



**Faculty of Engineering**  
**Department of Civil Engineering**  
**COURSE OUTLINE**

**CIVE 580 – Directed Studies (Water and Wastewater Treatment)**

**Term – Fall 2020**

**Acknowledgement of the Land**

We acknowledge with respect the Lekwungen peoples on whose traditional territory the university stands and the Songhees, Esquimalt and WSÁNEĆ peoples whose historical relationships with the land continue to this day.

<b>Instructor</b>	<b>Office Hours:</b> by email appointment only
Dr. Caetano Dorea	Days: M
Phone: 250 472 5844	Time: 10:00 to 11:50
E-mail: caetanodorea@uvic.ca	Location: ECS 304A

**List all prerequisites and co-requisites: N/A**

**LECTURE DATE(S):** Weekly group discussion meetings and ad hoc individual meetings.

**REQUIRED TEXT:**

Crittenden et al. (2012) MWH Water Treatment: Principles and Design. Wiley; 3<sup>rd</sup> edition.

**COURSE OBJECTIVES:**

To apply knowledge of mathematics, physics, chemistry, and microbiology to characterize, solve and analyze engineering-related issues relative to drinking water quality and treatment.

**LEARNING OUTCOMES:** At the end of this course, students will be able to:

- Discuss the role and relevance of drinking water quality characteristics with regard to their treatment objectives (e.g. health, operational, etc.).
- Apply fundamental concepts in mathematics, chemistry, physics, and (micro)biology to the design and operation of key drinking water treatment processes.
- Demonstrate consumption and critical appraisal of drinking water related scientific literature.

**TEACHING AND LEARNING STRATEGIES:**

Teaching and learning strategies consist of discussion sessions combined with independent study/work based on assigned readings, problem sets, laboratory work, field visits, and individual assignments to assist students understand, apply, and develop new knowledge on the subject theme. Laboratory work and field visits will be organised when relevant according to the student's learning needs relative to their chose MAsc/PhD research topic. Discussion sessions will occur on a weekly basis for the first half of the term in which course content will cover water quality concepts followed by key unit processes found in conventional drinking water treatment chains. During the second half of the term, students will be working independently on their mini-projects under the supervision and of the instructor with frequent progress and discussion meetings.

## ASSESSMENT:

Weight & Date(s) of Assessments:	Weight	Date
Mini-project	40 %	TBD
Exam 1	30 %	TBD
Exam 2	30 %	TBD

Two exams (online) will cover the contents of the assigned readings. These assessments will take place during the first half of the term.

The mini-project will be on a topic selected by the student. This may be a field-, laboratory or desk-based project linked to the course content. The mini-project shall be written up as a manuscript to be submitted to a relevant peer-reviewed journal. It is up to the student to select the format (e.g. short communication, mini-review, etc.) and publication venue. When laboratory-based mini-project is chosen, students must work within relevant health and safety policies. Negligence or persistent failure to comply with policies may result in laboratory access denial, possibly affecting the final mark of the mini-project. Late assignments will be marked, but (unless the late submission has been justified/authorised) pro rata assignment marks will have a half-life of 1 week (e.g. an assignment marked at 80 % submitted after one week will be worth 40 %).

## 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 or the Chair's Secretary to set up an appointment.

### 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....

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, (2017-2018) <http://web.uvic.ca/calendar2018-01/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: [web.uvic.ca/eqhr](http://web.uvic.ca/eqhr).

### Discrimination and Harassment Policy (GV0205)

<http://web.uvic.ca/calendar2018-01/general/policies.html>

### Faculty of Engineering, University of Victoria 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.

<http://www.uvic.ca/engineering/current/undergrad/index.php#section0-23>

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 for the UVic policy on academic integrity.

**Policy on Academic Integrity**

<http://web.uvic.ca/calendar2018-01/undergrad/info/regulations/academic-integrity.html>

**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 Resource Centre for Students with a Disability 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."