



**UNSW**  
SYDNEY

Australia's  
Global  
University

# Built Environment

CODE1240

Computational Design 2 (Intermediate)



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

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## 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

'Computational Design II (Intermediate)' is the second of four Computational Design courses that introduce students to Computational Design. Students will develop and apply intermediate skills in visual programming languages to critically analyse complex environmental conditions, while synthesising computational design thinking knowledge and methods for solving built environment challenges. Theoretical knowledge will be introduced falling under the following categories: Morphology, Algorithmic Form, Emergence, and Systems. Students will participate to weekly laboratory-based activities to experiment with and develop architectural forms. The students performance will be evaluated with respect to their progressive work developed in preparation for or during the studio activities. Students will employ a range of verbal and multimedia communication skills to demonstrate their explorations and results.

## Aims

The course will introduce students to a design process that uses evidence-based design as a design methodology. Students will be exposed to the cutting edge research exploring both of ideas in real time using contemporary computer gaming technology.

Lectures given in a twelve-week teaching period will help students to gain a better understanding into evidence-based design by showcasing them best practice examples and introduce them to software skills to enable a feedback loop via Processing and Arduino. The course builds upon existing knowledge gained in CODE1161 (Processing I) and Digital Fabrication and is therefore an advanced course. The project designed in the course is in situ and needs to respond to site constraints. During the semester (Week 1 – 5) students will study intensively and gain further skills in Processing and Arduino to further engage into their software journey in the two mentioned software packages. This Assessment 1 will find its output in form of a small exercise that demonstrates the new skills. After the mid semester break students have then gained the skills to employ their knowledge into a design project as Assessment 2 (Week 6 – 12) and design and optimise their design outcome. The final Assessment 3 (Week 13 – 15) is a group task in where the top 3 – 5 outcomes of Assessment 2 (Depending on student numbers) are realized in a group of 10 students. Here students have the chance to re-visit skills learned in CODE1150 by fabricating the pavilion (or similar structure) in the Digital Fabrication Lab.

## Course Learning Outcomes (CLOs)

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

1. Apply intermediate skills in a visual programming language interface.
2. Synthesise computational design thinking knowledge and methods for built environment challenges.
3. Critically analyse complex environmental conditions through visual programming language interfaces.
4. Apply relevant verbal and multimedia communication skills.

## 3. ASSESSMENT

Assessment task	Weight	CLOs Assessed
1. Assignment 1: Cinema	20%	1, 2
2. Assignment 2: Residence	30%	1, 3
3. Assignment 3: Completed Design	40%	1, 3, 4
4. Assignment 4: Checklist	10%	1, 2, 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.