Module Specification

Digital Charrette

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Contents

Part 1: Information

Module title: Digital Charrette

Module code: UBLLY1-15-M

Level: Level 7

For implementation from: 2021-22

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Architecture & Built Environ

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Architecture and the Built Environment

Module type: Project

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The module requires small teams of students to work collaboratively in a competitive setting. In response to an open design brief, the teams compete in the development of a proposition for an architectural structure. The competition encourages a creative reconsideration of the nature of architectural structure and promotes experimentation with materials and fabrication techniques. One limiting parameter of the brief is that the structure must be buildable. To this end, each team

is required to provide a concisely written and illustrated report to explain their plan for the execution of their design.
This studio-based module will include a theoretical seminar-workshop to encourage more in-depth design explorations and thus continue the theoretical strand running through the programme. The theoretical investigation and the brief will explore characteristic human-environment interaction theories to enable students to understand their design's potential experience.

Features: The module requires teamwork and is assessed by the submission of group project work that is assessed as a single output (where one mark is determined for the project, and all group-members involved in that project receive that mark); it is not assessed as individually authored contributions to a project (where group members' marks are determined and assigned individually).

Educational aims: Apply in-depth understanding of Human-Environment Interaction Design theories to a design process of buildable project.

Develop and practice design skill in computational architecture.

Investigate and identify and find innovative digital fabrication and automated construction methods and management.

Plan for the implementation of a project in computational architecture, projecting forward a strategy for its procurement, fabrication, and assembly.

Practice team-working skills in developing a proposition for designing and building a project in computational architecture.

Outline syllabus: The module runs as a short, intense 4-week architecture studio. Students work in small groups of 2 to 4 students and act as competing teams developing proposals in response to an architectural brief. Students are encouraged to use the expertise developed in other related modules to generate and refine proposals for architectural structures designed following computational architectural practices. The problems posed by the brief includes the practical questions of structural integrity, fabrication, joint design, fixings and assembly sequencing that are integral to the consideration of architectural practice at 1:1 scale; and so students must account for these physical issues in their project solution.

The project must aspire to design an experience for the user. Accordingly, the theoretical strand will inform the human-environment interaction character of the proposal. The historical, theoretical and critical understanding of experience design will be delivered as lectures and seminars over two weeks. The teams are invited to read and collaboratively distil seminal texts to be discussed in the seminar sessions. This strand is integrated as part of the team's design process through an analogue (non-computational) exercise, and assessed in presentation format. This milestone allows an interim review for the Group Design Project.

Summative: Each team submits two related module outputs: A Group Design Project represented in drawings and physical models, and a Project Feasibility Report explaining the group's proposals for the practical implementation of their project.

Part 3: Teaching and learning methods

Teaching and learning methods: 1. As it is an advanced architectural studio: The module is conducted predominantly by self-directed teamwork. Teaching is provided as expert tutorial advice providing insight on appropriate computational methods, fabrication techniques, modelling, structural design, and construction management. These advisory tutorials are programmed to support the student-teams' process of design development. This teaching is understood as a form of expert consultancy provided in support of each team's testing and development processes.

2. Lecture-based, seminar discourse, and self-directed study:
This track enables students to support their creative investigation and independent learning to consider more profound design issues and receiving feedback. Students are exposed to master level architectural design education concepts. The introduction of analogue logic exercises and the invitation to abstract the process into visual representation allows students with non-design and design background to understand and communicate critical thinking.

Module Learning outcomes:

MO1 Schematically design a buildable project displaying an understanding and interpretation of human-environment interaction theoretical knowledge systematically within the context of computational processes.

MO2 Work on the conception, design development and communication of an architectural competition that includes a technically validated submission for innovative methods in computational architecture.

MO3 Explore computational processes, rapid prototyping, and fabrication methods to generate and assemble structural forms and use these to bring a design proposition to resolution.

MO4 Identify and explain the construction management, health & safety and programming methods for procurement, digital fabrication, build sequence, assembly, and completion of an architectural structure.

MO5 Generate a feasibility report for a computational project that presents and articulates the project's architectural concept and generative design process and explain its execution regarding procurement, regulatory compliance, project programming, risk assessment and costing constraints.

MO6 Critically reflect on the advantages and challenges of working collaboratively.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 120 hours

Studio sessions = 30 hours

Total = 150

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://rl.talis.com/3/uwe/lists/72CFAA33-3DBA-AE99-7F59-255724AF5A91.html

Part 4: Assessment

Assessment strategy: This module's assessment output is in two parts - a Group Design Project, and a Project Feasibility Report. The Design Project submission uses the accepted communication and media by which a design project is summarised and presented as an entry to an architectural competition. Thus, the students will develop communication skills that directly mimic the skills they will need as architectural practitioners. The Project Feasibility Report is a professional report on the practical implementation of the propose design project. As such, it should communicate concisely in written descriptions, process diagrams, programming charts and spreadsheets the cost, design parameters, fabrication strategy, assembly sequence and risk assessments that have been taken forward in planning the construction of the design proposal. Teams are expected to develop this document in the full expectation that they will be asked to lead and direct others in the timely and safe construction of their design proposition. This is an appropriate mode of assessment because the students are required to demonstrate their skills in assembling a project feasibility report for a client and demonstrate how they write a professional plan to implement an architectural project.

Formative assessments: will be evaluated in a visual and verbal presentation of the project's History and Theory research process.

Summative assessments: will evaluate the practical and theoretical understanding, through the portfolio documents design and the student's ability to understand and represent complex information.
Assessment criteria will be made available to the students, along with the project brief.

Feedback: there will be peer and tutor feedback throughout the module critiques. The students will be invited to provide self-assessment. Written feedback on completion of the projects.

Resit Strategy: whereas the First Attempt at this module requires two group work submissions; the Resit Attempt is identified as an individual assessment. The scope of the outputs identified for this Resit will be reduced to an appropriate level for an individual to complete this work. To this end the resitting student will be identified with a revised design brief with a reduced scope for the the competition and will be asked to report on a reduced scope of technical issues associated with their design.

Assessment components:

Final Project - Component A (First Sit)
Description: Team Design Project
Weighting: 50 %
Final assessment: No
Group work: Yes
Learning outcomes tested: MO1, MO2, MO3

Report - Component A (First Sit)
Description: Group Project Feasibility Report
Weighting: 50 %
Final assessment: Yes
Group work: Yes
Learning outcomes tested: MO2, MO3, MO4, MO5

Final Project - Component A (Resit)
Description: Individual Competition Design (refer Resit Assessment Strategy)
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

Report - Component A (Resit)
Description: Individual report of selected technical issues -3000 Words (refer Resit Assessment Strategy)
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2, MO3, MO4, MO5

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Computational Architecture [Sep][FT][Frenchay][1yr] MSc 2021-22

Computational Architecture [Sep][FT][Frenchay][1yr] MSc 2021-22

Computational Architecture [Sep][PT][Frenchay][2yrs] MSc 2021-22

Computational Architecture [Sep][PT][Frenchay][2yrs] MSc 2021-22