



**UNSW**  
SYDNEY

Australia's  
Global  
University

# Built Environment

BENV7500  
Programmable Cities



Course Outline – Term 1, 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

|                       |  |
|-----------------------|--|
| <b>Course Contact</b> | Simone Zarpelon Leao   |
| <b>Email</b>          | <a href="mailto:s.zarpelonleao@unsw.edu.au">s.zarpelonleao@unsw.edu.au</a> |

## 2. COURSE DETAILS

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

## Description

Computer programming is becoming an increasingly important skill for people working with urban informatics, big data, and smart cities as it enables professionals to: save time by automating repetitive tasks, accurately document and quickly repeat or modify analytical processes, and ask questions that could not be asked using pre-built software. This course teaches how to automate GIS tasks in the context of urban issues using Python scripting language. This course dedicates time to programming fundamentals so that skills learned can be applied to languages other than Python. Therefore, another benefit from this course is increased ability to adapt to new technologies and programming languages.

## Aim

This course is designed to provide students with an understanding of fundamentals of computer programming and with technical skills to design and implement solutions in Python to automate urban data analytics.

## Course Learning Outcomes (CLOs)

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

1. Demonstrate an understanding of programming concepts, methods, and approaches such as debugging, error checking, and documentation;
2. Design and implement solutions in Python to automate geoprocessing tasks; and
3. Apply programming knowledge and skills appropriate to the aims of specific practical projects and real data.

## 3. ASSESSMENT

| Assessment task                       | Weight | CLOs Assessed |
|---------------------------------------|--------|---------------|
| 1. Assignment – Individual Assignment | 30%    | 1             |
| 2. Assignment – Individual Assignment | 30%    | 2             |
| 3. Assignment – Individual Assignment | 40%    | 3             |

#### **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.