ENEG12008 *Appropriate Technology for Humanitarian Projects*
Term 2 - 2023

Profile information current as at 14/12/2025 05:58 pm

General Information

Overview

In this unit, you will expand on your knowledge of humanitarian engineering by assessing and evaluating how using appropriate technologies can influence the success of humanitarian projects. You will work as an individual to research the real-world application of technologies and determine their effectiveness in a variety of cultural settings by creating an evaluation framework. In subsequent work as a team, you will further assess and review a complex humanitarian project regarding the adequacy of the adopted technologies. Following this analysis, you shall make recommendations for possible improvements. In addition to enhancing your technical knowledge related to the appropriate adoption of technologies, you should further develop skills in teamwork, creativity, cultural awareness, communication, problem-solving and critical thinking.

Details

Career Level: *Undergraduate*
Unit Level: *Level 2*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Pre-requisite: SOCL11059 Introducing Social Change OR MGMT11167 Foundations of Social Innovation
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 2 - 2023

- Bundaberg
- Cairns
- Gladstone
- Mackay
- Online
- 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. **Written Assessment**
Weighting: 25%
2. **Written Assessment**
Weighting: 25%
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
Improve clarity of unit requirements

Recommendation
Ensure time is taken in the first lecture to outline unit requirements.

Feedback from Student Feedback

Feedback
Appreciation of project based work

Recommendation
Continue with assessments based on research into appropriate technology.

Unit Learning Outcomes

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

1. Identify applications of technologies in humanitarian projects through independent research
2. Evaluate technologies for appropriate applications in humanitarian contexts
3. Critique a humanitarian engineering project on the effective use of technology for the cultural context
4. Generate solutions with appropriate technology for a humanitarian project using the human-centred design philosophy
5. Demonstrate technical knowledge in at least one engineering discipline area
6. Apply effective communication, creativity, cultural awareness, time management and collaborative skills to work and learn individually and in a team.

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 1.1 Comprehensive, theory-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. (LO: 2I 3I 4I 5I) 1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. (LO: 2I 3I 4I 5I) 2.1 Application of established engineering methods to complex engineering problem-solving. (LO: 1N 2I 3I 4I 5I 6N) 2.2 Fluent application of engineering techniques, tools and resources. (LO: 1N 2I 3I 4I 5I 6N) 2.4 Application of systematic approaches to the conduct and management of engineering projects. (LO: 1N 2N 3N 4I 5I 6N) 3.1 Ethical conduct and professional accountability. (LO: 1N 2I 3I 4I 5I 6N)

Advanced 1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline. (LO: 1I 2A 3A 4A 5A 6N) 1.4 Discernment of knowledge development and research directions within the engineering discipline. (LO: 1A 2A 3A 4A 5A 6N) 1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline. (LO: 2I 3A 4A 5I 6N) 1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline. (LO: 1N 2N 3I 4A 5I 6I) 2.3 Application of systematic engineering synthesis and design processes. (LO: 1N 2I 3I 4A 5I 6N) 3.2 Effective oral and written communication in professional and lay domains. (LO: 1I 2I 3I 4A 5I 6A) 3.3 Creative, innovative and pro-active demeanour. (LO: 1I 2I 3I 4A 5I 6N) 3.4 Professional use and management of information. (LO: 1A 2A 3A 4A 5N 6N) 3.5 Orderly management of self, and professional conduct. (LO: 1I 2I 3I 4I 5I 6A) 3.6 Effective team membership and team leadership. (LO: 1I 2I 3I 4A 5N 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 Undergraduate Course Moodle site for further information on the Engineers Australia's Stage 1 Competency Standard for Professional Engineers and course level mapping informationhttps://moodle.cqu.edu.au/course/view.php?id=1511

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	5	6
1 - Written Assessment - 25%	•				•	
2 - Written Assessment - 25%		•				•
3 - Written Assessment - 50%			•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
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						

Textbooks and Resources

Textbooks

There are no required textbooks.

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

Claire Skipper Unit Coordinator
c.skipper@cqu.edu.au

Schedule

Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Humanitarian Engineering • *Introducing humanitarian engineering and how it is applied as an engineering discipline.* • *Humanitarian Engineering as an outlet for creativity and societal betterment*		Commence assessment 1

Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
What is appropriate technology • *What does appropriate technology mean, what is it, how is it defined.* • *Introducing the concepts of designing for purpose which will be covered in more detail in subsequent weeks.*		

Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Appropriate technology in a humanitarian context • *Developing the understanding of humanitarian engineering and how appropriate technology is utilized as part of a specific humanitarian response.*		

Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Examples of appropriate technology used for humanitarian engineering projects • *Case studies to demonstrate the use of appropriate technology.* • *Consideration that there is a need for appropriate technology in developed and developing nations.*		Commence Assessment 2 **Research and critique the application of technologies in humanitarian projects** Due: Week 4 Tuesday (1 Aug 2023) 11:45 pm AEST

Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Human Centered Design (HCD) Process – Empathise • *Introduction to tthe HCD process.* • *Why empathizing is critical to the success of apporopriate technology* • *The importance of stakeholder engagement.*		

Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Take this time to evaluate the information so far and catch up on any learning and assignments.		

Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Human Centered Design (HCD) Process – Define • *How to interpret data from the empathizing stage* • *How to effectively define your problem.* • *How to define the parameters of a successful design.* • *Utilising frameworks to assist in evaluation.*		

Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Human Centered Design (HCD) Process – Developing Ideas • *How to sucessfully research and appraise new and existing technologies suitable for your chosen application.* • *The potential to implement and/or modify existing technlogies to suit your chosen application.* • *Applying a circular process of refining your problem statement to align with your expanding knowledge and experience*	Textbok: Chapter 10 - Engineering Design	Commence asessment 3 **Recognize and implement methods of evaluating the successful application of appropriate technologies** Due: Week 7 Tuesday (29 Aug 2023) 11:45 pm AEST

Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Human Centered Design (HCD) Process – Evaluating Ideas • *Practical processes for evaluation e.g. prototyping* • *Implementing frameworks as a means of quantitively evaluating ideas*	Textbook: Chapter 11 – Evaluating Ideas Textbook: Chapter 12 – Engineering Decision making	

Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Implementing Appropriate technology • *Working with stakeholders to enable the successful uptake of the technology* • *Understanding the importance of continuous improvement* • *How might your solution be scaled up to be available in volume.*		

Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Organisations promoting appropriate technology • *How can you get involved.* • *An introduction to Engineers without Borders, the Centre of Appropriate Technology and more.*		

Week 11 - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Social Innovation @ CQU • *Opportunites to get involved within the university*		

Week 12 - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
A recap and where to from here.		

Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
		Critique the technology adopted in a humanitarian project of your choice by applying an evaluation framework Due: Review/Exam Week Tuesday (10 Oct 2023) 11:45 pm AEST

Exam Week - 16 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Unit Co-ordinator: Claire Skipper
Contact Information:
Phone: 0467 975 835
Email: c.skipper@cqu.edu.au

Assessment Tasks

1 Research and critique the application of technologies in humanitarian projects

Assessment Type
Written Assessment

Task Description
Demonstrate an understanding of humanitarian engineering and appropriate technologies. Identify various existing, new and emerging technologies. Critique their suitability to be used in an appropriate manner.

Assessment Due Date
Week 4 Tuesday (1 Aug 2023) 11:45 pm AEST

Return Date to Students
Week 6 Tuesday (22 Aug 2023)

Weighting
25%

Minimum mark or grade
25%

Assessment Criteria
A Marking Rubric is provided on Moodle that includes indicators of attainment at the 'Sound', 'Good' and 'Excellent' level for each component of the assignment.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Submit as a single PDF through Moodle

Learning Outcomes Assessed

- Identify applications of technologies in humanitarian projects through independent research
- Demonstrate technical knowledge in at least one engineering discipline area

2 Recognize and implement methods of evaluating the successful application of appropriate technologies

Assessment Type
Written Assessment

Task Description
Demonstrate an understanding of human centred design and various frameworks such as triple bottom line(TBL) and SWOT. Individually integrate TBL and SWOT ideologies to create a comprehensive evaluation framework to assess the application of appropriate technologies.

Assessment Due Date
Week 7 Tuesday (29 Aug 2023) 11:45 pm AEST

Return Date to Students
Week 9 Tuesday (12 Sept 2023)

Weighting
25%

Minimum mark or grade
25%

Assessment Criteria
A Marking Rubric is provided on Moodle that includes indicators of attainment at the 'Sound', 'Good' and 'Excellent' level for each component of the assignment.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Submit as a single PDF through Moodle

Learning Outcomes Assessed

- Evaluate technologies for appropriate applications in humanitarian contexts
- Apply effective communication, creativity, cultural awareness, time management and collaborative skills to work and learn individually and in a team.

3 Critique the technology adopted in a humanitarian project of your choice by applying an evaluation framework

Assessment Type
Written Assessment

Task Description
Working as a team, identify a humanitarian project and research how appropriate technologies were utilized.
Develop a framework using knowledge acquired in previous assessments and apply this evaluation framework to the technlogies adopted in the context of your chosen humanitarian project.

Assessment Due Date
Review/Exam Week Tuesday (10 Oct 2023) 11:45 pm AEST

Return Date to Students
Exam Week Tuesday (17 Oct 2023)

Weighting
50%

Minimum mark or grade
25%

Assessment Criteria
A Marking Rubric is provided on Moodle that includes indicators of attainment at the ‘Sound’, ‘Good’ and ‘Excellent’ level for each component of the assignment.

Referencing Style

- Harvard (author-date)

Submission
Online Group

Submission Instructions
One team member to submit a single PDF to Moodle.

Learning Outcomes Assessed

- Critique a humanitarian engineering project on the effective use of technology for the cultural context
- Generate solutions with appropriate technology for a humanitarian project using the human-centred design philosophy
- Demonstrate technical knowledge in at least one engineering discipline area
- Apply effective communication, creativity, cultural awareness, time management and collaborative skills to work and learn individually and in a team.

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