

Occupational Health & Safety

Course Code OHS-101	Credit Hours 1-0
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Course Description

In this course students will acquire knowledge of safe work practices applicable to office, industry and construction settings. Additionally, they will learn how to identify, prevent and address issues related to occupational safety and health, not only within professional environments but also in domestic settings.

Text Book:

1. Hinze, J. W. (2000). Construction Safety. Prentice Hall, Upper Saddle River, New Jersey.
2. Lingard, H. and Rowlinson, S. (2005). Occupational Health and Safety in Construction Project Management.
3. Levit, R. E. and Samelson, N. M. (2003). Construction Safety Management.
4. Reese, C. D and Eidson, J. V. (1999). OSHA Construction Safety and Health. Lewis Publishers.

Reference Book:

1. Peurifoy, R.L. and Schexnayder, C. J. (2007). Construction Planning, Equipment, and Methods. 7th Edition. McGraw-Hill Companies, Inc.
2. British Standards Institutions (2000). Occupational Health and Safety Management system: Guidelines for the Implementation of OHSAS 18001. Publication No. BSI-02-2000, London.
3. Barrie and Paulson. (1992). Professional Construction Management: Including C.M, Design-Construct, and General Contracting. McGraw-Hill.
4. Griffith, A and Watson, P. (2004). Construction Management: Principles and Practices. Palgrave MacMillan, NY.
5. Levy, M. Sidney. (2000). Project Management in Construction. McGraw-Hill.
6. Rowlinson, S. (2003). Hong Kong Construction – Safety Management and the Law. Sweet & Maxwell Asia, Hong Kong.

Prerequisites :

Nil.

Assessment System for Theory

	Without Project (%)	With Project/Complex Engineering Problems (%)
Quizzes	15	10-15
Assignments	10	5-10
Mid Terms	25	25
Project	-	5-10
End Semester Exam	50	45-50

Teaching Plan

Theory:

<u>Week</u>	<u>Topic Covered</u>		<u>Reading Assignment/ Home Work</u>		<u>CLO No</u>	<u>Assessment Methodology</u>
1	Occupational health and safety.				1	Assignments, Quizzes,MSE, CEP, OEL & ESE
	<ul style="list-style-type: none">Nature and scope. Fostering safety culture by building positive attitude towards safety. Four principles of safety – RAMP (recognize, assess, minimize, prepare).	(Ref 1)				
	<ul style="list-style-type: none">Reasons, benefits and barriers in implementing good health and safety practices. Investment in safety. Safety incentives. Safety and health audits. Safety ethics and rules.	(Ref 1, 2)	Assignment 1			
2	<ul style="list-style-type: none">Accident and injury. Types of injuries. Chemical burn and fire injuries. Construction injuries. Injury statistics. Causes of accidents.	(Ref 1, 2)	Quiz 1			
3	<ul style="list-style-type: none">Cost of construction accidents / incidents.	(Ref 1, 2)	Assignment 2			
	<ul style="list-style-type: none">Direct & indirect costs of injuries. Time lost.	(Ref 1, 2)	Quiz 2			
	<ul style="list-style-type: none">Workers' compensation.	(Ref 1, 2)				
4 - 5	Construction safety and health management program.				2	
	<ul style="list-style-type: none">Toolbox talks. Safety meetings. Safety drills / training.	(Ref 2)	Assignment 3			
	<ul style="list-style-type: none">Reasons for a comprehensive safety program.	(Ref 2)	Quiz 3			
	<ul style="list-style-type: none">Elements of a health & safety	(Ref 2)				

	program, and its evaluation. Preparation of Safety Management Plan.			
6	Rethinking safety.			2
	<ul style="list-style-type: none"> Learning from incidents. Types of hazards. Hazard identification. 	(Ref 2)		
	<ul style="list-style-type: none"> Record keeping and reporting. Accident investigation significance. 	(Ref 2)	Assignment 4	
	Accident investigation and prevention techniques. Accident data analysis.	(Ref 2)	Quiz 4	
7 - 8	Risk and hazards analysis.			3
	<ul style="list-style-type: none"> Principles of risk prevention. Risk assessment procedure. Risk estimation and acceptability criteria. Selection of appropriate risk control. Fire hazards. Emergency response procedure. Working in confined spaces. 	(Ref 2, 3)		
	<ul style="list-style-type: none"> Job-site safety. 	(Ref 2, 3)		
	<ul style="list-style-type: none"> Monitoring and review. Accountability. Safety policy. Company policies and procedures. Safety signs and marking. Housekeeping. Material safety data sheet. Parking facilities and site access. Safe driving rules. Site security. Checking in and out. First aid. Provision of drinking water and hygienic sanitary facilities. Safe operating procedures (SOPs). 		Assignment 5	
	<ul style="list-style-type: none"> Assuring a safe and healthy workplace. Safety responsibilities of stakeholders including supervisors (foremen), middle managers (superintendents) and top managers. 		Quiz 5	
9	Mid Semester Exam			
10-12	Introduction and use of Personal Protective Equipment.			1

	<ul style="list-style-type: none"> Construction standards. Occupational Safety and Health Act, 1970. OSHA Standards and Subparts A to Z. OSHA compliance. 	(Ref 4)			
	<ul style="list-style-type: none"> Safety, Health and Environmental (SH&E) Management System. The UK Health and Safety at Work Act 1974. The Construction Design and Management (CDM) Regulations 1994. Safety and Health under CDM Regulations. WHMIS. 	(Ref 2, 4)			
	<ul style="list-style-type: none"> Workplace stress, its sources and measurement. Human reaction to stress. Shift work and stress. Reducing stress to improve safety. Workers' rights and responsibilities. 				
13-14	Safety in construction contracts.	(Ref 3)		2	
	<ul style="list-style-type: none"> Compliance with existing laws and regulations on safety. Contractor's safety program. 	(Ref 2)	Assignment 6		
	<ul style="list-style-type: none"> Safety performance reports to the owner. Emergency Plan for evacuation. Responsibilities of safety manager, safety officer, safety advisor and project manager. 		Quiz 6		
	<ul style="list-style-type: none"> Owners, designers, contractors and subcontractors involvement in construction site safety. 				
	<ul style="list-style-type: none"> Subcontractor safety in the selection process on large projects. Influence of general contractors on subcontractors safety on medium sized projects. Selecting safe contractors. 	(Ref 2)	OEL		
15	Designing for safety. Design decisions affecting construction safety.			3	
	ICT in Health and Well-being:-				

	<ul style="list-style-type: none"> Health and fitness tracking devices and applications (Google Fit, Samsung Health, Apple Health, Xiaomi Mi Band, RunKeeper, etc) 	Lecture/Notes			
	<ul style="list-style-type: none"> Telemedicine and online health consultations (OLADOC, Sehat Kahani, Marham, etc.) 	Lecture/Notes			
16	Term Paper – Health & Safety Management Plan including presentations		CEP (Submission)		
17-18	End Semester Exam				

Practical: Nil