Subject Description Form

Subject Code	CSE39399
Subject Title	Introduction to Construction Technology and Management
Credit Value	2
Level	3
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	To introduce the commonly used construction methods and plants in civil and building engineering. It also introduces the basic concepts of construction management.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. Explain the role a construction project manager plays in the civil and building engineering profession. b. Familiarise with construction equipment and plants commonly used on construction sites. c. Understand the advantages and disadvantages of different construction methods applied in different construction processes and make correct choices when having to choose between them. d. Apply the principles of organization in general to design organization charts of the head-office and sites of a construction organization and define their respective tasks and duties. e. Compare the different types of contracts used in civil and building engineering. f. Apply the critical path method to produce work schedules and bar charts, and to settle disputes on extension of time of a contract. g. Prepare technical reports and present the information in a way understandable to non-experts.
Subject Synopsis/ Indicative Syllabus	**A. Overview of construction project development process** Construction project development process, stakeholders in construction project development **B. Engineering drawings** Drawings used on construction projects, symbols used, plan, elevation, section and isometric view **C. Construction methods** Site formation, shallow foundation, deep foundation, concrete construction, steel construction **D. Construction Plant** Grab, dragline, backhoe, face shovel, bulldozer, grader,

loader, scraper, compactors, pile driving hammer, auger drill, , lifting machines – hoist, crane, gantry, rock drilling, blasting equipment

E. Temporary Works

Scaffolding – various types of scaffolding systems
Formwork – concrete formwork system to wall, column and slab and load analysis.

F. Organization

Theory of organization, organizational structures of contractors' and consultants' head offices and sites

G. Construction Contracts

Types of construction contracts, parties to a contract, responsibilities of the Engineer and the Contractor, contract documents, tendering

H. Critical path method and work programming

Activity-on-node (precedence) networks, tracing critical path, critical path and bar chart.

Teaching/Learning Methodology

Lectures and tutorials are the main components of Teaching and learning methods for this subject. There will be about 19 hours of lectures and 7 hours of tutorials, making a total of 26 class contact hours. Coursework (take-home assignments) and tests (conducted during classes) will be given to consolidate the knowledge gained by the students.

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)							
		a	b	c	d	e	f	g	h
1.Continuous Assessment	30%		√		√	√	√	√	√
2. Examination	70%	√	√	√	√	√	√	√	
Total	100 %	√	√	√	√	√	√	√	√

Students must pass the final examination and achieve a passing overall score/ grade to pass the subject.

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

The students will be assessed by two components: continuous assessment (including assignments, in-class quizzes, and a mid-term test). Regarding the continuous assessment, assignments are intended to provide a timely assessment of the lecture contents, and all the assignments need to be completed and submitted on time.

	The assignments are designed to achieve the learning outcomes a, b, c, d, e, f, g. The final examination provides an assessment of the students' learning in the lectures and the tutorials, where all the learning outcomes, except g, will be assessed.	
Student Study Effort Expected	Class contact:	Average hours per week
	▪ Lecture / Tutorial	2 Hrs.
	Other student study effort:	
	▪ Reading and studying	2.92 Hrs.
	▪ Completion of Assignments	1.85 Hrs.
	Total student study effort	6.77 Hrs.
Reading List and References	Robert Peurifoy, Clifford Schexnayder, Robert Schmitt, Aviad Shapira, Aaron Cohen, Construction Planning, Equipment, and Methods, 10th Edition, McGraw Hill, 2023. Stephens W. Nunnally, Construction Methods and Management, 8th Edition, Pearson, 2019. Other teaching materials provided by the instructor.	