

ENS353

Applied Geospatial Analysis

School: School of Science, Technology and Engineering

2026 | Trimester 2

UniSC Sunshine Coast
UniSC Moreton Bay**BLENDED
LEARNING**

Most of your course is on campus but you may be able to do some components of this course online.

Please go to unisc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

In this advanced GIS course, you will build-on GIS skills acquired in the introductory GIS course to have deeper understanding of spatial data sets and analysis. For spatial data sets, you will have deeper understanding of coordinate systems, data models, data formats, digitisation tools, and data search. The GIS analysis will include operations such as network analysis, suitability analysis, hydrological analysis, and GIS project planning. Finally, you will learn to perform cartographical modelling by integrating and documenting a series of geoprocessing steps to address real-world issues.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Asynchronous Learning Material	1hr	Week 1	12 times
Tutorial/Workshop 1 – Online workshop	1hr	Week 1	12 times
Laboratory 1 – On campus lab	2hrs	Week 1	12 times

1.3. Course Topics

Understanding spatial data sets, their models, formats, and coordinate systems

Creating spatial data sets, and locating the existing ones

Analysing spatial data sets

Preparing cartographical models and performing geoprocessing

Performing hydrological analysis using a cartographical model

Understanding network analysis

Representing spatial information: media and cartographic principles

Planning and management of GIS project

Conducting a geo-processing task in a real-world context

2. What level is this course?

300 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES	GRADUATE QUALITIES MAPPING	PROFESSIONAL STANDARD MAPPING *
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...	Australian Learning & Teaching Council
1 Communicate geographic information clearly and coherently using various technologies	Empowered	1, 3
2 Critically use spatial thinking to solve complex geospatial issues.	Creative and critical thinker	2, 3
3 Apply GIS tools and techniques to address complex real-world issues.	Empowered	5, 6
4 Plan and design a proposal and its subsequent execution in a discipline area incorporating GIS analysis.	Engaged	5

* Competencies by Professional Body

CODE	COMPETENCY
AUSTRALIAN LEARNING & TEACHING COUNCIL	
1	Knowing: Demonstrate a coherent geographical understanding of trends, processes and impacts that shape Australian and other environments and/or societies at different spatial and temporal scales.
2	Knowing: Demonstrate an understanding of Geography as an academic discipline, including awareness of its concepts, history and principal subfields, whilst acknowledging the contested, provisional and situated nature of geographical understanding.
3	Thinking: Apply geographical thought creatively, critically and appropriately to specific spaces, places and/or environments.
5	Investigating and problem solving: Resolve geographical questions by ethical means, applying evidence-based knowledge and appropriate research techniques, including those associated with field work.
6	Communicating: Communicate geographical perspectives and knowledge effectively to specialist and non-specialist audiences using appropriately selected written, oral and visual means.

5. Am I eligible to enrol in this course?

Refer to the [UniSC Glossary of terms](#) for definitions of "pre-requisites, co-requisites and anti-requisites".

5.1. Pre-requisites

ENS253

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Basic knowledge of computer operation.

5.5. Microcredential Information

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

Task 1 of this course is due in week5 where students will have to do a group presentation. Before this presentation, as a part of the assessment task, students are required to get involved in group discussions which include online discussions in Canvas. Feedback is constantly provided during this process.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Oral	Group	20%	20-25-minute group presentation on GIS data sets (week5)	Week 5	In Class
All	2	Oral and Written Piece	Individual	30%	1200 words report and a 10 minutes presentation in week 11	Refer to Format	Online Assignment Submission with plagiarism check
All	3	Report	Individual	50%	2500 words	Week 12	Online Assignment Submission with plagiarism check

All - Assessment Task 1: Presentations about GIS data set

GOAL:	Gaining a deeper understanding of GIS data sets and their suitability for subsequent analysis to gain the confidence to communicate this knowledge with the class.			
PRODUCT:	Oral			
AUTHORSHIP STATEMENT:				
FORMAT:	20-25-minute group presentation.Detailed criteria along with an assessment matrix for this task will be provided on Canvas			
CRITERIA:	No.	Learning Outcome assessed		
	1	Communicate your individual understanding of GIS data sets	1	
	2	Communicate your understanding of GIS data sets as a group	1 2	
	3	Understand the appropriateness of GIS data sets for spatial analysis	2 3 4	
GENERIC SKILLS:	Communication, Collaboration, Applying technologies			

All - Assessment Task 2: Preparing a GIS project plan to address the identified real-world issue of your study area and making a presentation about your progress with the plan

GOAL:	Preparing a project plan for the execution of the task 3 project, and creating a geo-processing flow diagram showing different geoprocessing steps and presentation about the progress with GIS analysis				
PRODUCT:	Oral and Written Piece				
AUTHORSHIP STATEMENT:					
FORMAT:	Submit: Week 7 (Plan) and 11 (Presentation). MS word file with 1500 words and a map of the study area. Detailed criteria along with an assessment matrix for this task will be provided on Canvas. 10-15 minute presentation.				
CRITERIA:	No.	Learning Outcome assessed			
	1	For the first part, you will be assessed for your ability to: Formulate a GIS project, Workout the timeline for the completion of the project, Assess requirements of GIS data sets for the project, Identifying possible constraint for the project	1	2	4
	2	The second part will be assessed on your ability to: Communicate the proposed project plan, Communicate initial findings of your GIS project	1	2	4
GENERIC SKILLS:	Communication, Problem solving, Organisation				

All - Assessment Task 3: Report about the GIS project and its execution using geoprocessing tools to address the identified issue

GOAL:	To plan and execute a series of interrelated geo-processing tasks set in a semi real-world situation		
PRODUCT:	Report		
AUTHORSHIP STATEMENT:			
FORMAT:	A report prepared in MS Word with 2500 words on GIS analysis performed to address real-world issue. Detailed information along with an assessment matrix for this task will be provided on Canvas. The report will include metadata information and maps.		
CRITERIA:	No.		Learning Outcome assessed
	1	execute a GIS project to address a real-world issue	3
	2	Using GIS data sets appropriately	1 2
	3	Identifying the right geoprocessing tools and using them appropriately	2 3
	4	Presenting GIS analysis results with cartographical quality maps	1 3
	5	Preparing metadata report	1
	6	Preparing a professional quality report	3 4
GENERIC SKILLS:	Communication, Problem solving, Applying technologies, Information literacy		

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

There are no required/recommended resources for this course.

8.2. Specific requirements

Not applicable

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the [online induction training for students](#), and following the instructions of the University staff.

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

- (a) The final mark is in the percentage range 47% to 49.4%; and
- (b) The course is graded using the Standard Grading scale

Eligibility for Supplementary Assessment Your eligibility for supplementary assessment in a course is dependent of the following conditions applying: The final mark is in the percentage range 47% to 49.4% The course is graded using the Standard Grading scale You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:

- (a) One day: deduct 5%;
- (b) Two days: deduct 10%;
- (c) Three days: deduct 20%;
- (d) Four days: deduct 40%;
- (e) Five days: deduct 60%;
- (f) Six days: deduct 80%;
- (g) Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:

Less than 15 minutes: No penalty

From 15 minutes to 30 minutes: 20% penalty

More than 30 minutes: 100% penalty

10.4. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit <https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

10.5. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The [Student Charter](#) sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.6. General Enquiries

For course-specific questions, contact your teaching staff or Course Coordinator.

For other enquiries or to access support, please contact Student Central:

- [UniSC Student Central](#)
- [UniSC Adelaide Student Central](#)

