CEM-836 Construction Management

Code	Credit Hours	Category
CEM-836	3	Elective

Course Description:

This course aims to give students a broad introduction to the subject of safety management in construction. Students will become familiar with risks and hazards, SOPs of construction methods and techniques, and safety management systems. The course covers topics such as accident causation theories, construction safety programs, hazard analysis, accident prevention techniques, personal protective equipment, job site safety, construction standards, OSHA compliance, safety in construction contracts, subcontractor safety, owner involvement in construction safety, designer involvement in construction safety, and SH&E management systems. Practical/project/research work involves applying these concepts to real-world construction projects to ensure safety and health in the construction industry.

Text Book:

- Ronald W. Woodhead& Daniel W. Halpin, Construction Management, John Wiley & Sons, 1997.

Reference Books:

- Hinze, J. W. (2000). Construction Safety. Prentice Hall, Upper Saddle River, New Jersey.
- Lingard, H. and Rowlinson, S. (2005). Occupational Health and Safety in Construction Project Management.
- Levit, R. E. and Samelson, N. M. (2003). Construction Safety Management.
- Reese, C. D and Eidson, J. V. (1999). OSHA Construction Safety and Health. Lewis Publishers.
- British Standards Institutions (2000). Occupational Health and Safety Management system: Guidelines for the Implementation of OHSAS 18001. Publication No. BSI-02-2000, London.
- Peurifoy, R.L. and Schexnayder, C. J. (2007). Construction Planning, Equipment, and Methods. 7th Edition. McGraw-Hill Companies, Inc.
- Barrie and Paulson. (1992). Professional Construction Management: Including C.M, Design-Construct, and General Contracting. McGraw-Hill.
- Griffith, A and Watson, P. (2004). Construction Management: Principles and Practices. Palgrave MacMillan, NY.
- Levy, M. Sidney. (2000). Project Management in Construction. McGraw-Hill.
- Rowlinson, S. (2003). Hong Kong Construction – Safety Management and the Law. Sweet & Maxwell Asia, Hong Kong.

Prerequisites:

- BE (Civil, Architecture, Construction Engineering & Management)

Assessment System

Component	Percentage Range
Quizzes	10-15%
Assignments	10-15%
Mid Terms	20-30%
ESE	40-50%
Project (optional)	10-15%

Teaching Plan:

Week No	Topic	Learning Outcomes
1	Introduction	Understand what constitutes an accident, construction industry injury statistics, and theories of accident causation.
2	Cost of Construction Accidents / Incidents	Learn about the direct and indirect costs of injuries, workers' compensation, and investment in safety.
3	Construction Safety Programs	Understand the reasons for a comprehensive safety program, building a safety and health program, and elements of a safety program.
4	Analyzing Construction Hazards and Accidents/Incidents	Learn about worksite hazard analysis, accident/incident analysis, job safety analysis, and hazard analysis.
5	Construction Accident Prevention Techniques	Understand safety and health management, toolbox talks, training, hazard identification, and safe operating procedures.
6	Personal Protective Equipment	Learn about various types of personal protective equipment and their standards.
7	Job Site Safety	Understand job site safety assessment, safety policy, responsibility and accountability, company policies and procedures.

8	Construction Standards	Learn about the Occupational Safety and Health Act, 1970, and various OSHA subparts and standards.
9	**Mid Term Exam/ OHT, (As per NUST Exam Policy)**	
10	OSHA compliance	Understand employers' responsibilities, workers' rights and responsibilities, and assuring a safe and healthy workplace.
11	Safety in Construction Contracts	Learn about compliance with existing laws and regulations on safety, contractor's safety program, and safety performance reports.
12	Subcontractor Safety	Understand subcontractor safety in the selection process, influence of general contractors on subcontractor safety, and subcontractor safety on various sized projects.
13-14	Owners and Construction Safety	Learn about owner involvement in construction safety, selecting safe contractors, and owner involvement in site safety.
15	Designer and Construction Safety	Understand designing for safety, design decisions that affect construction safety, and the role of construction managers in safety.
16	Safety, Health and Environmental Management System	Learn about SH&E management systems, UK Health and Safety at Work Act 1974, CDM Regulations 1994, and OHSAS 180001.
17	Practical/project/research work	Develop a term paper on a topic of practical importance related to construction management.
18	**ESE**	