ENVS3390

Applied GIS

Session 2, Weekday attendance, North Ryde 2020

Department of Earth and Environmental Sciences

Contents

Disclaimer

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Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and ot her small group learning activities on campus for the second half-year, while keeping an online ver sion available for those students unable to return or those who choose to continue their studies onli ne.

To check the availability of face-to-face and onlin e activities for your unit, please go to timetable vi ewer. To check detailed information on unit asses sments visit your unit's iLearn space or consult yo ur unit convenor.

General Information

Unit convenor and teaching staff
Michael Chang
michael.chang@mq.edu.au

Credit points
10

Prerequisites
130cp at 1000 level or above including (ENV264 or ENVS264 or ENVS2364 or GEOS264) and 10cp from ENVE or ENVG or ENV or GEOP units at 3000 level)

Corequisites

Co-badged status

Unit description
Geographic information systems (GIS) are used for data storage, visualisation (mapping), and the provision of information to support decision making. This PACE unit expands on ENVS2364 by applying advanced GIS concepts and techniques within the context of urban and regional management in collaboration with a partner organisation. This engagement is designed to provide students with skills that enhance their educational experience and work-readiness in the field of urban and regional management, while contributing to the research/ project goals of the PACE partners.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

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

ULO1: design and execute advanced spatial analysis in GIS

ULO2: effectively communicate the outputs of spatial analysis in both map and written formats

ULO3: apply advanced GIS concepts and techniques to real-world urban and regional management problems

ULO4: analyse and interpret spatial information from urban and regional management agencies

General Assessment Information

Assessment Criteria

Assessment at Macquarie University is standards-based, as outlined in the Assessment Policy. This means that your work will be assessed against clear criteria, and these criteria (e.g. in a rubric) will be made available when the assessment tasks are released to you on iLearn.

ENVS3390 has No Hurdle Requirements

Submission of Assessments

All assessments must be submitted online through Turnitin unless otherwise indicated. Links for the submission of each assessment will be available on iLearn.

You should always check that you have uploaded the correct file. If you have a problem, please email the Unit Convenor with your correct file. You must also keep a copy of your assessments until the end of semester in case there is a problem with your submission. It is your responsibility to ensure that you can provide a copy of your assessment if requested.

Marking of Assessments

Assignments will usually be marked through Turnitin with grades provided through Gradebook on iLearn. Please do not submit your assessments via email or in hard copy unless requested (e.g. a sketch or drawing).

We aim to return your assessment grades and feedback within two to three weeks of the date that you submitted it. We appreciate your patience and will advise you through iLearn when your marked assessments and feedback are available for viewing.

Penalties for Late Assessments

The penalty for late submission of assessments in this unit is *ten percent (10 %) of the assessment value per day*, calculated from the due time and date. This means that if the assignment is worth a total of 30 marks (or 30 % of the unit) you will lose 3 marks for each day it is late. This is a hefty penalty designed to make you aware of the importance of organising yourself around assessment due dates. The penalty will be applied over weekdays and weekends unless you have been granted an extension **prior to the due date**.

Extensions for Assessments

To obtain an extension for an assessment task, you will need to follow the formal process as outlined in the Special Consideration Policy, and you must provide appropriate supporting evidence (e.g. medical certificate - see advice for Special Consideration requests). The final decision regarding the granting of an extension lies with the unit convenor. Permission for extensions must be sought *before the due date* unless there are exceptional circumstances. Please let us know of problems in advance or as soon as possible, not after the event. We are likely to be much more sympathetic and able to accommodate your circumstance if you follow this advice.

Exams

Details of exam conditions and timetables can be found on the Exams and Results portal. The draft exam timetable will be released approximately eight weeks before the commencement of the exams. The final exam timetable will be published 4 weeks before commencement. All students (including exchange students) are expected to present themselves for the exam at the time and place designated in the exam timetable. Note this may include weekends.

For unavoidable disruptions during exams, you should apply for Special Consideration as soon as possible. If a Supplementary Examination is granted as a result of the Special Consideration process, the exam time will be scheduled after the conclusion of the official examination period and you will receive an individual notification prior to the exam with the exact date and time of the Supplementary Examination. You will only be allowed one opportunity to sit the Supplementary Exam as outlined in the Special Consideration Policy

Assessment Tasks

Name	Weighting	Hurdle	Due
Assignment 1 - Advance spatial analyses	15%	No	Week 5
Assignment 2 - Spatial Data Collection and Management	15%	No	Week 8
Assignment 3 - GIS Project Design and Implementation	30%	No	Week 12
Final Exam	40%	No	Check exam timetable

Assignment 1 - Advance spatial analyses

Assessment Type [1]: Quantitative analysis task
Indicative Time on Task [2]: 15 hours
Due: **Week 5**
Weighting: **15%**

Students are asked to apply both basic and advance GIS analyses to retrieve useful information for environmental management and/or urban planning applications.

On successful completion you will be able to:

• effectively communicate the outputs of spatial analysis in both map and written formats

• apply advanced GIS concepts and techniques to real-world urban and regional management problems

• analyse and interpret spatial information from urban and regional management agencies

Assignment 2 - Spatial Data Collection and Management

Assessment Type [1]: Field work task
Indicative Time on Task [2]: 10 hours
Due: **Week 8**
Weighting: **15%**

Students will conduct a field survey to collect useful information about land use and public/commercial space usage in the local council areas using GIS tools. The fieldwork may be conducted in the neighbourhood area of where the student resides.

On successful completion you will be able to:

- effectively communicate the outputs of spatial analysis in both map and written formats
- apply advanced GIS concepts and techniques to real-world urban and regional management problems

Assignment 3 - GIS Project Design and Implementation

Assessment Type [1]: Project
Indicative Time on Task [2]: 33 hours
Due: **Week 12**
Weighting: **30%**

Students will undertake a project on using spatial network analysis or regression model for regional transport planning studies.

On successful completion you will be able to:

- design and execute advanced spatial analysis in GIS
- effectively communicate the outputs of spatial analysis in both map and written formats
- apply advanced GIS concepts and techniques to real-world urban and regional management problems
- analyse and interpret spatial information from urban and regional management agencies

Final Exam

Assessment Type [1]: Examination
Indicative Time on Task [2]: 30 hours
Due: **Check exam timetable**

Weighting: **40%**

Final exam

On successful completion you will be able to:

- design and execute advanced spatial analysis in GIS
- effectively communicate the outputs of spatial analysis in both map and written formats
- apply advanced GIS concepts and techniques to real-world urban and regional management problems

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[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Planning and management agencies use geographic information systems (GIS) for data storage, visualisation (mapping), and the provision of information to support decision making. Having completed the unit ENVS2364 (or ENVS264) – Introduciton to Geographic Information Science, you have acquired the basic skills to drive a GIS and to perfom some of these tasks. In this unit, you build on this fundamental knowledge by learning to apply advanced GIS concepts and techniques within the context of urban and regional management.

ENVS3390 is a PACE unit of the minor of spatial information science (SIS), and is designed to integrate student's knowledge and experiences from their whole program in preparation for the next stage of their careers. ENVS390's lectures cover a range of topics to assist you in advancing from the basic skills required to drive a GIS (i.e. ENVS264) to working with a GIS in urban and regional management, including: where to find spatial data and how to create your own spatial data, advanced editing, spatial and pattern analysis with vector data, 3D analysis and visualization, network analysis and web GIS. This unit provides you with advanced GIS skills that are applicable to a wide range of agencies tasked with urban and regional management.

Unit iLearn

This unit has an iLearn page that can be accessed through ilearn.mq.edu.au . It contains important information and other materials relating to the unit, including details and links for assessments.

Communication

The unit iLearn is the primary way that we communicate with you. Please check it regularly for announcements and posts. You are encouraged to use the Discussion Board on iLearn to post questions and generate discussion with other students. Please only email the convenor with private matters – all other questions should be posted on iLearn.

Unit Organisation

This unit is delivered in **weekly topics.** The organisation of these is outlined in a detailed unit schedule which is available on iLearn.

Students enrolled in the Weekday attendance/Infrequence attendance/Fully online attendance offering should **have the same access to all the learning materials on iLearn and software is available either from the unit convenor upon request or accessible from AppStream (http s://mq.okta.com)**

Classes

The class timetable for this unit can be found through the Timetable portal.

Workload

The expected workload for this 10-credit point unit is 150 hours of activity, comprising Scheduled Learning Activities (i.e. lectures and practicals) of 49 hours and None-scheduled activities (i.e. class preparation and assessments) of 101 hours.

Requirements to complete this unit satisfactorily

To complete this unit satisfactorily, you must:

1. Participate in all scheduled classes;

2. Complete all assessments and the final exam; and

3. Achieve a pass grade or higher.

The descriptions for grades common to all coursework units offered by Macquarie University are outlined in Schedule 1 of the Assessment Policy.

Technology Used and Required

This unit will use iLearn and Echo360. See the Instructions on how to log in to iLearn and the iLe arn quick guides for students which will help you:

- Getting started - Find out how to navigate and familiarise yourself with the iLearn environment
- Activities - Learn how to effectively complete the activities required of you in iLearn
- Assignments and Gradebook - Find out how to submit assessments and view your grades using iLearn
- Online study tips - Studying online is a unique experience, learn how to navigate it here
- Discussion forums - Explore the different types, and features of discussion forums in

iLearn

- Lecture recordings - Find out how to access lectures online, as well as the features available to you

GIS Software

This unit will use ArcGIS Desktop and MS Excel software for the practical exercises. You will require access to a computer and broadband internet to complete this unit. The computer labs may be available for casual use outside scheduled practical classes. Students who have a home computer with a Windows (7 or 10) operating system may obtain a copy of the ArcGIS software from the unit convenor. The ArcGIS software is **NOT** supported by Mac or Linux operating systems. It is not essential for students to have ArcGIS installed on their home computer as the computers in the computer labs are available for casual use outside scheduled practical classes. The software is also available on AppStream.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.