrations
    - o Fire stopping
  - Outlets
  - Drip or dirt pockets
  - Between buildings
  - Concealment
  - In concrete
  - Underground
  - Support
  - Tools
  - Testing
  - Purging



**Program Overview  
Level 1**



6. Describe residential and commercial gas pipe installation
  - Code requirements
  - Pressures
    - o Low Pressure
    - o 2 psig (14 kPa)
    - o High Pressure
  - Pipe/tube sizing
    - o Appliance Rating
    - o Distance
    - o Allowable pressure drop
    - o Piping or tubing type
    - o Type of gas
    - o Fittings
  - Hanger spacing
  - Leak testing
    - o Rough in
    - o After appliance connection
  - Leak repair
  - Valve tightness of closure testing and repair
  - Purging
    - o Air with gas
    - o Gas with inert gasses
  - Pressure measurement
    - o Standing
    - o Operating
    - o Manifold
    - o Differential
    - o Drop
  - Pressure adjustment
    - o Gas line
    - o Manifold
  - Appliance connection
    - o Approved hose
    - o Flexible metallic hose
    - o Connectors



**Program Overview  
Level 1**



**7. Install piping, tubing and hoses**

- Methods
- Size
- Pressures
- Identification
- Procedures
- Fittings
- Valves
- Prohibited practice
- Location limitations
- Outlets
- Drip or dirt pockets
- Between buildings
- Concealment
- In concrete
- Underground
- Support
- Protection
- Tools
- Testing
  - o Prior to appliance connection
  - o After appliance connection
- Purging
  - o Under 4 inch
  - o 4 inch and larger

**Achievement Criteria**

**Performance** The individual will construct a gas pipe installation.

**Conditions** The individual will be given:

- Shop space and materials
- Tools and test equipment

**Criteria** The individual will score 70% or better on a rating sheet that reflects the following criteria:

- Safety
- To code
- Pipe selection
- Assembly
- Testing procedures
- Leak free



**Program Overview  
Level 1**



**Line (GAC): D INSTALL AND SERVICE FUEL SYSTEMS**

**Competency: D5 Install and Service Propane Systems**

**Objectives**

To be competent in this area, the individual must be able to:

- Describe the requirements for the installation of propane storage cylinder systems.
- Install propane storage cylinder systems.

**LEARNING TASKS**

1. Install propane cylinder systems

**CONTENT**

- Code requirements
- Sizing
  - o Load factors
- Temperature effects on pressure
- Filled capacity effect on vapourization rate
- Cylinder sizing
  - o Determine vapourization capacity of cylinders at various temperatures, colours, humidity and filled capacities
- Describe cylinder clearances from building
  - o Openings
  - o Air intakes
  - o Doors
  - o Windows
  - o Flue termination
  - o Drier vents
- Installation procedures
- Regulator placements
- Safety relief valves
  - o Pressures
  - o Location of discharge outlets
  - o Calculations of rate of discharge
- Maintenance
- Valves and accessories for vapour withdrawal applications
  - o Description
  - o Operation
  - o Maintenance
- Valves and accessories for liquid withdrawal applications
  - o Description
  - o Operation
  - o Maintenance



**Program Overview  
Level 1**



- o Excess flow valves
- Valves and accessories for filling applications
  - o Description
  - o Operation
- o Maintenance
- Filling density at standard temperature
- Filling capacity by weight
- Vehicle impact protection
- Vehicle access for filling storage tanks
- Filling safety
- Emergency procedures



## MEMO

To: UEC  
From: Sylvie Murray, Program Development and Quality Assurance Coordinator  
Date: June 13, 2016  
Subject: Addition of Director of Advising as ex-officio non-voting member

---

This is to recommend the addition of the Director of Advising as an ex-officio non-voting member of UEC.

Background: The position of Director of Advising was created in April 2015. As a position that provides institution-wide leadership on matters related to advising, the Director will have a unique and important perspective to bring to UEC. It is equally important that the Director be well informed of undergraduate curricular matters, and how they impact all faculties, programs, and students. Finally, since the Director sits on many committees, attending UEC will allow her to share information and inform priorities and decisions in other committees.

**UEC MEETING DATES AND AGENDA DEADLINES 2016/17**

UEC meetings generally take place in week 4 of the UFV meeting schedule. All agenda exhibits must be submitted to the UEC office by **12 noon** on the deadline date.

| <b>Meeting Dates<br/>&amp; Room</b>                         | <b>Agenda Exhibit Deadline<br/>(12:00 pm)</b> |
|-------------------------------------------------------------|-----------------------------------------------|
| <b>September 2, 2016</b><br>(Room and time to be confirmed) | UEC meeting, followed by UEC retreat          |
| <b>September 30, 2016</b><br>A225 — 10 am                   | September 21, 2016                            |
| <b>October 28, 2016</b><br>A225 — 10 am                     | October 19, 2016                              |
| <b>November 25, 2016</b><br>A225 — 10 am                    | November 16, 2016                             |
| <b>December 16, 2016*</b><br>A225 — 10 am                   | December 7, 2016                              |
| <b>January 27, 2017</b><br>A225 — 10 am                     | January 18, 2017                              |
| <b>February 24, 2017</b><br>A225 — 10 am                    | February 15, 2017                             |
| <b>March 24, 2017</b><br>A225 — 10 am                       | March 15, 2017                                |
| <b>April 21, 2017</b><br>A225 — 10 am                       | April 12, 2017                                |
| <b>May 19, 2017</b><br>A225 — 10 am                         | May 10, 2017                                  |
| <b>June 16, 2017</b><br>A225 — 10 am                        | June 7, 2017                                  |

\*Please note that this meeting will take place in week 3 of the UFV meeting schedule.



# UNDERGRADUATE EDUCATION COMMITTEE MEMBERSHIP 2016/17

| AREA REPRESENTED                                                    | TERMS OF OFFICE          | MEMBER                                                     |
|---------------------------------------------------------------------|--------------------------|------------------------------------------------------------|
| <b>Voting Members</b>                                               |                          |                                                            |
| Vice-Chair, University Secretary & Registrar (or designate)         | On-going                 | Jody Gordon (Acting Registrar)                             |
| <i>9 faculty members approved by Senate, at least 2 from Senate</i> |                          |                                                            |
| Faculty member of Senate                                            | 08-01-2015 to 07-31-2018 | Maria Bos-Chan, Faculty of Access and Continuing Education |
| Faculty member of Senate                                            | 08-01-2016 to 07-31-2019 | Teresa Arroliga Piper, Faculty of Humanities               |
| Faculty                                                             | 08-01-2016 to 07-31-2018 | Samantha Pattridge, Faculty of Humanities                  |
| Faculty                                                             | 08-01-2016 to 07-31-2018 | Emilio Landolfi, Faculty of Health Sciences                |
| Faculty                                                             | 08-01-2016 to 07-31-2018 | Vacant                                                     |
| Faculty                                                             | 08-01-2016 to 07-31-2018 | Vacant                                                     |
| Faculty                                                             | 08-01-2016 to 07-31-2018 | Vacant                                                     |
| Faculty                                                             | 08-01-2016 to 07-31-2018 | Vacant                                                     |
| Faculty                                                             | 08-01-2016 to 07-31-2018 | Vacant                                                     |
| 2 deans or associate deans, approved by Senate                      | 08-01-2015 to 07-31-2018 | John English, Faculty of Applied & Technical Studies       |
|                                                                     | 08-01-2015 to 07-31-2018 | Sue Brigden, Faculty of Access and Continuing Education    |
| 1 academic advisor                                                  | 08-01-2016 to 07-31-2018 | Rhonda Colwell, Academic Advisor                           |
| 1 staff member, approved by Senate                                  | 08-01-2016 to 07-31-2018 | Vacant                                                     |
| 2 undergraduate students, approved by Senate                        | 08-01-2016 to 07-31-2017 | Jared De Bruin, BA, History (Senator)                      |
|                                                                     | 08-01-2016 to 07-31-2018 | Arashpreet Tamber, BSc                                     |
| Director, Teaching and Learning                                     | On-going                 | Maureen Wideman                                            |
| University Librarian (or designated librarian) (ex officio)         | On-going                 | Heather Compeau (designate)                                |
| <b>Ex-Officio Non-Voting Member</b>                                 |                          |                                                            |
| Provost & Vice-President, Academic (or designate)                   | On-going                 | Peter Geller (designate to July 31, 2018)                  |
| AVP, Engagement & Graduate Studies (or designate)                   | On-going                 | Kirsten Robertson (designate)                              |
| Executive Director, International Education                         | On-going                 | David McGuire                                              |
| Senior Advisor on Indigenous Affairs                                | On-going                 | Shirley Hardman                                            |
| Manager, Enrolment Planning                                         | On-going                 | Donna Alary                                                |
| AVP, Institutional Research and Integrated Planning                 | On-going                 | Vladimir Dvoracek                                          |
| Coordinator, Program Development and Quality Assurance              | On-going                 | Sylvie Murray                                              |
| <b>Administrative Support</b>                                       |                          |                                                            |
| University Secretariat                                              |                          | Amanda Grimson                                             |

**CURRENT MEMBERSHIP: 25 members - 18 voting members and 7 non-voting members**

**Quorum: Fifty percent (50%) of voting membership (not including vacancies)**

Current as of June 10, 2016

### Calendar Copy

**1. Faculty and department of program**

Faculty of Science (Biology Department) and Agriculture Programs

**2. Website** (*department, or program-specific if applicable*)

Faculty of Science – [http://www.ufv.ca/faculty\\_of\\_science/](http://www.ufv.ca/faculty_of_science/) [primary site]

Agriculture Programs -- <http://www.ufv.ca/agriculture/> [link to primary site]

**3. Program title/credential**

Bachelor of Agricultural Science, Horticulture major

**4. Associated degree program** (*for major, minor, or extended minor only*) N/A

**5. Program introduction/calendar description** (*brief description, usually 1-3 paragraphs*)

The UFV Bachelor of Agricultural Science (BAS) Horticulture Major emphasizes the academic study of the natural sciences in combination with an applied agriculture curriculum. The program will provide students with an understanding of science and the practical nature of large scale horticulture production. Breadth of knowledge will be enhanced by communication, business, and general elective courses related to agriculture in society, in addition to science and agriculture courses. Students graduating from this program will-can meet the academic requirements to apply for membership in the BC Institute of Agrology to obtain Professional Agrologist (P.Ag.) designation (<https://www.bcia.com/members/new-member-application>).

The BAS ~~consists of~~requires 120 credits. To receive a Bachelor of Agricultural Science degree, students must complete an industry based practicum (Agriculture 192) ~~or and~~ an applied research project (via a Capstone course) which provides graduates with practical experience with which to enter the workforce and face the challenges associated with the horticulture industry.

**6. Entrance requirements**

Students may ~~ladder transition~~ into the program from the Agriculture Technology ~~Diploma horticulture program~~ or enter directly from High school.

Option 1: Students ~~laddering transitioning~~ from the first year of the Agriculture Technology ~~Diploma horticulture program~~ (or equivalent) must satisfy the Agriculture Technology program~~diploma's~~ entrance requirements (see [here](#) for requirements). Students may also need to complete the prerequisites for BIO 111 and CHEM 113 or CHEM 110.

Option 2: Direct entry:

1. B.C. secondary school graduation or equivalent;
2. Chemistry 12, CHEM 093 or CHEM 110 with a C or better;
3. One of Foundations of Mathematics 12, Precalculus 12, Principles of Math 12, or Applications of Math 12; or Math 094/095; or Math 096; or Math 110
4. Biology 11 or BIO 083 with a C+ or better; and
5. Prerequisites for CMNS 125 or CMNS 155.

**7. When to apply** (*either specific intake or continuous application, if applicable*)

Applications are accepted on a continuous basis throughout the year. However, Agriculture Technology Diploma students are encouraged to apply to the degree prior to the end of semester three of the Diploma. Their application will be reviewed based on work complete to date.

Qualified applicants are considered for the next intake in which there is space. See Continuous application process (*calendar link*) for more information.

**8. How to apply**

1. Apply online at [ufv.ca/admissions/admissions/apply/](http://ufv.ca/admissions/admissions/apply/). You will be asked to submit an application fee, which can be paid in a variety of online methods.
2. You will be advised of an admission decision and, if accepted, will be provided with registration information. A deposit is required when you register (see the Fees and Other Costs (*calendar link*) section). This money will be applied toward your tuition fees. Final payment of all course fees is due the end of the second week of classes.

**9. Basis for admission decision** (*specify either competitive or non-competitive admission*)

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

**10. Fees and additional costs** (*a link to the general fees section of the calendar will be included; specify additional costs such as materials, fieldtrips, studio supplies, textbook costs, uniforms, software, etc.*)

See the [Fees and Other Costs](#) section.

**11. Program duration and total number of credits**

With appropriate planning, the Bachelor of Agricultural Science requirements (120 credits) 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 a [UFV science Advisor](#) to plan their coursework in advance, in order to complete their degree in a timely manner. The choice of which courses are to be offered each year will be made with reference to the needs of students who have been admitted in the program or have formally declared their intention to complete the degree.

**12. Location** (*if applicable*)

The degree can be largely completed on the UFV Canada Education Park campus in Chilliwack, although some courses, especially at the upper level, may be offered at the Abbotsford campus only. Practicum may be on off-campus sites.

**13. Program outline** (*courses to be completed*)

To receive a Bachelor of Agricultural Science, students must complete [120 credits to include](#) the general requirements (Business, Statistics and Communication; Lower-level Science; and Agriculture in Society) and the Horticulture major requirements. At least 45 credits must be at the upper level.

A minimum CGPA of 2.0 in the BAS program, a minimum CGPA of 2.0 in your major, and a minimum CGPA of 2.0 in all upper-level credits is required for graduation.

**BAS GENERAL REQUIREMENTS****Business, Statistics and Communication****13 credits**

| Course Number                                                                                                                 | Course Title                                                                                                                                    | Credits |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <a href="#">BUS 100</a><br>or<br><a href="#">AGRI 142</a><br>or<br><a href="#">ECON 100</a><br>or<br><a href="#">ECON 101</a> | <i>Introduction to Business</i><br><i>Agribusiness Principles</i><br><i>Principles of Microeconomics</i><br><i>Principles of Macroeconomics</i> | 3       |
| <a href="#">STAT 104</a><br>or<br><a href="#">STAT 106</a>                                                                    | <i>Introductory Statistics</i><br><i>Statistics I</i>                                                                                           | 4       |
| <a href="#">CMNS 125</a><br>or<br><a href="#">CMNS 155</a>                                                                    | <i>Introduction to Workplace Communication</i><br><i>Introduction to Workplace and Academic Communication</i>                                   | 3       |
| <a href="#">GEOG/CMNS 257</a><br>or<br><a href="#">CMNS 325</a>                                                               | <i>Environment: Science and Communications</i><br><i>or</i><br><i>Writing for Sciences and Technologies</i>                                     | 3       |

**Lower-level Science****21-2 credits**

| Course Number                                                 | Course Title                                                      | Credits                    |
|---------------------------------------------------------------|-------------------------------------------------------------------|----------------------------|
| <a href="#">CHEM 113</a><br>or<br><a href="#">CHEM 110</a>    | <i>Principles of Chemistry I</i><br><i>Introductory Chemistry</i> | <del>4</del> 5<br><u>4</u> |
| <a href="#">BIO 111</a>                                       | <i>Introduction to Biology I</i>                                  | 5                          |
| <a href="#">BIO 201</a>                                       | <del><i>Cellular-Cell Biochemistry and Metabolism</i></del>       | 4                          |
| <a href="#">BIO 210</a><br>or<br><a href="#">BIO/GEOG 219</a> | <i>Introduction to Ecology</i><br><i>Biogeography</i>             | 4                          |
| <a href="#">BIO 220</a>                                       | <i>Genetics</i>                                                   | 4                          |

**Note:** Students will be advised that they may have to take [BIO 112](#), *Introductory Biology II* (5 credits) as a prerequisite for BIO 210, BIO 330, BIO 410, BIO 430 or GEOG 315. Students wishing to take GEOG 353 (Agrology upper-level elective) will need [GEOG 253](#), *Introduction to Geographic Information Systems* (4 credits).

**Agriculture in Society***Students choose two or three courses from the following for a minimum of 8 credits*

| Course Number                | Course Title                                                              | Credits |
|------------------------------|---------------------------------------------------------------------------|---------|
| <a href="#">GEOG 311</a>     | <i>Global Resources and the Environment</i>                               | 4       |
| <a href="#">GEOG 312</a>     | <i>Political Ecology: <del>Nature, Culture and Place</del></i>            | 4       |
| <a href="#">GEOG/SOC 313</a> | <i>Agriculture and Rural Life</i>                                         | 4       |
| <a href="#">GEOG 314</a>     | <i>Geography of Food</i>                                                  | 4       |
| <a href="#">GEOG/GDS 340</a> | <i>Geographies of Poverty and Development</i>                             | 4       |
| <a href="#">GEOG 360</a>     | <i>Introduction to Regional and Community Planning</i>                    | 4       |
| <a href="#">GEOG 364</a>     | <i>International Planning and Development: Adapting to Climate Change</i> | 4       |
| <a href="#">SOC/ANTH 260</a> | <i>Food for Thought: Food, Culture, and Society</i>                       | 3       |
| <a href="#">SOC/ANTH 360</a> | <i>Eating and Thinking: Food, Identity, and Power in Global Societies</i> | 4       |
| <a href="#">PHIL 318</a>     | <i>Environmental Ethics</i>                                               | 3       |
| <a href="#">BIO/IPK 477</a>  | <i>Traditional Ecological Knowledges</i>                                  | 4       |

## HORTICULTURE MAJOR REQUIREMENTS

### Horticulture Technology

33 credits

| Course Number            | Course Title                                              | Credits |
|--------------------------|-----------------------------------------------------------|---------|
| <a href="#">AGRI 123</a> | Horticulture Skills and Techniques for Fall               | 3       |
| <a href="#">AGRI 124</a> | Introduction to Horticulture                              | 3       |
| <a href="#">AGRI 129</a> | Horticulture Skills and Techniques for Winter             | 3       |
| <a href="#">AGRI 163</a> | Pest Biology and Identification                           | 3       |
| <a href="#">AGRI 183</a> | Farm and Equipment Safety                                 | 3       |
| <a href="#">AGRI 192</a> | Practicum I                                               | 3       |
| <a href="#">AGRI 203</a> | Fundamentals of Pest Management                           | 3       |
| <a href="#">AGRI 204</a> | Introduction to Soils and Soil Fertility                  | 3       |
| <a href="#">AGRI 212</a> | Introduction to On-Farm Food Safety, Quality and Security | 3       |
| <a href="#">AGRI 220</a> | Plants in the Landscape                                   | 3       |
| <a href="#">AGRI 272</a> | Agriculture Seminar Series                                | 3       |

### Agrology -- Agriculture

21 credits

| Course Number             | Course Title                                             | Credits |
|---------------------------|----------------------------------------------------------|---------|
| <a href="#">AGRI 306*</a> | Field Techniques in Pest Management                      | 3       |
| <a href="#">AGRI 311</a>  | Sustainable Soil Management                              | 3       |
| <a href="#">AGRI 321</a>  | Vegetable Crop Production: Science & Practice            | 3       |
| <a href="#">AGRI 323</a>  | Fruit Crop Production: Science & Practice                | 3       |
| <a href="#">AGRI 324</a>  | Greenhouse Production: Science & Practice                | 3       |
| <a href="#">AGRI 327</a>  | Nursery Production and Propagation: Science & Practice   | 3       |
| <a href="#">AGRI 371</a>  | Sustainable Holistic Agriculture: Planning and Practices | 3       |

\* Students who have taken AGRI 206 will be considered to have satisfied the AGRI 306 requirement. Students with AGRI 206 cannot take AGRI 306 for further credit and must ensure they satisfy the minimum of 45 upper level credits required for the BAS degree through their selection of elective courses.

### Agrology -- Electives

Students choose four or five courses from the following

14-20 credits

| Course Number            | Course Title                           | Credits |
|--------------------------|----------------------------------------|---------|
| <a href="#">BIO 308</a>  | Plant Physiology                       | 4       |
| <a href="#">BIO 309</a>  | Microbiology I                         | 4       |
| <a href="#">BIO 330</a>  | Plants and Animals of British Columbia | 4       |
| <a href="#">BIO 360</a>  | Insect Biology                         | 4       |
| <a href="#">BIO 407</a>  | Applied Biotechnology                  | 3       |
| <a href="#">BIO 410</a>  | Plant Ecology                          | 4       |
| <a href="#">BIO 426</a>  | Environmental Microbiology             | 4       |
| <a href="#">BIO 430</a>  | Forest Ecology                         | 3       |
| <a href="#">GEOG 303</a> | Principles of Hydrology                | 4       |
| <a href="#">GEOG 308</a> | Climate Change and Variability         | 4       |
| <a href="#">GEOG 315</a> | Soil Process and Function              | 4       |
| <a href="#">GEOG 318</a> | Water Resources Management             | 4       |
| <a href="#">GEOG 353</a> | GIS Applications                       | 4       |

### Capstone – Students choose one course from the following\*

4-5 credits

| Course Number            | Course Title                    | Credits |
|--------------------------|---------------------------------|---------|
| <a href="#">AGRI 390</a> | Directed Studies in Agriculture | 4-5     |

## Addendum: 3.4, Bachelor of Agricultural Science

|                           |                                              |               |
|---------------------------|----------------------------------------------|---------------|
| <a href="#">AGRI 490</a>  | <i>Directed Studies in Agriculture</i>       | <del>43</del> |
| <a href="#">BIO 421</a>   | <i>Special Topics in Applied Biology</i>     | 4             |
| <a href="#">GEOG 452*</a> | <i>Advanced Field Methods and Techniques</i> | 4             |
| <a href="#">GEOG 470*</a> | <i>Advanced Field Studies in Geography</i>   | 5             |
| <a href="#">GEOG 480*</a> | <i>Directed Readings</i>                     | 4             |
| <a href="#">GEOG 484*</a> | <i>Directed Studies</i>                      | 4             |

\*Specific topics to be approved by the [Bachelor of Agricultural Science Program Advisory group](#)~~Committee~~

### 14. Program Regulations

#### a. Residency

Of the overall total of 120 credits, 60 credits must be completed at UFV. At least 50% of the upper-level credits in the Horticulture major (including the capstone course) must be completed at UFV.

#### b. Graduation

It is the student's responsibility to ensure all program requirements are met. This should be done by regular consultation with a UFV ~~science advisor~~[Advisor](#).

All degree candidates must be approved by the UFV ~~Advising~~[Science Advice Centre](#).

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. 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.

#### c. 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 ~~approval~~[permission](#) of the ~~department head~~[appropriate dean](#) or designate [for the discipline](#). Where a course has been repeated, only the higher grade is counted in the GPA calculation. See UFV's [Course Repeat policy \(86\)](#).

No more than five upper-level course duplications will be permitted on courses which apply to the BAS. Students with more than five upper-level course duplications will be required to withdraw from the program.