

Liverpool John Moores University

Title: CIVIL ENGINEERING CONSTRUCTION TECHNOLOGY
Status: Definitive
Code: **4502ICBTCE** (126961)
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: 62
Total Learning Hours: 150
Private Study: 88

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	39
Off Site	8
Seminar	6
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Essay 1500 Words	30	
Exam	AS2	Written Examination (Closed Book)	70	3

Aims

This unit enables learners to develop an understanding of the methods and techniques used to create civil engineering structures, and to develop the skills needed to solve problems associated with civil engineering activities. Learners will also develop an understanding of successful integration of building services

engineering applications into complex civil engineering structures.

Learning Outcomes

After completing the module the student should be able to:

- 1 Identify the methods and techniques used in earthwork activities.
- 2 Assess bearing capacity (allowable bearing capacity), settlement calculation, foundations in different soil types.
- 3 Apply the methods and techniques used to create substructures and superstructures.
- 4 Demonstrate the implications for integrating building services into civil engineering structures.

Learning Outcomes of Assessments

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

Essay	1	2	3	4
Written Examination	1	2	3	4

Outline Syllabus

Construction methods sequences and resources used in civil engineering, building and building services activities; site layouts, traffic and waste management planning. Earthworks activities methods sequences and resources used in civil engineering: Construction methods used earthworks, piling, drainage works, ground stabilization, false work and formwork.

Shallow foundations: foundation types, bearing capacity (allowable bearing capacity), settlement calculation, foundations in different soil types, Terzaghi's & Meyerhof Analysis.

Deep foundations: pile types, single pile, pile groups, settlement calculation.

Substructures: foundations, piling works, drainage works, culverts, underpasses, provision of utilities and service ducts.

Superstructures: bridges, industrial and commercial buildings, large span open plan structures.

Construction methods: reinforced concrete, formwork and false work, structural steelwork.

Latest Technologies used in Super structure sub structure construction.

Factors affecting human comfort: thermal comfort (air temperature, mean radiant temperature, air velocity, relative humidity). Lighting comfort (natural light, artificial light, minimum levels of illumination, glare). Acoustic comfort (sound transmission, sound absorption, sound insulation, reverberation).

Building services: cold/hot water supply and distribution, drainage and water removal, electricity supply and distribution, safe and effective disposal of waste products, refrigeration and air conditioning, escalators, passenger lifts, goods lifts.

Design and use of civil engineering structures: physical size, shape and weight of equipment, structural considerations to accept services, e.g. lift shafts, service ducts,

fire breaks, expansion and contraction, vibration from machinery and plant/equipment, structural integrity and discontinuity.

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 work of buildings & essential buildings service installations of various type of buildings.

In-class practical sessions and tutorials to familiarize various techniques, new technologies & methods to apply standards & code of practices for various building works, planning of activities.

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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