CIVE601 Research Methods

Term – Fall 2019 (201909)

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Office Hours</th>
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</thead>
<tbody>
<tr>
<td>Dr. Thomas Froese</td>
<td>Mondays and Thursday, 1:00 to 2:00 PM</td>
</tr>
<tr>
<td>Phone: 250 721 7066</td>
<td>Location: ECS 420</td>
</tr>
<tr>
<td>E-mail: <a href="mailto:froese@uvic.ca">froese@uvic.ca</a></td>
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</tbody>
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List all prerequisites and co-requisites:
- Either ENGR 110, or ENGR 112 and ENGL 135; and
- Either ENGR 120, or ENGR 121 and ENGR 240.

LECTURE DATE(S)
Section: A01 /CRN 10576  Days: Mon  Time: 10:00 – 11:50  Location: DSB C124

TUTORIAL SECTIONS
none

LAB SECTIONS
none

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<tr>
<th>TA Name</th>
<th>E-mail</th>
<th>Office</th>
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Required Text  Optional Text
None: references will be provides through the course web site.

COURSE OBJECTIVES:
This course introduces graduate students in UVic’s Civil Engineering research programs to research methodology. Students will become familiar with overall frameworks for research activities, a variety of research methods, and the processes of designing and conducting research projects. Students will develop their research skills by completing an independent research project.

LEARNING OUTCOMES: At the end of this course, students will be able to:
1. **Research Frameworks**
   - Apply general research frameworks to design research projects a given topic.

2. **Literature Review**
   - Conduct and document thorough literature reviews.

3. **Research Methods**
   - Describe a broad range of research methods and apply some of these to a given research topic.

4. **Technical Writing and Presentations**
   - Meet expectations for preparation of a conference research paper and presentation.

**LEARNING ACTIVITIES:**

**The task: the individual research project**

The major activity for this course will be an independent research project that each student will design and carry out during the term. Components of this project will include:

- A research “Sketch” (very brief research plan) for one or more of the provided proposed research topics.
- A research proposal
- A literature review and a presentation of one research paper
- A conference manuscript report and presentation of the final research results.

The final research results will be presented at the annual UVic Civil Engineering Graduate Student Research Day early in 2020.

**The structure: the research framework**

The central learning objective of this course is to develop proficiency in working with a research framework. Most of the activity in this course will be structured around the idea of a research framework: a generic structure that describes almost any type of research project. Notes describing elements of the research framework will be provided. Students work on their independent research projects will closely follow this research framework and the class sessions during the term will generally follow the main sections of this generic research framework.

**The Course Format: workshop sessions**

Most class sessions will be conducted in a workshop format. Although students will be conducting independent research projects, all students will be assigned to a team of approximately 3 students for the duration of the course. Each team will interact closely each class to provide meaning feedback to each other’s work. The typical workshop format classes will involve the following activities:

- **Pre-class:**
  - A reading and writing assignments to be prepared prior to class
    - Typically, assignment materials should be posted to the course google drive prior to class.

- **In-Class:**
  - Team discussions: each team member will take turns presenting their work to their teammates, who will provide critical questions, feedback, and suggestions on their work.
  - Class presentations: One, some, or all of the team members will summarize their work to the entire class.

- **After Class:**
  - Each team member must prepare a short write-up of feedback to their other team members. Feedback is also submitted to the instructor for grading.
  - Each student may revise their assignment based on the feedback and submit a final version for grading.
**Weight & Date(s) of Assessments:**

<table>
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<tr>
<th>Assessment</th>
<th>Weight</th>
<th>Date</th>
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<tbody>
<tr>
<td>Assignments (approximately 9): Research sketches; research paradigms; front sections; lit. review, project methods; research methods.</td>
<td>40% (total distributed among all assignments)</td>
<td>Most classes, one week after class session.</td>
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<tr>
<td>Feedback provided to team members</td>
<td>10%</td>
<td>Most classes, 1 day after class session.</td>
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<tr>
<td>Final Paper</td>
<td>50%</td>
<td>Dec. 2.</td>
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<tr>
<td>Mid-term: none</td>
<td>%</td>
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<tr>
<td>Final Exam: none</td>
<td>% (max 60% unless approved otherwise)</td>
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Details of assignment and project requirements will be provided in class and on course web site

**NOTE:**

Class attendance is required. Students will not receive credit for any team work in which they are not in attendance. Students who fail to attend at least 80% of class sessions may not be permitted to get credit for the course.  
[https://web.uvic.ca/calendar2018-09/grad/academic-regulations/attendance.html](https://web.uvic.ca/calendar2018-09/grad/academic-regulations/attendance.html)

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

**COURSE LECTURE NOTES**

Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.

**There will be no supplemental examination for this course.**

**Syllabus statement**

A note to remind you to take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You are not alone.

**Counselling Services** - Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students. [https://www.uvic.ca/services/counselling/](https://www.uvic.ca/services/counselling/)

**Health Services** - University Health Services (UHS) provides a full service primary health clinic for students, and coordinates healthy student and campus initiatives. [http://www.uvic.ca/services/health/](http://www.uvic.ca/services/health/)

**Centre for Accessible Learning** - The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations [https://www.uvic.ca/services/cal/](https://www.uvic.ca/services/cal/). The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

**Elders’ Voices** - The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty and administration in Indigenous ways of knowing and being. [https://www.uvic.ca/services/indigenous/students/programming/elders/index.php](https://www.uvic.ca/services/indigenous/students/programming/elders/index.php)
GENERAL INFORMATION

Note to Students:
Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email.

Attendance
Students are expected to attend all classes in which they are enrolled. An academic unit may require a student to withdraw from a course if the student is registered in another course that occurs at the same time....
Students who are absent, late or cannot attend an entire class because of illness, an accident or family affliction should report to their instructors as soon as possible.
An instructor may refuse a student admission to a lecture, laboratory, online course discussion or learning activity, tutorial or other learning activity set out in the course outline because of lateness, misconduct, inattention or failure to meet the responsibilities of the course set out in the course outline. Students who neglect their academic work may be assigned a final grade of N or debarred from final examinations.
Students who do not attend classes must not assume that they have been dropped from a course by an academic unit or an instructor. Courses that are not formally dropped will be given a failing grade, students may be required to withdraw and will be required to pay the tuition fee for the course. UVic Calendar (2019-2020) http://web.uvic.ca/calendar/undergrad/info/regulations/attendance.html.

Accommodation of Religious Observance
The University recognizes its obligation to make reasonable accommodation for students whose observance of holy days might conflict with the academic requirements of a course or program.
Students are permitted to absent themselves from classes, seminars or workshops for the purposes of religious or spiritual observance. In the case of compulsory classes or course events, students will normally be required to provide reasonable notice to their instructors of their intended absence from the class or event for reasons of religious or spiritual observance. In consultation with the student, the instructor will determine an appropriate means of accommodation. The instructor may choose to reschedule classes or provide individual assistance.
Where a student’s participation in a class event is subject to grading, every reasonable effort will be made to allow the student to make up for the missed class through alternative assignments or in subsequent classes. Students who require a rescheduled examination must give reasonable notice to their instructors. If a final exam cannot be rescheduled within the regular exam period, students may request an academic concession.
To avoid scheduling conflicts, instructors are encouraged to consider the timing of holy days when scheduling class events.
For further information, including a list of days of religious observances, please contact the Equity and Human Rights Office or visit their website: <www.uvic.ca/equity>.

Discrimination and Harassment Policy (GV0205) http://web.uvic.ca/calendar/general/policies.html

Standards for Professional Behaviour
“it is the responsibility of all members of the Faculty of Engineering, students, staff and faculty, to adhere to and promote standards of professional behaviour that support an effective learning environment that prepares graduates for careers as professionals....”
You are advised to read the Faculty of Engineering Document Standards for Professional Behaviour which contains important information regarding conduct in courses, labs, and in the general use of facilities. https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf

Policy on Academic Integrity
Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the Undergraduate Calendar http://web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.html for the UVic policy on academic integrity.

Equality
This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation. Alternatively, you may want to contact the Centre for Accessible Learning located in the Campus Services Building.
The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members.
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<tr>
<th>Class</th>
<th>Week</th>
<th>Topics</th>
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<tr>
<td>1</td>
<td>Mon, Sep 9</td>
<td>Introduction to the Course; the project; the framework</td>
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<tr>
<td>2</td>
<td>Mon, Sep 16</td>
<td>Research sketched</td>
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<tr>
<td>3</td>
<td>Mon, Sep 23</td>
<td>Research paradigms</td>
</tr>
<tr>
<td>4</td>
<td>Mon, Sep 30</td>
<td>Research Openings</td>
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<tr>
<td>5</td>
<td>Mon, Oct 7</td>
<td>Literature Reviews</td>
</tr>
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<td>-</td>
<td>Mon, Oct 14</td>
<td>Thanksgiving</td>
</tr>
<tr>
<td>6</td>
<td>Mon, Oct 21</td>
<td>Research Methods 1: Qualitative Methods</td>
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<tr>
<td>7</td>
<td>Mon, Oct 28</td>
<td>Research Methods 2: Quantitative Methods</td>
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<tr>
<td>8</td>
<td>Mon, Nov 4</td>
<td>Individual research project methods</td>
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<tr>
<td>-</td>
<td>Mon, Nov 11</td>
<td>Remembrance Day &amp; Reading Break</td>
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<tr>
<td>9</td>
<td>Mon, Nov 18</td>
<td>Research Methods 3: Statistics</td>
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<tr>
<td>10</td>
<td>Mon, Nov 25</td>
<td>Research Methods 4: Validity</td>
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<tr>
<td>11</td>
<td>Mon, Dec 2</td>
<td>Final projects</td>
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