



GEOG19021 Geographic Information Systems

Term 1 - 2021

Profile information current as at 11/04/2024 05:25 am

All details in this unit profile for GEOG19021 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

Geographic Information Systems (GIS) power decision making for a massive raft of Earth and human-system interactions in research, government and industry – far beyond the cartographic public face that is Google Maps. You will gain introductory practical skill in making electronic maps and analysing geographical data. You will explore key mapping concepts that underpin GIS, as well as practice some of the key map communication standards that are as important today as they were for Gerardus Mercator in the 16th century.

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

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 - 2021

- Online

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. **Practical Assessment**

Weighting: 20%

2. **Practical Assessment**

Weighting: 40%

3. **Practical Assessment**

Weighting: 40%

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 satisfaction survey.

Feedback

Student satisfaction survey response indicate the Moodle site and learning materials are useful (even enjoyable) to acquiring GIS skills.

Recommendation

In the CQURenew redesign of the unit retain the general current learning design.

Feedback from Student satisfaction survey.

Feedback

Student satisfaction survey responses indicate that Portfolio #4 assessment needs improvement in terms of explaining the task.

Recommendation

The Portfolio #4 assessment will be rewritten.

Unit Learning Outcomes

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

1. Explain how earth measurement theory underpins the production of electronic maps
2. Replicate a range of GIS mapping operations using point, line, polygon and raster data samples
3. Reproduce GIS-based maps that meet cartographic theory, standards and practice
4. Solve introductory spatial analysis problems using GIS data management and manipulation functions.

Nil

Alignment of Learning Outcomes, Assessment and Graduate Attributes



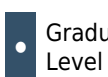
N/A
Level



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 - Practical Assessment - 20%	•			
2 - Practical Assessment - 40%		•		
3 - Practical Assessment - 40%			•	•

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 - Practical Assessment - 20%				•		•				
2 - Practical Assessment - 40%		•				•				
3 - Practical Assessment - 40%	•	•	•			•				

Textbooks and Resources

Textbooks

GEOG19021

Prescribed

Getting to Know ArcGIS Pro 2.6

Edition: 3 (2020)

Authors: Michael Law, Amy Collins

ESRI Press

Redlands, California, The United States of America

ISBN: 9781589486355

Binding: Paperback

Additional Textbook Information

The exercises and assessment require the textbook - and the correct edition is important.

The student will use CQUniversity hosted ArcGISPro software - and a guide to access ArcGISPro will be provided in week 1 of term.

The student will require access to a Microsoft Windows based computer - ArcGISPro does not run on an Apple computer.

[View textbooks at the CQUniversity Bookshop](#)

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- A personal computer with Microsoft Windows - ArcGIS does not run on Apple computers. Contact the unit lead if this constitutes a difficulty.
- ArcGIS-Pro - the unit lead will advise students how to access the CQU licensed ArcGIS-Pro.

Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

Teaching Contacts

Michael Hewson Unit Coordinator

m.hewson@cqu.edu.au

Schedule

Week 1 - 09 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Introducing GIS	Selected maps, videos and readings will be made available supplementing the prescribed textbook learning activities for each of the following weeks.	

Week 2 - 16 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
A first look at ArcGIS-Pro		

Week 3 - 23 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Exploring geospatial relationships		

Week 4 - 30 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Creating and editing spatial data		Mapping Practical #1 Due: Week 5 Monday (5 Apr 2021) 9:00 am AEST

Week 5 - 06 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Facilitating workflows		

Vacation Week - 13 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Vacation week		

Week 6 - 20 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Collaborative mapping		

Week 7 - 27 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Geoenabling your project		

Week 8 - 04 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Analysing spatial and temporal patterns		

Week 9 - 11 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Determining suitability		Mapping Practical #2 Due: Week 10 Monday (17 May 2021) 9:00 am AEST

Week 10 - 18 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Presenting your project		

Week 11 - 25 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Story telling with maps		

Week 12 - 01 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
GIS in the workplace		Mapping Practical #3 Due: Review/Exam Week Monday (7 June 2021) 9:00 am AEST

Review/Exam Week - 08 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
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Exam Week - 15 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
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Term Specific Information

ArcGIS does not run on Apple computers - the student should contact the unit lead if access to a Microsoft Windows PC is a problem.

The unit exercise data and assessment submissions are based on the prescribed textbook at Edition 3 (Getting to Know ArcGIS Pro 2.6) - students should obtain the textbook as soon as possible.

The student will be guided in week 1 on accessing the CQUniversity hosted ArcGIS-Pro software.

Assessment Tasks

1 Mapping Practical #1

Assessment Type

Practical Assessment

Task Description

Practical Assessment #1 has two components:

(1) Short answer questions; and

(2) GIS map output (being the result of undertaking the learning activities).

The material being assessed comes from the learning activities of weeks 1, 2 and 3.

The Practical will be submitted via Moodle as a single MS Word file.

Submit only the requested practical answers. They are a clearly identified subset of the exercises you undertake each week - do not submit all the weekly learning activity.

Assessment Due Date

Week 5 Monday (5 Apr 2021) 9:00 am AEST

Return Date to Students

Within 10 business days via Moodle.

Weighting

20%

Assessment Criteria

The assessment standards and marking criteria are further described in the GEOG19021 Moodle site - in summary:

1. Short answers:

- correct answer;
- completeness of discussion concerning the learning material;
- within word limits; and
- sentence construction, argument structure and readability of the short answer.

2. GIS maps in the Practical:

- completeness of the maps concerning the learning material and the context of the instructions of the textbook;
- compliance with cartographic standards (relevant to Portfolio);
- map extent scaled suitably to address the question; and
- how the map "tells the story" to the map readership.

Marks will be deducted at a rate of 1 mark for every 24 hours that the submission is later than the due or approved extension date/time.

Marks may be deducted if the maps are difficult to read - this includes poor choices for formatting legends, symbols/labels or map choropleths (colour design).

Referencing Style

- [Harvard \(author-date\)](#)

Submission

Online

Submission Instructions

Submit Practical #1 via the GEOG19021 Moodle site.

Learning Outcomes Assessed

- Explain how earth measurement theory underpins the production of electronic maps

Graduate Attributes

- Information Literacy
- Information Technology Competence

2 Mapping Practical #2

Assessment Type

Practical Assessment

Task Description

Practical Assessment #2 has two components:

(1) Short answer questions; and

(2) GIS map output (being the result of undertaking the learning activities).

The material being assessed in Portfolio #2 comes from the learning activities of weeks 4 to 8 of the unit tuition.

The Practical will be submitted via Moodle as a single MS Word file.

Submit only the requested Practical answers. They are a clearly identified subset of the exercises you undertake each week – do not submit all the weekly learning activity.

Assessment Due Date

Week 10 Monday (17 May 2021) 9:00 am AEST

Return Date to Students

Within 10 business days via Moodle.

Weighting

40%

Assessment Criteria

The assessment standards and marking criteria are further described in the GEOG19021 Moodle site – in summary:

1. Short answers:

- correct answer;
- completeness of discussion concerning the learning material;
- within word limits; and
- sentence construction, argument structure and readability of the short answer.

2. GIS maps in the Practical:

- completeness of the maps concerning the learning material and the context of the instructions of the textbook;
- compliance with cartographic standards (relevant to Portfolio);
- map extent scaled suitably to address the question; and
- how the map "tells the story" to the map readership.

Marks will be deducted at a rate of 1 mark for every 24 hours that the submission is later than the due or approved extension date/time.

Marks may be deducted if the maps are difficult to read – this includes poor choices for formatting legends, symbols/labels or map choropleths (colour design).

Referencing Style

- [Harvard \(author-date\)](#)

Submission

Online

Submission Instructions

Submit Practical #2 via the GEOG19021 Moodle site.

Learning Outcomes Assessed

- Replicate a range of GIS mapping operations using point, line, polygon and raster data samples

Graduate Attributes

- Problem Solving
- Information Technology Competence

3 Mapping Practical #3

Assessment Type

Practical Assessment

Task Description

Practical Assessment #3 has three components:

- (1) Short answer questions;
- (2) GIS map output (being the result of undertaking the learning activities); and
- (3) a map production project.

The material being assessed in Practical #3 comes from the learning activities of weeks 9 and 10 – while the Project assesses the learning of the majority of the term.

The map project is based on lecturer provided data and a written statement of requirements. The detailed requirements for the map are provided in the GEOG19021 Moodle site. You will download a range of mapping input data files, construct the map to meet 'user' requirements and complete the map according to cartographic standards.

The Practical will be submitted via Moodle as a single MS Word file.

Submit only the requested Practical answers. They are a clearly identified subset of the exercises you undertake each week – do not submit all the weekly learning activity.

Assessment Due Date

Review/Exam Week Monday (7 June 2021) 9:00 am AEST

Return Date to Students

Within 10 business days via Moodle.

Weighting

40%

Assessment Criteria

The assessment standards and marking criteria are further described in the GEOG19021 Moodle site – in summary:

1. Short answers:

- correct answer;
- completeness of discussion concerning the learning material;
- within word limits; and
- sentence construction, argument structure and readability of the short answer.

2. GIS maps in the Practical:

- completeness of the maps concerning the learning material and the context of the instructions of the textbook;
- compliance with cartographic standards (relevant to Portfolio);
- map extent scaled suitably to address the question; and
- how the map "tells the story" to the map readership.

3. GIS project map:

- completeness of the map concerning the task brief noting the 'user' requirements;
- compliance with cartographic standards;
- map extent scaled suitably to address the question; and
- how the map "tells the story" effectively to the map readership.

Marks will be deducted at a rate of 1 mark for every 24 hours that the submission is later than the due or approved extension date/time.

Marks may be deducted if the maps are difficult to read – this includes poor choices for formatting legends, symbols/labels or map choropleths (colour design).

Referencing Style

- [Harvard \(author-date\)](#)

Submission

Online

Submission Instructions

Submit Practical #3 via the GEOG19021 Moodle site.

Learning Outcomes Assessed

- Reproduce GIS-based maps that meet cartographic theory, standards and practice
- Solve introductory spatial analysis problems using GIS data management and manipulation functions.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Technology Competence

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