UNIVERSITY COLLEGE
OF ESTATE MANAGEMENT

Construction Technology

Module Descriptor

Module Code: CON7TEC

Version: 1.00

Status: Final

Date: 27/02/2025

Approval History

Version	Date	Name	Organisation
1.00	27/02/2025	Approved by revalidation panel	UCEM

Document History

Version	Date	Reason	Person
0.01	23/10/2024	First draft	Karen Clarke
0.02	08/11/2024	Draft for internal scrutiny	Karen Clarke
0.03	27/11/2024	Draft for revalidation	Karen Clarke

Summary Module Details

Module details

Module Title: Construction Technology

Module Leader: Karen Clarke

Module Mode: Supported online learning

Semester: Autumn (UK)

Level: 7

Credits: 20

Learning Hours: 200

Contact & Study Hours

Directed Study Time: 60hrs (30%)

Self-directed Study Time: 70hrs (35%)

Assessment Study Time: 70hrs (35%)

Assessment Type

Coursework: 100%

Computer Marked Assessment: 0%

Self-directed Research Project: 0%

Portfolio: 0%

Module summary

This module develops the principles of construction technology, including modern, innovative and traditional construction. Within the framework of a sustainable built environment, assessment methods and relevant codes and regulations are explored in providing for a sustainable agenda and inclusive design.

Taken on which programmes

MSc Building Surveying (C)

MSc Construction Management (C)

MSc Quantity Surveying (C)

Core (C) or Elective (E)

Module Aims

This module aims to examine:

- Construction principles and technology.
- Innovative building technology principles and methods of construction.
- Sustainability and Inclusive Design in the built environment.

Module Learning Outcomes

LO1. Critically appraise current knowledge and critical understanding of the concepts and principles associated with the building, environment and technology used in construction and be able to present, evaluate and interpret these principles using sketches and drawings.

LO2. Critically evaluate technical arguments in the selection and application of techniques for the design, environmental considerations and construction process to produce traditional and framed buildings and apply and evaluate when and where their selection would be appropriate.

LO3. Critically appraise the appropriateness of innovations, inclusive design, materials, and construction in buildings in accordance with building, environment and technology theory, standards, regulations, and sustainable principles.

LO4. Critically evaluate and communicate on the appropriateness of different approaches on building, environment and technology issues for traditional and framed buildings using coherent structured arguments and analysis to devise solutions.

Indicative Module Content

Module topics

- **Construction**

  This topic introduces the environmental and sustainability impacts and innovative approaches to construction technology. It covers innovative and sustainable materials, products, components and elements that have led to new, more sustainable methods of construction whilst also considering the need to make the asset as inclusive as possible. It questions and evaluates the impact and longer-term consequences for both the construction industry and the built environment.

- **Quality and Performance of Materials**

  This topic focuses on the process to ensure sustainability, safety and accessibility of specifications, quality and performance of materials and products including compliance and performance monitoring, performance standards, product selection and specification.

- **Quality and Performance of Design**

  This topic focuses on the process to ensure sustainability, safety and accessibility of specifications, quality and performance of design including the Royal Institute of British Architects (RIBA) Plan of Work, compliance and performance monitoring, performance standards and specification.

Construction Technology

- **The Construction Technology of Buildings**

  For all the elements below each covers the requirements for in the Building Regulations, their performance, functional requirements, construction and finishes:

  - **Temporary and Substructure Works**

    This topic focuses on temporary, and substructure works, including site investigation, types of foundation and basements and the potential issues during construction.

  - **Structure of the building**

    The topic covers different types of basic wall and floor construction technology; and the options for both external and internal elements. This will include an understanding of the basic structural issues and principles of buildings; typical materials used, the reasons for their use; typical details and sustainability issues.

  - **Framed Structures, Modern Methods of Construction and Cladding to Frames**

    This topic covers concrete frames, steel frames, timber frames, hybrid frames, cladding systems, systems building, on-site and off-site production and reasons for building with modern methods of construction (MMC) from an innovation and sustainability perspective.

  - **Roofs, Floors and Stairs**

    This topic provides an overview of materials, their performance, functional requirements, construction details and finishes of roofing, floor and stair design solutions. The topic covers types and structures and access issues, including more traditional domestic forms of construction, and then moves on to details for commercial and industrial buildings. This also covers the requirements for stairs and ramps in the Building Regulations.

- **Services**

  This topic introduces services for commercial buildings, enabling students to recognise the design of different mechanical and electrical (M&E) systems, internal environment, sources of energy, water supply and sanitation, lifts and escalators, how they operate, and will learn about alternative and more energy-efficient services that are being developed.

- **Fire Safety and Mitigation**

  This topic introduces fire precautions for buildings, including fire safety, fire regulations and fire protection measures, and students are encouraged to refer to their own country's fire regulations.

This content will be reviewed and updated regularly to reflect the legal, moral and financial changes in professional standards and practice.

Overview of Summative Assessment

Module learning outcomes	Assessment	Word count or equivalent	Weighting
LO1	**Assessment 1** Coursework	1,000	20%
LO2, LO3, LO4	**Assessment 2** Coursework	4,000	80%

Module Pass Mark (as a weighted average of all assessments): 50%

Key Module Learning Resources

Core sources and texts

The core reading resources within each module will be provided via the specific Virtual Learning Environment (VLE) module pages and within the e-Library. Additional reference material and supplementary resources to support your studies are available through the UCEM e-Library.

Module tools

Students will have access to study materials, dedicated academic support, student forums, and learning activities via an online learning platform (VLE).

The module page on the VLE is broken down into structured study weeks to help students plan their time, with each week containing a mixture of reading, case studies, videos/recordings and interactive activities to go through. Online webinars/seminars led by the Module Leader can be attended in real time and provide opportunities to consolidate knowledge, ask questions, discuss topics and work through learning activities together. These sessions are recorded to support students who cannot attend and to enable students to recap the session and work through it at their own pace. Module forums on the VLE provide further opportunities to discuss topics with other students, complete collaborative work and get extra help from the module team.

Professional online resources

The e-Library provides access to trusted, quality online resources, selected by subject specialists, to support students' study. This includes journals, industry publications, magazines, academic books and a dissertation/work-based library. For a list of the key industry specific and education resources available please visit the VLE e-Library.

Other relevant resources

Access is also provided to further information sources that include the British Library and Open University UK catalogues, as well as providing a monthly current awareness service entitled, ***Knowledge Foundations*** - a compendium of news, research and resources relating to the educational sector and the Built Environment.

The module resource list is available on the module website and is updated regularly to ensure materials are relevant and current.