UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title	Advanced Sustainable Research Project
Module Code	CSE6017-B
Academic Year	2024/5
Credits	20
School	School of Built Environment, Architecture & Creative Industries
FHEQ Level	FHEQ Level 6

Contact Hours	
Type	Hours
Directed Study	152
Project Supervision	12
Lectures	6
Supervised time in studio/workshop	30

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 2

Module Aims

The current global sustainability agenda raises the significance of low carbon design supported by momentous bottom up initiatives such as Extinction Rebellion, Global Climate Strikes, etc. Hence, creating low carbon buildings helps to reduce harmful greenhouse gas emissions through more efficient use of resources besides enhancing people's health and wellbeing. The shift towards new design and construction methods plays a crucial role in achieving sustainable strategies throughout the entire building life cycle. We need to collectively achieve thoroughly considered and innovative architectural propositions following a holistic approach to architectural design where space, structure and performance work together to achieve low to zero carbon design. The module aims to

Further explore the role and impact of key environmental systems on low energy building design and performance.

Help students reflect on advanced environmental design strategies that respond to occupants? needs, comfort and improve building energy performance.

Allow students to explore, identify and evaluate the interrelationships between the various environmental mechanisms and address them in a rigorous manner by developing design strategies that deliver comfortable environments for building users.

Provide an opportunity for students to demonstrate their ability to undertake a meaningful study and investigate an Architectural Technology subject, issue, or problem and to produce a usable outcome that can be applied in real life situations.

Develop a depth of knowledge and understanding about research and project development, appropriate to graduate level.

Outline Syllabus

The nature of the design project / research project and its relationship with the Honours degree and Professional Body recognition

An awareness of the technological theories that inform and influence the practice of architectural technology in new and existing buildings

Approaches to research and research methods: Undertaking a literature review, recording, analysing and referencing.

Formulating a research question.

Data collection & research methods, including case study, action research, archival analysis.

Analysis and presentation of data.

Drawing appropriate conclusions.

Managing the research process.

Communication skills: communicate and present ideas and arguments coherently and effectively in spoken and written words as well as other media

Critical thinking skills: reflection, critical thinking, and demonstrating qualities of curiosity and engagement, and a creative and responsible approach.

Prepare a portfolio that is edited, organised and clearly labelled so that it can be evaluated in terms of range, depth, creativity and originality as well as standards of accuracy and skills of execution.

Academic skills to interpret, utilise and communicate complex and interrelated information in a manner that is appropriate, rigorous, creative and legible.

Use digital tools to gather, and present information and to evaluate and communicate the outcomes of their learning.

Learning Outcomes

Outcome Number	Description
01	Illustrate the impact of different energy flow mechanisms that take place within buildings and how they affect its design / retrofit, and operation.
02	Critically reflect on the range of environmental design strategies and consideration of the influences of climate, form and orientation.
03	Articulate design / research proposals that indicate effective environmental design strategies and compliance with building regulations and performance standards.
04	Develop, refine and test their design/research at all stages, demonstrating further experimentation, informed by critical feedback and discussion.
05	Prepare an advanced portfolio / dissertation that is edited, organised and clearly labelled so that it can be evaluated in terms of range, depth, creativity and originality as well as standards of accuracy and skills of execution.

Learning, Teaching and Assessment Strategy

The teaching and learning methods have been selected to engage students in developing their knowledge and understanding of the module through formal learning opportunities such as lectures and experiential learning through practical classes in the design studio and workshops.

Throughout the module, students will be set formative assessment activities that will help develop confidence in tackling data analysis problems and in the use of the software tools that will support them. The timely constructive feedback from this formative assessment will support students develop the skills and knowledge required for the summative assessment.

The module will be summatively assessed through a Design Project Portfolio or Dissertation , through workshops, group and individual tutorials, to continually appraise, evaluate and develop the design / research project.

The design project portfolio option enables students to demonstrate that they have advanced understanding and competent ability to integrate technological, professional and design concepts to develop a detailed design proposal. Learning and teaching is organised around a series of subject-based lectures giving an overview of relevant professional and industry issues, principles of structures, environmental design, materials and construction and sustainability. This knowledge and understanding is tested and developed through individual research and application to the main Design project, resulting in a design proposal resolved to a high degree of detail and described by an illustrated project report. Each student?s progression from principle through application to detailed resolution is supported by group seminars and project tutorials, which inform and test their individual design response. Design work is developed in the studio environment according to set project briefs, through seminars, group and individual tutorials, to continually appraise, evaluate and develop the work. All design work is regularly presented to academics and peers for critical feedback.

Students receive written feedback on their progress after each review as formative assessment, though no marks are formally awarded.

Concerning the dissertation option, this represents the research culmination of each student's development through previous learning undertaken on their course. It provides an opportunity for students to demonstrate their ability to undertake a meaningful study and investigate an Architectural Technology subject, issue, or problem and to produce a usable outcome that can be incorporated into practice. Advice can be offered around choosing a research topic and producing a proposal during a briefing session delivered towards the end of the academic year prior to that in which students undertake their Sustainable Design Project. The research will be carried out under the supervision of an academic member of staff ? however, the early part of the module is also supported by taught classroom sessions. These taught sessions enable students to develop research and study skills in respect of reviewing and analysing literature, developing a research question, collecting, presenting and analysing data, and managing the research process. In addition to the taught sessions, a minimum of six supervision tutorials will take place during the term in which the module is studied. It is each student's responsibility to make contact with their tutor to arrange appointments.

The proposal will identify the subject area, the aims of the study, the rationale for it, and the method statement. Students are also required to identify a minimum of 8 literature sources that will be used. The proposal is to be submitted early in the module, where it must be approved before a tutor is allocated and before students proceed with the research. Where proposals are not approved, students will be advised and required to resubmit the proposal to the required standard. Advice will be provided regarding the writing of the proposal. The research project requires students to demonstrate analytical, deductive, investigative and written communication skills in relation to their chosen subject. Students will deploy a wide range of skills that they have developed during their course, including initiative, self-motivation, time-management, analysis and integration of data and information together with the organisational skills needed for such a piece of work.

If a student requires supplementary assessment for re-assessment, the assessment methods are the same as original.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Coursework - Written	Initial Project Proposal	20%
Summative	Dissertation or Project Report	Dissertation Report (4000-4500 words, plus supporting documentation and appendices) including presentation	80%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:
This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.
