

Subject Code	CSE28300
Subject Title	Construction Technology and Temporary Works
Credit Value	3
Level	2
Pre-requisite / Co-requisite/ Exclusion	Exclusion: CSE29300 Construction Technology and Temporary Works
Objectives	<p>(1) To enable students to acquire basic knowledge in temporary work design and construction technology;</p> <p>(2) To introduce students to various construction techniques and methods;</p> <p>(3) To enable students to make engineering judgment on temporary work construction.</p>
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> acquire basic concepts of various construction technologies for buildings and bridges; carry out practical design of temporary works for excavations, buildings and retaining structures; appreciate the development of various construction technologies and the merits and constraints of these technologies.
Subject Synopsis/ Indicative Syllabus	<ol style="list-style-type: none"> <u>Steel Construction Technology</u> Structural systems, fabrication, handling, erection and fire protection of steel structures. <u>Concrete Construction Technology and Design of Formwork Systems</u> Structural systems, concrete pressure during concreting and design of steel and timber formwork systems for reinforced concrete columns, walls, beams and slabs. <u>Design of Retaining Wall Systems</u> Design of free-cantilever sheet pile walls, design of multi-level strutted/anchored sheet piles, and design of shoring systems for deep excavation. <u>Precast Concrete Construction Technology</u> Production, handling and erection procedures of precast concrete construction for buildings. <u>Pre-stressed Concrete Construction Technology</u> Basic concept of prestressing and construction procedure of prestressed concrete buildings.
Teaching/Learning Methodology	<p>Fundamental knowledge will be covered in lectures. Tutorials will provide opportunities for discussion of lecture materials and will also be conducted in the form of example class and problem-solving session to supplement understanding from lectures. Students will also conduct a project to apply the learned knowledge in lectures.</p>

Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed		
			a	b	c
	1. Assignments	15	✓	✓	✓
	2. Project / visit reports	15	✓	✓	✓
	3. Final Examination	70	✓	✓	✓
Total	100				
<p>Students must attain at least grade D in both coursework and final examination (whenever applicable) in order to attain a passing grade in the overall result.</p> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>The students will be assessed with three components, i.e., the tutorial session and assignment, a project report and a final examination at the end of the semester. The students will be required to attend tutorial sessions and submit in-class assignments. These tutorial sessions will enable students to acquire basic techniques and problem solving. The works in the tutorial sessions are closely related to temporary works and construction technologies for civil engineering projects. Students will have to exert engineering judgments to complete the tutorial sessions. The tutorial sessions together with the take-home assignments are best to achieve intended learning outcomes a, b, c and d. The project assignment will emphasize on demanding students to apply the learned basic concept and current practices of construction techniques and methods. It is appropriate to achieve intended learning outcomes a, b, c and d. The final examination will consolidate students' learning in lectures and tutorials. It is most appropriate to achieve the intended learning outcomes a, b, c and d.</p>					
Student Study Effort Expected			Average hours per week		
	Class contact:				
	▪ Lectures/ Tutorials / Site visits		3 Hrs.		
	Other student study effort:				
	▪ Reading and studying		3 Hrs.		
	▪ Completion of Assignments		3 Hrs.		
	Total student study effort		9 Hrs.		
Reading List and References	<p>Ambrose, and James, E., <i>Simplified Engineering for Architects and Builders</i>, Wiley, 2011.</p> <p>Clear, C.A. and Harrison, T.A., <i>Concrete Pressure on Formwork</i>, C.A., CIRIA, Report 108.</p> <p>Concrete Society Formwork: <i>A Guide to Good Practice</i>.</p>				

	<p>Levitt, M., <i>Precast Concrete: Materials, Manufacture, Properties and Usage</i>, Taylor and Francis, 2008.</p>
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	<p>Mehta, and Madan, <i>Building Construction Principles, Materials and System</i>, Pearson/prentice Hall, 2008.</p>
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