

Subject Description Form

Subject Code	CSE375
Subject Title	Construction Safety
Credit Value	3
Level	3
Pre-requisite / Co-requisite/ Exclusion	Pre-requisite: CSE376
Objectives	This subject aims to help students understand the principles of local legislation concerning construction safety and gain skills in hazards identification and knowledge about standards of international good practices for control of risks in the construction process.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. demonstrate a basic knowledge of the typical construction site organisation, key construction processes and the critical issues affecting construction safety in Hong Kong; b. identify and assess safety and health hazards common on construction sites and to recommend control measures with respect to legal requirements, reasonable and practical practice and cost consideration; c. provide professional judgement and knowledge on safety and health in assisting the site management in the development of method statement of construction processes; d. identify key factors contributing to safety and health in construction industry in view of the sub-contracting systems, rapid changing site conditions, complexity nature of work and legal requirements; e. identify local and international trends in safety management in construction industry. f. recognize the need for, and to engage in life-long learning.
Subject Synopsis/ Indicative Syllabus	<ol style="list-style-type: none"> 1. <u>Introduction</u> Overview of the structure of construction industry in Hong Kong. Review of safety performance in Hong Kong's construction industry. Introduction of occupational safety and related construction safety legislation. Factors affecting accident rates in construction industry. Construction site layout and organization. General hazards of construction. 2. <u>Working at height; Scaffolds and Falsework</u> Common types of scaffolds, working platforms and falsework used in construction sites. Main hazards associated with works on scaffolds, working platform and falsework. Safety considerations in design, construction and maintenance of scaffolds and falsework. Associated statutory regulations. 3. <u>Cranes, Hoists and Builder's Lift</u> Common types of cranes, hoists and builder's lift used in construction activities. Main hazards associated with operation of cranes and hoists. Safe use of cranes, hoists and builder's lift. Associated statutory regulations.

	<p>4. <u>Transport and Mobile Plants</u> Types of transports and mobile plants used on construction site. Main hazards associated with transports and mobile plants. Site transport planning. Associated statutory regulations.</p> <p>5. <u>Earthwork and Excavation and Tunneling</u> Introduction of soil types and earthwork in Hong Kong. Main hazards associated with excavation and slope work. Safety precautions and earth supporting systems in excavation. Principal hazards in slope and tunneling work. Associated statutory regulations.</p> <p>6. <u>Demolition and Dismantling</u> Demolition method statement planning. Pre-survey inspection of the structure to be demolished. Methods of demolition. Main hazards associated with demolition and dismantling.</p> <p>7. <u>Occupational Health Hazards</u> Common types of occupational health hazards in construction industry in Hong Kong: chemical, physical and biological; associated statutory regulations.</p> <p>8. <u>Construction Safety Management</u> Review of the industrial safety management strategy of the Government of HKSAR. Legal and contractual requirements on safety in local construction projects. Safety management systems of local contractors. Training for different vocational groups in construction. Trends of construction safety management in difference countries, such as design for safety in various project stages.</p>							
Teaching/Learning Methodology	Students will be required to relate the lectured materials with real problems. Through case studies and exercises, students will analyze the causes of accidents, carry out job hazard analysis and risk assessment, and develop method statements for construction activities. Students will work in groups and share their observation through interactive discussions. Site visit will be arranged to appreciate the real construction processes and site safety practices.							
Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks	% Weighting	Intended subject learning outcomes to be assessed					
	1. Seminar Report/ Case Studies	25	√	√	√	√		√
	2. Presentation/ Group Project	15	√	√	√		√	
	3. Final Examination	60	√	√	√	√		

	Total	100	
	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>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>Wide range of real construction projects and accident cases are used in the assignments which test the student's general knowledge in hazard identification and application of regulations in construction safety. The coverage of the questions in the examination will embrace most of the syllabus and be set to align with all the intended learning outcomes.</p>		
Student Study Effort Expected	Class contact:		Average hours per week
	▪ Lectures / Laboratory/ Tutorials		3 Hrs.
	Other student study effort:		
	▪ Coursework		3 Hrs.
	▪ Self Study		3 Hrs.
	Total student study effort		9 Hrs.

<p>Reading List and References</p>	<p>Essential Textbook:</p> <p>Davies V. J. and Tomasin, K. (1996). <i>Construction Safety Handbook</i>. London: Thomas Telford.</p> <p>Reference Textbooks:</p> <p>Lingard, H. and Rowlinson, S. (2005). <i>Occupational Health & Safety in Construction Project Management</i>. London: Spon Press.</p> <p>Rowlinson, S. M. (2003). <i>Hong Kong Construction: Site Safety Management and the Law</i>. (2nd Edition). Hong Kong: Sweet & Maxwell Asia.</p> <p>Lee, H. K. (2021). <i>Construction Safety</i>. Hong Kong: City University of Hong Kong Press.</p> <p>Construction Industry Council (2008). <i>Guidelines on Safety of Site Vehicles and Mobile Plant</i>. https://www.cic.hk/files/page/50/Site Vehicales and Mobile Plant .pdf</p> <p>Development Bureau (2022). <i>Construction Site Safety Manual</i>. https://www.devb.gov.hk/en/publications_and_press_releases/publications/construction_site_safety_manual/index.html</p> <p>Development Bureau (2024). <i>Contractor Management Handbook</i>. https://www.devb.gov.hk/en/construction_sector_matters/contractors/contractor_management_handbook/index.html</p>
---	--