Module Details

Module Title	Digital Architectural Communication 1
Module Code	CSE4007-B
Academic Year	2024/5
Credits	20
School	School of Built Environment, Architecture & Creative Industries
FHEQ Level	FHEQ Level 4

Contact Hours

Type	Hours
Lectures	48
Directed Study	152

Availability

Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims

Computer-Aided Design (CAD) and its spinoffs, with their many features, have become a staple throughout the construction industry and through all phases of the process. Its technological impact has been a game-changer in the industry.

The module aims to:

- Introduce students to the basic principles of 2D and 3D Computer Aided Design (CAD) software to allow them to navigate drawings and apply a range of drawing and presentational skills to an increasing level of sophistication as presented in the assignments and tasks.

- Prepare students for the task of visualising and communicating their work at all stages of its development, and setting their work in relation to the final design project Design.

- Develop a student's repertoire of practical, technical and computer-aided skills that can keep pace with their growing knowledge of the design process.

- Allow students to develop essential skills for using CAD as a means for complementing and enhancing their work on other modules; with these skills being the foundation for students to engage in projects entirely based on digital outputs.

Outline Syllabus
Theory of CAD and applications in the built environment;
Introduction to the software (Interface, Ribbon, Workspace, Help and Command Search, drawing units, pan& zoom tools);
Creating 2D architectural objects (line, circle, etc);
Modifying and manipulating 2D objects (Array, offset, etc);
Drawing Tools (ortho, snap?etc);
Dimensioning and Text Layer, Block and xRef;
Preparing Layout and Plotting;
Presenting 2D drawings (model space and paper space);
Introduction to 3D solid modeling;
Editing and visualizing solids;
Surface Modeling;
Rendering and Presentation;
Digital skills: Use digital tools to gather, and present information and to evaluate and communicate the outcomes of their learning.
Information Technology and Communication skills: communicate ideas and arguments coherently and effectively in spoken and written words as well as in digital media.

Learning Outcomes	
Outcome Number	Description
O1	Identify appropriate computational methods for the description, communication and visualisation of architecture and engineering design problems.
O2	Apply the basic skills required by undertaking 3D modelling and 2D drafting tasks using the CAD programs provided.
O3	Evidence an ability to use the various tools and options available in the software to modify and manipulate existing drawings.
O4	Communicate appropriate drawings using the visualisation options within the software, or available from complementary programs.
O5	Illustrate through computational drawing the integrated study of the technology involved in a simple small-scale building.

Learning, Teaching and Assessment Strategy

The teaching and learning methods have been selected to engage students in developing their knowledge and understanding of Digital Architectural tools and techniques through formal learning opportunities such as lectures and tutorials.

Throughout the module, students will be set formative assessment activities that will help develop confidence in drawing techniques 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 formatively assessed through Individual study activities which will be assessed during tutorial sessions. Feedback and guidance will be given to students on an informal basis. This module is summatively assessed solely by coursework; Individual drafting of a given case study (50%) and a fully integrated 2D/3D model with associated documentation for the design using Revit (50%). The projects require that you implement the tools and techniques introduced within the module by applying them to a building project. Formative feedback will be provided for all activities. This may take the form of question and answer sessions within lectures; through worked examples, design exercises and discussion groups in small group tutorials; through submitting tutorial questions and formative reports for feedback; comments on the tutorial/practical work during the session, the use of the Forum facility on Canvas (for generic feedback).

If a student requires supplementary assessment for re-assessment, the assessment method will be the same as original.

Mode of Assessment

Type	Method	Description	Weighting
Summative	Coursework - Written	Project Drafting of a given case study (4000 words equivalent)	100%

Reading List

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