



GEOG19021 Geographic Information Systems

Term 2 - 2018

Profile information current as at 26/04/2024 08:36 pm

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

Prerequisite: Minimum of 18 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 - 2018

- Distance

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: 10%

2. **Practical Assessment**

Weighting: 15%

3. **Practical Assessment**

Weighting: 20%

4. **Practical Assessment**

Weighting: 25%

5. **Practical Assessment**

Weighting: 30%

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

Student feedback suggested no changes in the unit should be made for 2018 - perhaps some adjustment in using Australian GIS data would be valued.

Recommendation

The current distance education delivery of unit learning revolves around a textbook that contains the exercises and GIS data. Introducing some portfolio assessment with Australian data will be added.

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



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Practical Assessment - 10%	•	•	•	•
2 - Practical Assessment - 15%	•	•	•	•
3 - Practical Assessment - 20%	•	•	•	•
4 - Practical Assessment - 25%	•	•	•	•
5 - Practical Assessment - 30%	•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4

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 - 10%	•	•	•	•		•				
2 - Practical Assessment - 15%	•	•	•	•		•				
3 - Practical Assessment - 20%	•	•	•	•		•				
4 - Practical Assessment - 25%	•	•	•	•		•				
5 - Practical Assessment - 30%	•	•	•	•		•				

Textbooks and Resources

Textbooks

GEOG19021

Prescribed

Getting to Know ArcGIS Desktop

Edition: 5 (2018)

Authors: Michael Law, Amy Collins

ESRI Press

Redlands , California , The United States of America

ISBN: 9781589485105

Binding: Paperback

Additional Textbook Information

The textbook is essential - all learning and assessment activities are drawn from it, beginning firmly in week 1. More importantly, the textbook contains an authorized link to download ArcGIS system and practical exercise map data. It is very important you obtain the correct version - it needs to be "Getting to Know ArcGIS Desktop" Fifth Edition (ESRI Press).

The textbook will allow just one download of the 180-day license - so download access cannot be shared between students. For the same reason, students should not purchase a second-hand version of the book as the license will have expired.

ArcGIS is built for Microsoft Windows-based PCs with sufficient RAM resources: 16Gb is recommended. ArcGIS Desktop will not run on Apple computers - unless you first install special Windows emulation software. Do not try this option unless you have advanced knowledge of the emulation technology.

The lecturer may be able to arrange ArcGIS installation at CQUniversity campuses if that assists students who can visit a campus.

[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 Windows 7 or 10 to use the ArcGIS software. ArcGIS does not run on Apple hardware. Contact the unit co-ordinator if this constitutes a difficulty.

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 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
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Introduction to Geographic Information Systems (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 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Digital Maps and GIS		

Week 3 - 23 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Interacting with Geographic Data		

Week 4 - 30 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Geographic Co-ordinate Systems and Projections		

Week 5 - 06 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Mapping Features - Symbols, Labels and Classification		Portfolio #1 Due: Week 5 Monday (6 Aug 2018) 9:00 am AEST

Vacation Week - 13 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Vacation week		

Week 6 - 20 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Cartography		

Week 7 - 27 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Creating and Editing Features		Portfolio #2 Due: Week 7 Monday (27 Aug 2018) 9:00 am AEST

Week 8 - 03 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Geographical Answers - Querying and Selecting Features		Portfolio #3 Due: Week 8 Monday (3 Sept 2018) 9:00 am AEST

Week 9 - 10 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Geographical Answers - Relating Data		

Week 10 - 17 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Geographical Answers - Spatial Analysis - Vector Data		Portfolio #4 Due: Week 10 Monday (17 Sept 2018) 9:00 am AEST

Week 11 - 24 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Geographical Answers - Spatial Analysis - Raster Data		

Week 12 - 01 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
Spatial Systems - Emerging Trends		

Review/Exam Week - 08 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
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Exam Week - 15 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
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Portfolio #5 Due: Exam Week
Monday (15 Oct 2018) 9:00 am AEST

Assessment Tasks

1 Portfolio #1

Assessment Type

Practical Assessment

Task Description

Portfolio #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 in Portfolio #1 comes from the learning activities of weeks 2 and 3 of the unit tuition. The portfolio will be submitted via Moodle as a single *.pdf file - the GEOG19021 Moodle site will only allow PDF file submission.

Submit only the requested portfolio 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 (6 Aug 2018) 9:00 am AEST

Submit Portfolio #1 via the GEOG19021 Moodle site.

Return Date to Students

Week 6 Monday (20 Aug 2018)

Feedback will be returned via the GEOG19021 Moodle site.

Weighting

10%

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 with respect to the learning material;
- within word limits; and
- sentence construction, argument structure and readability of the short answer.

2. GIS maps:

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

Marks will be deducted at a rate of 1 mark within every 24 hours that the submission is later than the due or approved extension date/time. For example - an assessment submitted 16 hours after the due date/time will be penalised 1 mark - at 32 hours, 2 marks and so on.

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 Portfolio #1 via the GEOG19021 Moodle site.

Learning Outcomes Assessed

- Explain how earth measurement theory underpins the production of electronic maps;
- Replicate a range of GIS mapping operations using point, line, polygon and raster data samples;
- 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 Literacy
- Information Technology Competence

2 Portfolio #2

Assessment Type

Practical Assessment

Task Description

Portfolio #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 and 5 of the unit tuition. The portfolio will be submitted via Moodle as a single *.pdf file - the GEOG19021 Moodle site will only allow PDF file submission.

Submit only the requested portfolio 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 7 Monday (27 Aug 2018) 9:00 am AEST

Submit Portfolio #2 via the GEOG19021 Moodle site.

Return Date to Students

Week 9 Monday (10 Sept 2018)

Feedback will be returned via the GEOG19021 Moodle site.

Weighting

15%

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 with respect to the learning material;
- within word limits; and
- sentence construction, argument structure and readability of the short answer.

2. GIS maps:

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

Marks will be deducted at a rate of 1 mark within every 24 hours that the submission is later than the due or approved extension date/time. For example - an assessment submitted 16 hours after the due date/time will be penalised 1 mark - at 32 hours, 2 marks and so on.

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 Portfolio #2 via the GEOG19021 Moodle site.

Learning Outcomes Assessed

- Explain how earth measurement theory underpins the production of electronic maps;
- Replicate a range of GIS mapping operations using point, line, polygon and raster data samples;
- 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 Literacy
- Information Technology Competence

3 Portfolio #3

Assessment Type

Practical Assessment

Task Description

Portfolio #3 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 #3 comes from the learning activities of week 6 of the unit tuition.

The portfolio will be submitted via Moodle as a single *.pdf file - the GEOG19021 Moodle site will only allow PDF file submission.

Submit only the requested portfolio 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 8 Monday (3 Sept 2018) 9:00 am AEST

Submit Portfolio #1 via the GEOG19021 Moodle site.

Return Date to Students

Week 10 Monday (17 Sept 2018)

Feedback will be returned via the GEOG19021 Moodle site.

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 with respect to the learning material;
- within word limits; and
- sentence construction, argument structure and readability of the short answer.

2. GIS maps:

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

Marks will be deducted at a rate of 1 mark within every 24 hours that the submission is later than the due or approved extension date/time. For example - an assessment submitted 16 hours after the due date/time will be penalised 1 mark - at 32 hours, 2 marks and so on.

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 Portfolio #3 via the GEOG19021 Moodle site.

Learning Outcomes Assessed

- Explain how earth measurement theory underpins the production of electronic maps;
- Replicate a range of GIS mapping operations using point, line, polygon and raster data samples;
- 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 Literacy
- Information Technology Competence

4 Portfolio #4

Assessment Type

Practical Assessment

Task Description

Portfolio #4 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 #4 comes from the learning activities of weeks 7 and 8 of the unit tuition.

The portfolio will be submitted via Moodle as a single *.pdf file - the GEOG19021 Moodle site will only allow PDF file submission.

Submit only the requested portfolio 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 Sept 2018) 9:00 am AEST

Submit Portfolio #1 via the GEOG19021 Moodle site.

Return Date to Students

Week 12 Monday (1 Oct 2018)

Feedback will be returned via the GEOG19021 Moodle site.

Weighting

25%

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 with respect to the learning material;
- within word limits; and
- sentence construction, argument structure and readability of the short answer.

2. GIS maps:

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

Marks will be deducted at a rate of 1 mark within every 24 hours that the submission is later than the due or approved extension date/time. For example - an assessment submitted 16 hours after the due date/time will be penalised 1 mark - at 32 hours, 2 marks and so on.

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 Portfolio #1 via the GEOG19021 Moodle site.

Learning Outcomes Assessed

- Explain how earth measurement theory underpins the production of electronic maps;
- Replicate a range of GIS mapping operations using point, line, polygon and raster data samples;
- 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 Literacy
- Information Technology Competence

5 Portfolio #5

Assessment Type

Practical Assessment

Task Description

Portfolio #5 has three components:

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

The material being assessed in Portfolio #1 comes from the learning activities of weeks 9, 10 and 11 of the unit tuition (as well as the whole unit for task 3).

The portfolio will be submitted via Moodle as a single *.pdf file - the GEOG19021 Moodle site will only allow PDF file submission.

Submit only the requested portfolio 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

Exam Week Monday (15 Oct 2018) 9:00 am AEST

Submit Portfolio #1 via the GEOG19021 Moodle site.

Return Date to Students

Exam Week Friday (19 Oct 2018)

Feedback will be returned via the GEOG19021 Moodle site.

Weighting

30%

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 with respect to the learning material;
- within word limits; and
- sentence construction, argument structure and readability of the short answer.

2. GIS maps (including the task 3 map):

- completeness of the maps with respect to the learning material and the context of the instructions of the textbook - as well as the extent to which it fulfils the task 3 map documented 'customer requirements';
- compliance with cartographic standards (relevant to Portfolio);
- scaled suitably to address the question and "tell the story" to the map readership.

Marks will be deducted at a rate of 1 mark within every 24 hours that the submission is later than the due or approved extension date/time. For example - an assessment submitted 16 hours after the due date/time will be penalised 1 mark - at 32 hours, 2 marks and so on.

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 Portfolio #1 via the GEOG19021 Moodle site.

Learning Outcomes Assessed

- Explain how earth measurement theory underpins the production of electronic maps;
- Replicate a range of GIS mapping operations using point, line, polygon and raster data samples;
- 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 Literacy
- 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