

Module Details	
Module Title	Construction Technology 3
Module Code	CSE6018-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
Lectures	18
Tutorials	18
Seminars	12
Seminars	<p>?Architectural technology plays a significant part in the project and design management process linked to the building life cycle through the integration of technology and the new world of collaborative working and creating new communities of practice. Architectural technology is critical in the digital age and empirically based design using building information modelling (BIM) relating to production, performance, environmental sustainability, economic efficiency and effectiveness and simulation, standardisation, systemisation, simulation and optimisation.? The module aims to ? Provide students with the tools and techniques (including BIM) to synthesize and evaluate contemporary civil and construction technology. ? Consider construction methods, planning tools / techniques to mobilise the construction activities and supply chain; the selection of construction methods that best suit the project and the management plant, materials and workforce ? Examine the technologies used in modern safe civil /construction projects covering specialist groundworks and substructure elements as well as infrastructure construction and temporary works. ? Scrutinize how the project is monitored to ensure the client?s requirements are met, and how the finished project is brought to a managed and successful close. ?Architectural technology plays a significant part in the project and design management process linked to the building life cycle through the integration of technology and the new world of collaborative working and creating new communities of practice. Architectural technology is critical in the digital age and empirically based design using building information modelling (BIM) relating to production, performance, environmental sustainability, economic efficiency and effectiveness and simulation, standardisation, systemisation, simulation and optimisation.? The module aims to ? Provide students with the tools and techniques (including BIM) to synthesize and evaluate contemporary civil and construction technology. ? Consider construction methods, planning tools / techniques to mobilise the construction activities and supply chain; the selection of construction methods that best suit the project and the management plant, materials and workforce ? Examine the technologies used in modern safe civil /construction projects covering specialist groundworks and substructure elements as well as infrastructure construction and temporary works. ? Scrutinize how the project is monitored to ensure the client?s requirements are met, and how the finished project is brought to a managed and successful close.</p>

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims
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## Outline Syllabus

Selection of construction and civil engineering plant & equipment

Construction safety risk assessment & control methods.

Use of planning tools in planning & programming construction works (phasing & sequencing works / risk assessed method statements & etc) including logistics in the management of plant, materials and workforce

Monitoring and management of construction works, waste, recycling etc and linked KPI's.

Techniques for improvement of poor and contaminated ground conditions.

Permanent and temporary civil engineering structures such as retaining walls, basements, caissons, embankments and cuttings, cofferdams, bridges, tunnels, de-watering, traffic control, and propping.

Building regulations relating to commercial and industrial buildings.

The use of BIM as a tool for coordinating design and production processes.

Awareness of local and global issues (such as inequalities and sustainability) and potential solutions to address those through project work to create positive social impact on the wider society.

Problem solving skills: to have the ability to analyse problems and to propose solutions.

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

Decision making skills: informed by advanced understanding of the wider global issues in the construction industry

Writing skills: produce professional reports in accordance with published conventions and/or client expectations, including executive summaries.

## Learning Outcomes

Outcome Number	Description
01	Evaluate how safe sites are planned and set out to ensure an efficient production process.
02	Explore how construction sites and operations impact on the environment and how this can be managed.
03	Assess the methods available which ensure safe renovation/demolition of buildings.
04	Appreciate compliance with building regulations relating to commercial and industrial buildings including fire regulations relating to means of escape, the provision of fire-resistant materials and finishes, compartmentation and cavity barriers
05	Demonstrate the ability to use a range of planning tools, and to apply them to construction processes including: project planning, use of Gantt charts, the use of BIM and network diagrams

## Learning, Teaching and Assessment Strategy

The teaching and learning methods have been selected to engage students in developing their knowledge and understanding of advanced Construction Technology 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 tackling construction technology 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.

Learning and teaching is organised around a series of subject-based lectures giving an advanced overview of professional and industry issues, principles of structures, environmental design and systems in buildings, materials and construction and sustainability. This knowledge and understanding is tested and developed through individual research and application to the Design Studio 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. Working in parallel with the students' design projects, this module requires substantial individual research and appraisal of relevant information in order to fulfil the assessment criteria. All assessed components require the student to evaluate and critically reflect upon their own work in the context of their peers, current design practice and specialist knowledge appropriate to their work.

The module will be summatively assessed through the submission of a project report and a technical folio (advanced set of technical drawings). 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.

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	Dissertation or Project Report	Case study report including presentation	50%
Summative	Coursework - Portfolio/e-portfolio	Technical Drawings including presentation	50%

### 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.*