ENEC20005 *Advanced Water Engineering*
Term 1 - 2022

Profile information current as at 05/05/2024 02:14 am

General Information

Overview

Advanced Water Engineering will introduce you to different components of the hydrologic cycle that are essential for designing complex water infrastructures. In this unit, you will discuss concepts of probability and uncertainty governing water resources projects. You will estimate design rainfall and losses, and peak flows and volumes for engineering design. You will also be introduced to the design of pipe networks for water supply and collection of wastewater and stormwater. You will also learn how to apply the concept of Water Sensitive Urban Design (WSUD). In completing these tasks, you must use appropriate technical language in written communication and work in teams to solve problems.

Details

Career Level: *Postgraduate*
Unit Level: *Level 9*
Credit Points: *12*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.25*

Pre-requisites or Co-requisites

There are no requisites for this unit.
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 - 2022

No offerings for ENEC20005

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 12-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 25 hours of study per week, making a total of 300 hours for the unit.

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

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

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 Self-reflection

Feedback
Provide extra support and check the teamwork regularly.

Recommendation
Team meetings will be conducted in alternate weeks to make sure the teams are progressing well with the project.

Unit Learning Outcomes

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

1. Formulate, plan, manage and complete projects individually or in teams considering stakeholder requirements and principles of sustainable development and communicate the outcomes professionally
2. Design different components of urban water distribution, wastewater collection and stormwater collection systems
3. Analyse a range of WSUD assets for a given urban setting
4. Assess the hydrology of a catchment and estimate design floods.

The Learning Outcomes for this unit are linked with the Engineers Australia Stage 1 Competency Standards for Professional Engineers in the areas of 1. Knowledge and Skill Base, 2. Engineering Application Ability and 3. Professional and Personal Attributes at the following levels:

Intermediate

2.1 Application of established engineering methods to complex engineering problem solving. (LO: 1I)

3.1 Ethical conduct and professional accountability. (LO: 1I)

3.2 Effective oral and written communication in professional and lay domains. (LO: 1I)

3.3 Creative, innovative and pro-active demeanour. (LO: 1I)

3.4 Professional use and management of information. (LO: 1I)

Advanced

1.1 Comprehensive, theory-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. (LO: 4A)

1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. (LO: 4A)

1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline. (LO: 2A 3A 5A)

1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline. (LO: 4A)

2.2 Fluent application of engineering techniques, tools and resources. (LO: 2A 3A 5A)

2.3 Application of systematic engineering synthesis and design processes. (LO: 2A 3A 5A)

2.4 Application of systematic approaches to the conduct and management of engineering projects. (LO: 1A 2A 3A 5A)

3.6 Effective team membership and team leadership. (LO: 1A 6A)

Note: LO refers to the Learning Outcome number(s) which link to the competency and the levels: N – Introductory, I – Intermediate and A - Advanced.

Refer to the Engineering Postgraduate Units Moodle site for further information on the Engineers Australia's Stage 1 Competency Standard for Professional Engineers and course level mapping information
https://moodle.cqu.edu.au/course/view.php?id=11382

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 - Project (applied) - 30%	●	●	●	
2 - Project (applied) - 30%	●			●
3 - In-class Test(s) - 40%		●	●	●

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Knowledge		○	○	○
2 - Communication	○	○	○	○
3 - Cognitive, technical and creative skills	○	○	○	
4 - Research	○	○	○	○
5 - Self-management	○			
6 - Ethical and Professional Responsibility	○	○	○	
7 - Leadership	○			
8 - Aboriginal and Torres Strait Islander Cultures				

Textbooks and Resources

Textbooks

Information for Textbooks is not yet available.
The textbooks have not yet been finalised.

IT Resources

You will need access to the following IT resources:

Referencing Style

Information for Referencing Style has not been released yet.
This unit profile has not yet been finalised.

Teaching Contacts

Information for Teaching Contacts has not been released yet.
This unit profile has not yet been finalised.

Assessment Tasks

Information for Assessment Tasks has not been released yet.
This unit profile has not yet been finalised.

Academic Integrity Statement

Information for Academic Integrity Statement has not been released yet.
This unit profile has not yet been finalised.