EVST13015 *Mining, Urban & Industrial Lands Rehabilitation*
Term 2 - 2023

Profile information current as at 30/04/2024 04:08 am

General Information

Overview
This unit will cover essential knowledge of natural and impacted (mining, urban and industrial) landscape features and their management. You will gain a theoretical and practical understanding of landforms, biogeography, and the effects of natural and man-made impacts on the sustainability of local ecosystems. You will also learn how erosion control, vegetation surveys, modern techniques of rehabilitation, productive use of degraded land and rehabilitation success criteria are used to return disturbed landscapes into sustainable or productive ecosystems. You will gain practical experience through field trips to disturbed and rehabilitated sites. The emphasis will be on Central Queensland sites with links to broader Australian landscapes.

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
Students must have completed 72 units of credit.
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

- Mixed Mode

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).

Residential Schools
This unit has a Compulsory Residential School for distance mode students and the details are:
Click here to see your Residential School Timetable.

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. **Practical and Written Assessment**
Weighting: 30%
2. **Written Assessment**
Weighting: 20%
3. **Online Test**
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 Unit and Teaching Evaluation comments; email; in-person; personal reflection.

Feedback

The lecture content was interesting and useful but some of it was slightly dated. The sound and picture clarity of lecture videos should be reviewed, and slides should be updated for currency.

Recommendation

The quality of the current lecture materials should be reviewed/updated by the unit coordinator in 2023. Affected videos should be re-recorded prior to the next offering.

Feedback from Student Unit and Teaching Evaluation comments; email; in-person; personal reflection.

Feedback

The residential school was very informative and beneficial to the unit.

Recommendation

A similar format of field-based activities, site tours and talks should be implemented for the 2023 offering.

Unit Learning Outcomes

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

1. Describe key features of the biogeographic landscape
2. Discuss the impacts of mining, urbanisation, industrial development and tree clearing activities on the sustainability of Australian landscapes
3. Conduct land and vegetation surveys, simulate erosion events and describe disturbed land rehabilitation techniques
4. Analyse the techniques used in the rehabilitation of degraded Australian landscapes
5. Design a protocol for rehabilitation and/or sustainable management of a disturbed landscape
6. Assess the criteria used to determine cost effectiveness and success of rehabilitation processes.

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 - 20%	•				•	
2 - Practical and Written Assessment - 30%	•	•	•	•	•	•
3 - Online Test - 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						

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 - Practical and Written Assessment - 30%		•			•	•	•	•		
3 - Online Test - 50%	•	•	•	•						

Textbooks and Resources

Textbooks

EVST13015

Prescribed

Restoring Disturbed Landscapes Putting Principles into Practice
(2011)
Authors: Tongway, D & Ludwig, J
Island Press
Washington DC , Washington , USA
ISBN: 9781597265812
Binding: Paperback

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- GIS - download free software
- RUSLE (Universal Soil Loss Equation) software to be downloaded onto Uni computers.
- Microsft Office (Word, Excel, PowerPoint) or similar software such as Open Office

Referencing Style

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

Teaching Contacts

Emily Bryson Unit Coordinator
e.bryson@cqu.edu.au

Schedule

Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Landscape ecology, biogeography and restoration approaches. Tools to assess vegetation and ecosystem status. Indicators of ecosystem functions.	Tongway & Ludwig, Chapters 13 and 16 Online Readings	

Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Geology, soils and impacts of disturbance on soil systems. Tools to assess vegetation and ecosystem status. Indicators of ecosystem functions (except erosion).	Tongway & Ludwig, Chapter 14 Readings online	

Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
The soil-water interface: soil loss and planning to reduce erosion. Landform design and erosion control, and tools to assess erosion.	Tongway & Ludwig, Chapter 15 Online readings	

Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Restoration of mine sites - with a particular focus on open-cut mining.	Tongway & Ludwig, Chapters 4 and 8	**Assessment Task 1 - Activity 1 - Draft Report and protocol for conducting LFA on a disturbed site.** Due: Week 4 (Monday 31 July 2023) 11:45 pm, AEST. Conduct Assessment Task 1 - Activity 2 - LFA (during Residential School field trip).

Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Restoration of mine sites - rehabilitation of waste-rock dumps and tailings management.	Tongway & Ludwig, Chapters 6 and 7	

Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Restoring damaged range lands, with a particular focus on range lands that are encroached by an overabundance of woody shrubs and trees.	Tongway & Ludwig, Chapters 5 and 9	**Assessment Task 1 - Evaluation of a Restored Landscape - Research Report** Due: Week 6 Friday (25 Aug 2023) 11:45 pm AEST

Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Restoration of farmland to enhance biodiversity and productivity. Restoration of former farmlands and forests in the peri-urban development zone.	Tongway & Ludwig, Chapters 10 and 11	

Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Restoration of road verges after road construction. Restoration of managed native vegetation transition zones.	Tongway & Ludwig, Chapter 12 Readings online (Spooner and Lunt)	

Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Restoration of waste management facilities, refuse dumps and other sites requiring capping, burial or removal.	Online readings	

Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Criteria used in determining cost effectiveness and success of rehabilitation - budgets, scoping, planning, monitoring and evaluation when working on a restoration project.	Online readings	**Assessment Task 2 - Landscape Impact Assessment - Discussion Paper** Due: Week 10 Friday (22 Sept 2023) 11:45 pm AEST

Week 11 - 25 Sep 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
GIS and mapping in integrated landscape assessment and planning.	Online readings	
Week 12 - 02 Oct 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Statistical analysis of plant and landscape parameters. Summary and conclusions.	Online readings	Online Test due Friday. Test will open at 9am AEST and close in 24h. **Assessment Task 3 - Open book online written test** Due: Week 12 Friday (6 Oct 2023) 11:45 pm AEST
Review/Exam Week - 09 Oct 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Exam Week - 16 Oct 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Assessment Tasks

1 Assessment Task 1 - Evaluation of a Restored Landscape - Research Report

Assessment Type
Practical and Written Assessment

Task Description
Overview:
Landscape restoration involves several stages, such as planning, execution (on-site restoration), and evaluation of restoration success. In Assessment Task 1, you will gain experience in evaluating the success of a restored landscape. You will produce a research report that is informed by a review of recent literature and contains the methods, results, discussion, and conclusions of a Landscape Function Analysis that you will conduct using data that you will collect from the field.
Assessment Task 1 consists of three activities that build on each other and directly relate to practical components of the compulsory Residential School. The Residential School will include visit(s) to restored, rehabilitated or undisturbed land site(s). Summaries of the Assessment 1 activities are given below. Full detail is given in the Assessment tile and pages within the EVST13015 Moodle site.
Activity 1 – Planning and report drafting:

- Collect information (from scientific literature, the prescribed textbook, and other unit learning resources) about various approaches used in restoring disturbed sites, particularly in evaluating the success of such restoration efforts. Emphasis should be on Landscape Function Analysis (LFA) and case studies where LFA has been applied to assess the success of rehabilitation.
- Review the collected literature, read about principles and procedures of LFA, and locate suitable templates for LFA data collection.
- Prepare a field protocol that can be used during the Residential School for collecting field data for LFA.
- Write-up the literature review and planning to-date as a Draft Report.
- When preparing the Draft Report (approx. 1500 words) consider the expected layout of the Final Report (Activity 3). The draft report should include introduction, materials and methods (the protocol), and the review of literature. It should list any templates you will use in data collection.
- The draft report (especially the draft protocol) must be submitted prior to the residential school. i.e., by Monday Week 4, 31 July 2023 11.45 PM.
- Lecturers will review the draft report and return any comments on or before Day 1 of the Residential School.
- The lecturer-reviewed LFA field protocols are to be used when executing Activity 2.

Activity 2 – Data collection, Landscape Function Analysis:

- On Day 1 of the Residential School, note the lecturer’s comments on the Draft Reports.
- Discuss the LFA protocol with group members and get ready to collect the data during the site visit(s).

- Visit restored/rehabilitated and undisturbed field site(s) during the residential school.
- Collect LFA data using the protocols and templates identified during Activity 1 (use the lecturer-amended Draft Report).
- Collect the data from the field site as a group activity.
- Inspect and begin to analyse the collected LFA data with guidance from teaching staff and the provided unit learning resources.

Activity 3 - Results interpretation and preparation of Final Report:

- After the residential school, carry out further review of literature including via database searches.
- Further analyse and interpret the LFA data. Write-up all results (independently), in the form of a Final Report.
- When writing the final report consider the assessment criteria and the targeted discussion points provided on the Assessment Task 1 pages in Moodle.
- The format of the Final Report should include title, author details, affiliation, abstract, key words, contents page, materials and methods, results, discussion, conclusions, acknowledgments, references, and appendices (approx. 3000 words excluding tables, photos, and figures).
- Submit the Final Report by Friday, 8 September 2023 11.45 PM.

For the full details on Assessment Task 1 see the Assessment tile and pages within the EVST13015 Moodle site.

Assessment Due Date
Week 6 Friday (25 Aug 2023) 11:45 pm AEST

Return Date to Students
Week 8 Friday (8 Sept 2023)

Weighting
30%

Minimum mark or grade
50%

Assessment Criteria

1. Planning of restoration evaluation task - including level of effort and standard of completion of Activity 1 by the draft report due date (20%).
2. Information literacy skills – including evidence of appropriate database searches, accurate review of literature from a broad range of credible sources, and correct referencing style, including in-text citations (20%).
3. Data analysis and presentation – including how well the data were collected, processed, and presented (in tables and graphs), using appropriate software packages (20%).
4. Communication skills – including use of an appropriate academic writing style, presenting the work as per the specified report layout, and providing an accurate and succinct interpretation of results (20%).
5. Critical thinking skills – including evaluation of findings, critique of the restoration work and responses to the targeted discussion questions (20%).

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You should upload a .docx file via the Moodle site.

Learning Outcomes Assessed

- Describe key features of the biogeographic landscape
- Discuss the impacts of mining, urbanisation, industrial development and tree clearing activities on the sustainability of Australian landscapes
- Conduct land and vegetation surveys, simulate erosion events and describe disturbed land rehabilitation techniques
- Analyse the techniques used in the rehabilitation of degraded Australian landscapes
- Design a protocol for rehabilitation and/or sustainable management of a disturbed landscape
- Assess the criteria used to determine cost effectiveness and success of rehabilitation processes.

Graduate Attributes

- Problem Solving

- Team Work
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

2 Assessment Task 2 - Landscape Impact Assessment - Discussion Paper

Assessment Type
Written Assessment

Task Description
For Assessment Task 2 – You are required to prepare a discussion paper (approx. 2500 words) that identifies and assesses actual or potential impacts of commercial activities on landscapes in the city/shire/region where you normally live (within 100 km radius). Examples of commercial activities include forestry, quarrying, land filling, mining, smelting, dredging, grazing, power generation, aquaculture, tourism, intensive horticulture, development of new housing estates and construction of transportation infrastructure. Choose any FOUR activities occurring in your local area, to research for this Landscape Impact Assessment Task.
The goal of this written assessment is for you to demonstrate your understanding of the observed or potential environmental impacts of the selected activities and the possible solutions to those impacts.
You may use Google Earth/Queensland Globe maps, on-line information, news articles, company reports, or (if possible) first-hand visits and photos, to describe the impacts of your selected commercial activities on local landscapes. You will then explain the way those impacts/disturbances are being managed at present, with some indication of their effectiveness.
Finally, you will research suitable rehabilitation/remediation plans (historic, current, and best practice) to suggest possible improvements to minimise or avoid the identified impacts and/or to find solutions for rehabilitating the impacted sites.
Journal articles, technical scientific reports, environmental consultancy reports, and other credible sources of information should be used to support your descriptions and explanations. Natural Resource Management groups, as well as local and state government environment departments are appropriate contact points to become familiar with land management and rehabilitation practices, policies, and procedures.
For the full details on Assessment Task 2, see the Assessment tile and pages within the EVST13015 Moodle site.

Assessment Due Date
Week 10 Friday (22 Sept 2023) 11:45 pm AEST

Return Date to Students
Week 12 Friday (6 Oct 2023)

Weighting
20%

Minimum mark or grade
50%

Assessment Criteria

1. Description of your studied area, identification of appropriate sources of impacts, provision of photos/ map images and description of the impacts (50%).
2. Information literacy skills - correct and appropriate referencing, and evidence that you have referred to a minimum of FIVE credible sources of information, such as journal articles (10%).
3. Communication skills - clear and succinct style, within the word count, use of appropriate formatting skills (20%).
4. Critical thinking skills - consideration of several possible scenarios that might mitigate the impacts, and discussion of positive and negative aspects of each scenario (20%).

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You should upload a .docx file via the Moodle site.

Learning Outcomes Assessed

- Describe key features of the biogeographic landscape
- Design a protocol for rehabilitation and/or sustainable management of a disturbed landscape

Graduate Attributes

- Communication
- Problem Solving
- Cross Cultural Competence

3 Assessment Task 3 - Open book online written test

Assessment Type
Online Test

Task Description
Assessment Task 3 is an Open Book, Online Written Test.
The test is timed. The maximum time to complete the test is 3 hours (180 minutes).
The test will open for a 24-hour period from 9:00 am (AEST) Friday 6 Oct. Test time starts when you open the test.
The Open Book, Online Written Test has been designed to assess your understanding of concepts covered throughout the term.
Online typed written answers to short answer and long answer questions will be required. Answers must be of your own work, and they will be checked by 'Turnitin'. Any potential collusion will result in a breach of academic integrity.
Further detail on Assessment Task 3 will be provided in the Assessment tile and pages within the EVST13015 Moodle Site.

Assessment Due Date
Week 12 Friday (6 Oct 2023) 11:45 pm AEST

Return Date to Students

The test marks will be returned within 7 days of the date of the test.

Weighting
50%

Minimum mark or grade
50%

Assessment Criteria
The 3-hour Online Open Book Test will be marked out of 180 marks.
The maximum marks available for each question will be clearly indicated in the online test.
The number of marks allocated for a question will give an indication of the time (number of minutes) to spend on that question.
Marks will be awarded in accordance with the level of understanding demonstrated, the level of detail provided, and the appropriateness of the answer to the question.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Please use the Moodle site to answer online test questions

Learning Outcomes Assessed

- Describe key features of the biogeographic landscape
- Discuss the impacts of mining, urbanisation, industrial development and tree clearing activities on the sustainability of Australian landscapes
- Conduct land and vegetation surveys, simulate erosion events and describe disturbed land rehabilitation techniques
- Analyse the techniques used in the rehabilitation of degraded Australian landscapes
- Design a protocol for rehabilitation and/or sustainable management of a disturbed landscape
- Assess the criteria used to determine cost effectiveness and success of rehabilitation processes.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

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