UNSW SYDNEY | Australia's Global University

Built Environment

BENV7503
Geocomputation

Course Outline – Term 2, 2020

Disclaimer

Information within this document is subject to change. The full and most accurate course outline will be available in Moodle closer to the start of the term in which the course is offered.

1. COURSE STAFF

Course Contact	Dr Simone Zarpelon Leao
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2. COURSE DETAILS

Credit Points	6 units of credit (uoc)
Workload	Approx. 150 hours including class contact hours, weekly individual and group online learning activities, readings, class preparation, and assessment activities.
Teaching Times and Location	Find details in timetable http://www.timetable.unsw.edu.au

Description

This course will provide students the skills to undertake sophisticated spatial (statistical) analysis and simulation. GeoComputation is in part the continuing development and application of analytical statistics that can be applied to clustering, search and measures of association over space and through time. The course will provide students with the theoretical and mathematical background behind numerous spatial analytical techniques, and also to select and integrate these methods in a way that it is appropriate for the problems addressed and the data available. Ultimately, the course will enhance the intellectual and methodological capacity of students in the domain of urban problem-solving. The course will use varied analytical environments, including software QGIS, GeoDa, platforms for agent-based modelling, as well as programming using R.

Aims

By successfully completing the course, students will have the ability to analyse data via modern platforms, sophisticated techniques, and programming in R language. They will also understand that Geocomputation is an area in progressive development, and platforms and techniques are constantly being developed or improved.

Course Learning Outcomes (CLOs)

At the successful completion of this course, you will be able to:

1. Manipulate and analyse data in a reproducible fashion using computational techniques.
2. Demonstrate an understanding of the concepts and methods for geocomputational analysis through interaction with real-world data.
3. Select and employ a range of data analysis tools and methods including demonstrating understanding of the appropriateness of different geocomputation methods for different data.
4. Demonstrate computationally-oriented independent research applied to the urban context.

3. ASSESSMENT

Assessment task	Weight	CLOs Assessed
1. Assignment 1 (individual)	33%	1
2. Assessment 2 (individual)	33%	2
3. Assessment 3	34%	3, 4

4. COURSE IMPROVEMENT AND FEEDBACK

Feedback from students is an integral part of improving courses and teaching approaches. One of the primary mechanisms of feedback is myExperience, which we strongly urge all students to complete at the end of term. Course convenors use the feedback to make ongoing improvements to the course. This is communicated in Moodle in the myFeedback Matters page.