

# CVEN9884 ENVIRONMENTAL CHEMICAL AND MICROBIAL

## OBJECTIVES

To familiarise the student with the fundamentals of microbiology and water and wastewater chemistry as they may be encountered by Public Health, Waste Management and Environmental Engineers and hence enable a knowledgeable assessment of reports and data presented to them by specialists in these areas.

List of programme attributes:

- < An in-depth engagement with the relevant disciplinary knowledge in its inter-disciplinary context
- < Capacity for analytical and critical thinking and for creative problem solving
- < Ability to engage independent and reflective learning
- < Information literacy
- < Skills for collaborative and multi-disciplinary work
- < A respect for ethical practice and social responsibility
- < Skills for effective communication

## TEACHING STRATEGIES

### Private Study

- < Read suggested sections in the textbook and review lecture material
- < Do set problems and assignments
- < Reflect on class problems and workshops when doing assignments and preparing for the exam
- < Download materials from Moodle
- < Keep up with notices via Moodle and Teams
- < Keep up with notices via university email

### Lectures

## EXPECTED LEARNING OUTCOMES

To enable the student, by in-depth process understanding, in critically and independently assessing data related to aquatic chemistry and microbiology. Furthermore, to provide the student with practical tools for solving environmental problems.

*This course is designed to address the learning outcomes below and the corresponding Engineers Australia Stage 1 Competency Standards for Professional Engineers as shown. The full list of Stage 1 Competency Standards may be found in Appendix A.*

## COURSE PROGRAM

Week	Date	Lecture	Topic	Lecturer	Assessments Due
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## ASSESSMENT OVERVIEW

The assessment of this course will be the **3 assignments**, **4 quizzes** on Microbial Processes and an **online exam** on Chemical Processes. Students who perform poorly in the assignments and quizzes are recommended to discuss progress with the lecturer during the session. No student may pass a course until all assignments have been completed and returned to the School. An assignment will be considered completed if it is awarded a mark of 30% or more, i.e. significant effort must be demonstrated. The formal online exam scripts will not be returned to students. The Course Coordinator reserves the right to adjust the final scores by scaling if agreed by the Head of School.

Item	Weight	Issue date	Due date	Marks returned	Assessment criteria	Learning outcomes assessed
4 x Micro Quiz	20% (5% each)	every Tuesday (Week 1-4)	following Friday	following Monday	There will be no exam for Microbial Processes; instead, four online quizzes (available on Microsoft Teams) will evaluate the students' knowledge and understanding after each lecture.	PE1.1, PE1.2, PE1.3
Assignment 1	30%	Tue-15-Sep	Tue-13-Oct	Mon-26-Oct	For their major assignment in Microbial Processes, students will design an online poster (in Microsoft Sway) to explain what role microbial processes play in natural/engineered systems.	PE2.1, PE2.2, PE3.2, PE3.4
Chem Quiz	5%	Fri-06-Nov	Fri-06-Nov	Mon-10-Nov	This quiz will assess the students ability to construct a tableau to solve a aqueous equilibrium chemistry problem.	PE1.1, PE1.2
Assignment 2	10%	Tue-03-Nov	Mon-16-Nov	Mon-30-Nov	This assignment will assess the students ability to solve aqueous equilibrium chemistry problems. Some sub-questions will further test the student's conceptual understanding of equilibrium chemistry.	PE1.1, PE1.2, PE2.1, PE2.2, PE3.2, PE3.4

Assignment 3      10%

**PENALTIES**

Late work will be penalised at the rate of 10% per day after the due time and date have expired.

## DATES TO NOTE

Refer to MyUNSW for Important Dates available at:

<https://student.unsw.edu.au/dates>

## PLAGIARISM

Beware! An assignment that includes plagiarised material will receive a 0% Fail, and students who plagiarise may fail the course. Students who plagiarise are also liable to disciplinary action, including exclusion from enrolment.

Plagiarism is the use of another person's work or ideas as if they were your own. When it is necessary or desirable to use other people's material you should adequately acknowledge whose words or ideas they are and where you found them (giving the complete reference details, including page numbers). The Learning Centre provides further information on what constitutes Plagiarism at: [https://www.unsw.edu.au/learning-centre/plagiarism](#)

## ACADEMIC ADVICE

For information about:

< Plagiam at:

**Appendix A: Engineers Australia (EA) Competencies**

*Stage 1 Competencies for Professional Engineers*