UNSW SYDNEY | Australia's Global University

Built Environment

CODE3100
Digital Collaboration Studio

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	Apro Matthias Haeusler
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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

'The Digital Collaboration Studio is the graduation year opening course of the Bachelor of Computational Design degree. The course introduces students to the design of bioinspired kinetic environments. Students adopt an action research approach, characterised by the iterative progression between the conceptualisation of a problem, the action towards its resolution, and the evaluation of that action, to generate a responsive design solution in the form of a small-scale pavilion. Students are exposed to the mathematical, physical and environmental principles necessary to simulate and evaluate changes to the pavilion's kinetic structure, material system and overall shape. The course culminates in the authorship of a machine learning algorithm predicting the morphing behaviour of the pavilion, and with a physical prototype of the pavilion's kinetic material system.

Aims

This course aims to:

1. Explore bioinspired associative design for generating, simulating and evaluating innovative kinetic materials systems for morphing architecture.
2. Explore emergence, self-organisation and resilience for designing a Built Environment which evolves codependently with its environment.

Course Learning Outcomes (CLOs)

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

1. Recognise mathematical and environmental principles for simulating and evaluating changes to responsive environments.
2. Identify the conceptual association between a well-defined set of design principles and a well-defined set of potential outcomes for resolving built environment challenges.
3. Apply individual knowledge and skills in collaborative work practices, taking initiative as well as co-operating effectively in a team.
4. Apply interdisciplinary knowledge to generate, analyse, and evaluate a logically and aesthetically sound responsive design, adapting computational design thinking and technologies to meet personal preferences rather than adapting practice to standard platforms.
5. Critically analyse, synthetise and evaluate research strategies, experiments and outcomes using systematic approaches to data collection, interpretation and integration.
6. Organise and effectively communicate information applying relevant verbal and multimedia communication skills in a professional context.

3. ASSESSMENT

Assessment task	Weight	CLOs Assessed
1. Analysing a Biological Role Model	10%	1, 2, 3
2. Designing a Responsive Environment	45%	1, 2, 3, 4, 5
3. Reflecting on and Communicating your Design	45%	1, 2, 3, 4, 5, 6

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.