ENEC13014 *Water Supply and Wastewater Technology*
Term 1 - 2018

Profile information current as at 30/04/2024 05:26 am

All details in this unit profile for ENEC13014 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview
In this unit you will be introduced to water and wastewater treatment, including water distribution systems and wastewater collection systems. The unit will cover characteristics of water and wastewater, different types of treatment processes and the design of different components of water and wastewater treatment plants.

Details
Career Level: *Undergraduate*
Unit Level: *Level 3*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
Prerequisites: ENEC12010 Hydraulics and Hydrology
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 1 - 2018

- Bundaberg
- Cairns
- Distance
- Gladstone
- Mackay
- Rockhampton

Attendance Requirements
All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website
This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Online Test**
Weighting: 30%
2. **Written Assessment**
Weighting: 20%
3. **Written Assessment**
Weighting: 50%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Student Feedback

Feedback
Positive comments on unit content and provided support

Recommendation
Continue with the broad format of the unit and weekly online and on-campus workshops.

Feedback from Student Feedback

Feedback
Information on Assessment tasks

Recommendation
Even though students appreciate learning associated with the assignments, more information on assignments was recommended. Assignment information sessions will be offered via zoom about two weeks prior to their due dates.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Characterise the quality parameters of potable water and wastewater
2. Formulate a preliminary design of water and wastewater treatment plants
3. Design water distribution and wastewater collection networks
4. Demonstrate a level of communication expected of professional engineers

The learning outcomes are linked to Engineers Australia Stage 1 Competencies and also discipline capabilities. You can find the mapping for this on the Engineering Undergraduate Course website.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level ◦ Introductory Level • Intermediate Level • Graduate Level ◦ Professional Level ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Written Assessment - 20%			•	•
2 - Written Assessment - 50%	•	•		•
3 - Online Test - 30%	•	•	•	

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Communication	•	•	•	•
2 - Problem Solving	•	•	•	•
3 - Critical Thinking	•	•	•	•
4 - Information Literacy	•	•	•	•
5 - Team Work				•
6 - Information Technology Competence	•	•	•	•
7 - Cross Cultural Competence	•	•	•	•
8 - Ethical practice	•	•	•	•
9 - Social Innovation				
10 - Aboriginal and Torres Strait Islander Cultures				

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 20%	•	•	•	•		•	•	•		
2 - Written Assessment - 50%	•	•	•	•		•	•	•		
3 - Online Test - 30%		•	•	•		•	•	•		

Textbooks and Resources

Textbooks

ENEC13014

Prescribed

Water-Resources Engineering
Edition: International Third (2013)
Authors: David A. Chin
PEARSON
Binding: Other

Additional Textbook Information
This textbook has also been used as a prescribed textbook for ENEC14017: Water Resources Engineering. Notes will be provided as a written resource for the chapters that are not covered in the textbook. Relevant Australian Standards and Guidelines will also be used.

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Raj Sharma Unit Coordinator
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Schedule

Week 1 - 05 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Water and Wastewater Technology Fundamentals of Flow in Closed Conduits	Chapter 2	

Week 2 - 12 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Water Quality		

Week 3 - 19 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Design of Water Distribution System: I	Chapter 3	

Week 4 - 26 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic

Design of Water Distribution System: II	Chapter 3	

Week 5 - 02 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
Water Processing: I		Online Test 1: Contents from Week 1 to Week 4 Test opens: 9:00 am Monday Test closes: 5:00 pm Friday

Vacation Week - 09 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 16 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
Water Processing: II		**Assignment 1: Design of Water-Distribution System** Due: Week 6 Monday (16 Apr 2018) 5:00 pm AEST

Week 7 - 23 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
Design of Sanitary Sewer: I	Chapter 6	

Week 8 - 30 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
Design of Sanitary Sewer: II	Chapter 6	

Week 9 - 07 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Design of Sanitary Sewer: III	Chapter 6	

Week 10 - 14 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Wastewater Processing: I		Online Test 2: Contents from Week 5 to Week 9 Test opens: 9:00 am Monday Test closes: 5:00 pm Friday

Week 11 - 21 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Wastewater Processing: II		

Week 12 - 28 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Revision		**Assignment 2: Design of Water/Wastewater Processing Plants and Sanitary Sewers** Due: Week 12 Monday (28 May 2018) 11:45 pm AEST

Review/Exam Week - 04 Jun 2018

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 11 Jun 2018

Module/Topic	Chapter	Events and Submissions/Topic

- 18 Jun 2018

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Online TEST

Assessment Type
Online Test

Task Description
This assessment task consists of two Tests, each carries 15% of the Total mark. The tests consist of different types of questions including numerical, short answer and multiple choice. There are 10-20 questions in each test.
Important Notes:
Each Test is set for 60 minutes. You have 60 minutes from when you start your attempt to submit your answers.

- If you start but leave a test and come back to it later, your 60 min time may have lapsed and you will be scored zero for that attempt.
- You can attempt the Test only once within the given time frame as specified in the Schedule. The test will be automatically closed after the end of the given time frame.
- The Tests cannot generally be deferred. However, **under exceptional circumstances**, if you have valid reasons to defer the test(s), please contact the Unit Coordinator with documents of proof before the due date. Requests are to be made before the test begins. Requests after the test starts will not be entertained.

Assessment Due Date

Tests opening and closing details are given on the schedule section.

Return Date to Students

After the end of the Tests.

Weighting
30%

Assessment Criteria
Full marks will be awarded for each correct answer. No partial marks will be allocated.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Characterise the quality parameters of potable water and wastewater
- Formulate a preliminary design of water and wastewater treatment plants
- Design water distribution and wastewater collection networks

Graduate Attributes

- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

2 Assignment 1: Design of Water-Distribution System

Assessment Type
Written Assessment

Task Description
You are required to design a water-distribution system for a given area. Information related to the project area such as topography and population is provided. You may need to collect relevant information from suppliers, councils and market survey as appropriate. Additional information on the assignment is available on the course website.

Assessment Due Date
Week 6 Monday (16 Apr 2018) 5:00 pm AEST

Return Date to Students
Week 8 Monday (30 Apr 2018)

Weighting
20%

Assessment Criteria
Assessment of the design report will be done based on

1. Valid and Verified assumptions [Max 20%; All values and statements should be properly referenced and supportable.]
2. Accuracy in calculations [Max 80%]
3. Appropriate and Professional level of Communication [Pass/Fail - All the design steps should be explained in full detail. You should get Pass from this criteria to get marks from the others.]

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Design water distribution and wastewater collection networks
- Demonstrate a level of communication expected of professional engineers

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

3 Assignment 2: Design of Water/Wastewater Processing Plants and Sanitary Sewers

Assessment Type
Written Assessment

Task Description
This assignment provides an opportunity for students to design different components of water infrastructure. This includes components of water and wastewater treatment plants and wastewater collection system. You will be designing the structures after collecting relevant information from suppliers, councils and market survey as appropriate. Additional information on the assignment is available on the course website.

Assessment Due Date
Week 12 Monday (28 May 2018) 11:45 pm AEST

Return Date to Students

Two weeks after the submission

Weighting
50%

Assessment Criteria
Assessment of the design report will be done based on

1. Valid and Verified assumptions [Max 20%; All values and statements should be properly referenced and supportable.]
2. Accuracy in calculations [Max 80%]
3. Appropriate and Professional level of Communication [Pass/Fail - All the design steps should be explained in full detail. You should get Pass from this criteria to get marks from the others.]

Referencing Style

- Harvard (author-date)

Submission
Online Group

Learning Outcomes Assessed

- Characterise the quality parameters of potable water and wastewater
- Formulate a preliminary design of water and wastewater treatment plants
- Demonstrate a level of communication expected of professional engineers

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem