ENEG20003 *Sustainability Studio*
Term 2 - 2017

Profile information current as at 04/05/2024 12:40 pm

General Information

Overview
In this unit, you will engage with a complex, real world problem that crosses disciplinary boundaries. You will use a systems engineering approach to explore stakeholder needs and to write a set of requirements. In approaching the design task, you will need to balance technical, economic, social and environmental issues and constraints. At the heart of such problem solving is teamwork, communication, knowledge management and evaluation using sustainability principles.

Details
Career Level: *Postgraduate*
Unit Level: *Level 8*
Credit Points: *12*
Student Contribution Band: *2*
Fraction of Full-Time Student Load: *0.25*

Pre-requisites or Co-requisites
At least 48 uc of the Master of Engineering complete
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 - 2017

- Distance
- Melbourne
- Perth
- 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 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

1. **Portfolio**
Weighting: 100%

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.

Unit Learning Outcomes

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

1. Show evidence of grappling with complex issues through stakeholder engagement
2. Develop a set of stakeholder requirements
3. Apply a systematic design process (systems engineering) to develop solutions to an issue
4. Demonstrate self-awareness of thinking processes and values, including socio-ecological thinking and uncertainty
5. Develop and pitch a change proposal
6. Reflect on the contribution of this project to professional development

The learning outcomes are linked to Engineers Australia Stage 1 Competencies.

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 - Portfolio - 100%	•	•	•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
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						

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
1 - Portfolio - 100%	◦	◦	◦	◦		◦		

Textbooks and Resources

Textbooks

ENEG20003

Prescribed

Sustainability Principles and Practice
Edition: First (2014)
Authors: Margaret Robertson
Routledge (Taylor and Francis Group)
Abingdon , Oxon , UK
ISBN: 978-0-415-84018-7
Binding: Paperback

Additional Textbook Information

eBook is available from the publisher (ISBN: 978-0-203-76874-7)

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

Md Nurun Nabi Unit Coordinator
m.nabi@cqu.edu.au

Schedule

Week 1 - 10 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
General overview of the unit What is sustainability? Challenges and responses Sustainability as a discipline Is Earth warming? How temperature records are compiled Modern climate change and greenhouse gases The human factor Projecting into the future	1 and 6 Robertson Textbook	Students will think on different sustainability projects. Team will be formed and each team will contain 4/5 students. Team will understand the project problems, identify research question, prepare project plan, set aims, objectives and develop methodology.

Week 2 - 17 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic

Sustainability at work Sustainability initiatives Measurement and reporting Air pollution Soil and land pollution Water pollution Pollution remediation and prevention	5 and 9 Robertson Textbook	You will think about how to write a reflective paper (RP). Your first reflective paper (RP1) will be on a topic of an issue of sustainability, one with which you are familiar. Recognise the problem and suggest a probable solution. In the RP1, provide a list of the stakeholders, their requirements and roles. The RP1 links to the learning outcomes (LO)1 and LO2.

Week 3 - 24 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Uneven distribution of water Depletion of nonrenewable aquifers Threats to human and ecosystem health Consumption Effects of climate change Water conservation Wastewater treatment Storm water	7 Robertson Textbook	Team project presentation. Team will present their project proposals with clear objectives, scopes, methodology, expected outcomes and Gantt chart. **Date of presentation: First Workshop day of Week 3.** Each presentation is to be 15 minutes followed by 5 minutes for questions and changeover. Presentation schedule will be provided. **Individual RP1:** **Due: Friday (Week 3, 28 July 2017) by 11.45 PM (AEST).**

Week 4 - 31 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Ecosystems and habitat-introduction Populations and extinction Drivers of ecosystem change Conservation and restoration Conservation Restoration ecology Living together-reconciliation ecology	8 Robertson Textbook	Team work on their project proposal based on the feedback of their presentation. **Each Team will submit a project proposal.** **Due: Friday (Week 4, 4 Aug 2017) by 11.45 PM (AEST).**

Week 5 - 07 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Why study living systems? Energy and matter The four spheres The biosphere What is life? Gaia: earth systems science Systems	3 Robertson Textbook	Think about writing a reflective paper (RP2) that includes a solution of a sustainable issue by applying systematic design processes utilising engineering tools and techniques. In the writing, include self-awareness of thinking processes and values pertaining to the socio-ecological thinking and uncertainty. You will submit a RP2 that links to the LO3 and LO4.

Vacation Week - 14 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic

Vacation week	Vacation week	Vacation week
Week 6 - 21 Aug 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Traditional fossil fuels Alternative/sustainable/renewable energy: solar, solar photovoltaic panels, wave and tidal, hydro, wind, geothermal, biomass, biogas Alternative energy for transportation Energy efficiency Measuring energy efficiency Improving energy efficiency performance	10 Robertson Textbook	Team continue to work on their project. **Individual RP2:** **Due: Friday (Week 6, 25 Aug 2017) by 11.45 PM (AEST).**
Week 7 - 28 Aug 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
What is a green building? The process of green building design Building envelope Lighting Passive heating and cooling Heating Cooling Ventilation Construction Sustainable sites	11 Robertson Textbook	Team work on their project issues and challenges. Try to find out more than one solution by designing, modelling etc and pick the best one. This part of your project work also links to the LO3.
Week 8 - 04 Sep 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Introduction to livable cities Sprawl Land use planning Urban planning Building community Transportation Cities and climate change	12 Robertson Textbook	Team work on their project draft reports
Week 9 - 11 Sep 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Design for the environment Industrial ecology Process design Product alternatives Product design Shipping and packaging ISO 14000 standards Certification and labels Eco-labels	14 Robertson Textbook	You will now think to write another reflective paper (RP3) that addresses a changed proposal for the solution of the issue of sustainability. In the RP3, you also need to mention how your project contributes to self and professional development. The RP3 links to the LO5 and LO6. **Team project draft report submission.** **Due: Friday (Week 9, 15 Sep 2017) by 11.45 PM (AEST).**
Week 10 - 18 Sep 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Farming methods Human health issues Planetary health issues Feeding ourselves Finding space for food in the city Food on public land Healthy soil	13 Robertson Textbook	**Individual RP3:** **Due: Friday (Week 10, 22 Sep 2017) by 11.45 PM (AEST).** Team will wrap up their projects.

Week 11 - 25 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Waste management Landfills Incineration Recycling Construction and demolition waste Industrial waste Zero waste	15 Robertson Textbook	**Team final project report submission.** **Due: Friday (Week 11, 29 Sep 2017) by 11.45 PM (AEST).**

Week 12 - 02 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
Review class		Team final project presentation. Team will finally present their projects with project topics, objectives, scopes, methodology, results, discussion and conclusion. **Final presentation Due: First Workshop day of Week 12.** Each presentation is to be 15 minutes followed by 5 minutes for questions and changeover. Presentation schedule will be provided. **Portfolio** Due: Week 12 Friday (6 Oct 2017) 11:45 pm AEST

Review/Exam Week - 09 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
Viva Voce: The date and time will be announced later		

Exam Week - 16 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Portfolio

Assessment Type
Portfolio

Task Description
Assessment of this unit is based on submission of a portfolio that contains evidence of all (i.e. individual reflective paper, and team project work and presentation) works that the student has completed throughout the term. The portfolio should demonstrate how the learning outcomes have been met and to what level, and be presented in the form of a technical report that includes a table of contents section.

Compulsory items

The **team project** must be handed in and considered acceptable by the unit coordinator for the team members to be eligible to be graded at the end of the term. Project requirements completed satisfactorily and submitted after the due date may be accepted but the final grade may be affected. In addition to the project report, each team must do a **presentation** and each member must be present to answer the **questions** following the presentation. Omission of any of the following items from the **portfolio** may affect the **Final Grade**:

1. Individual grade nomination
2. Individual reflective papers
3. Self and peer assessment (SPA)
4. Work book

Individual Viva Voce

Following the submission of the Portfolio, each student may need to attend a viva voce where they will be expected to defend the claims made in their Portfolio against each learning outcome. An unsatisfactory performance in the viva voce may affect the **Final Grade**.

Individual grade nomination

The individual grade nomination is the grade the student considers should be awarded based on the Assessment Criteria. This must be clearly corroborated with supporting evidence. Students will need to demonstrate how they have met **each of the learning outcomes** for the unit by referring to evidence in their portfolio.

Assessment Due Date

Week 12 Friday (6 Oct 2017) 11:45 pm AEST
Online

Return Date to Students

Within 2 weeks

Weighting

100%

Minimum mark or grade

Students must demonstrate an acceptable achievement of each of the Learning Outcomes to be eligible for a passing grade in this unit

Assessment Criteria

You must provide evidence of your achievement of each of the Learning Outcomes.
There is an Assessment Criteria sheet for this unit available on the unit website. The Assessment Criteria sheet gives guidance regarding the type of evidence required for each level of achievement. It is important that you review the Criteria sheet at the beginning of the term so you are familiar with the evidence you need to collect throughout the term. There are minimum requirements for the Portfolio and you must provide evidence of the minimum requirements in order to be eligible for a passing grade for this unit.

Referencing Style

- Harvard (author-date)

Submission

Online

Learning Outcomes Assessed

- Show evidence of grappling with complex issues through stakeholder engagement
- Develop a set of stakeholder requirements
- Apply a systematic design process (systems engineering) to develop solutions to an issue
- Demonstrate self-awareness of thinking processes and values, including socio-ecological thinking and uncertainty
- Develop and pitch a change proposal
- Reflect on the contribution of this project to professional development

Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Ethical and Professional Responsibility

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