Liverpool John Moores University

Title:	BUILDING TECHNOLOGY AND DESIGN
Status:	Definitive
Code:	**4502ICBTQS** (126944)
Version Start Date:	01-08-2021
Owning School/Faculty:	Civil Engineering and Built Environment
Teaching School/Faculty:	ICBT, Colombo

Team	Leader
Alison Cotgrave	Y

Academic Level:	FHEQ4	**Credit Value:**	15	**Total Delivered Hours:**	67
Total Learning Hours:	150	**Private Study:**	83		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	45
Tutorial	20

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Assignment (1500 Words)	30	
Exam	AS2	Examination	70	2

Aims

Aim(s) of the module is to introduce modern building construction technology, forms of buildings structures, building structural element design, internal special planning, finishing & related services and to demonstrate an understanding of environmental friendly building design principles to meet regulatory standards. This module focuses on the technology of low-rise & multi-storey residential, commercial & institutional buildings designed for both private and public use.

Learning Outcomes

After completing the module the student should be able to:

1	Identify the technology of various types of buildings, form of substructures & superstructures, principles of building structural element planning & designing and Identify & understand essential building services, and space requirements of various type of building.
2	Examine the principles of spatial planning to achieve basic functional requirements of various type of buildings and assess methods and techniques of external works of all types of buildings & landscaping work in building sites.
3	Recognise specifications and standards for building works, structural designing and building services of various type of building, and Apply various legislative requirements for internal spatial planning and design development requirements of local authorities & regulatory bodies.
4	Demonstrate knowledge on sustainability design principles and its applications on various types of buildings to achieve environmentally friendly and low energy design according to national & international standards.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Coursework	2	3	4
Examination	1		

Outline Syllabus

Note: Tutor must address below indicative content applies to various type of buildings such as low-rise & multi-storey residential/commercial & institutional buildings designed for both private and public use;

Site evaluation and investigation for subs-structural arrangements and foundation design
Foundation types: Shallow type (Isolated pad, Strip pad, Strap & Raft) and Deep types of foundations (Friction, End-bearing and In-situ piling work & piers)
Steel form of structures: Introduction to concrete structural elements (e.g. 'I', 'H', 'L' & 'Channel sections) & Connections (e.g. Simple & Moment Resistant connections)
Concrete form of structures: Introduction to concrete structural elements (e.g. Concrete beams, columns, slab systems, flooring and sheer walls)
Introduction to effects of seismic forces and seismic resistance design of building elements
Components of services: HVAC, Electrical systems and distribution, Mechanical transportation, Fire safety, Disposal systems (Sanitary & Solid waste)
Building service integration & commission
Legal requirements of internal spatial planning: ventilation, building partitioning, suspended ceilings & raised floors
QA & QS of Building works

Introduction to Standard material specifications (BS Codes/ Euro Code)
'Neufert' standards of internal space planning
Factories ordinance and internal space requirement
Statutory legislative requirements for building planning, design, internal spatial planning, site development and disability access (Local & international)
Building external works: Installation of exterior glazing & claddings, access road, landscape work (Hard & Soft)
Landscape design: Basic principles of Softscape and Hardscape
Eco-friendly & low energy building designs, environmental systems and controls
LEED green rating system: Introduction to green rating criteria's

Learning Activities

Students will be supported in their learning, to achieve the above learning outcomes, in the following ways:

By a series of lectures and theoretical approach to identify structural design principles & essential buildings service installations and Total Quality Management of building works of various type of buildings.
In-class practical sessions and tutorials to familiarize various techniques & methods to apply standards & code of practices for various building works, structural designing, buildings services and external works of building construction.
Self-managed studies to examine application of various statutory legislative requirements of building design, site & internal spatial planning and sustainable design principles & its applications.
Building construction technology, building services technology, sustainable design technology and legislative recruitments of building planning & construction are some key features of this module.
A recommended resource list - indicating key reading, virtual and physical learning assistance, is provided to help enable students to undertake self-directed study.

Notes

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