



CE 467 – Quality and Safety Management in Construction

Code and Name: CE 467 – Quality and Safety Management in Construction

Credit Hours: 3 (Lecture: 3, Tutorial: 1)

Textbook:

- Construction safety and the OSHA Standards, David L. Goetsch, 2nd Edition, Pearson, 2017

Other References:

- *Strategic Safety Management in Construction and Engineering*; Patrick X. W. Zou, Riza Yosia Sunindijo, Wiley, 2015

- *Quality Management in Construction*, Abdul Razzak Rumane, 2nd Edition, CRC Press, 2017.

Course Description:

Introduction to quality management, Quality Standards, Development and implementation of quality management systems, quality indicators, quality audits, Importance of construction safety, safety culture, health and safety hazards, personal protective equipment, OSHA Standards, new trends in safety and safety. Accidents Causation Theories, Ethics in Safety and OSHA compliance. Construction Equipment and Safety, Accident Investigation, Reporting and Record Keeping, Emergency Response plan, Total Safety Management. Preventing violence in workplace, stress and behaviour based safety, Promoting safety.

Pre-requisites: CE461 Construction Engineering and Management

Co-requisites: None

Course Learning Outcomes:

With relation to ABET Student Outcomes (From Fall 2019-SOs: 1-7)

1. To recognize ethical and professional responsibilities in quality and safety situations related to codes and standards, the semester project, and response to issues in the course. (4)
2. To identify, formulate, and solve complex engineering problems in quality and safety including quality assurance and quality control, quality management systems, and cost of accidents, hazard analysis, OSHA standards, and safety management systems. (1)
3. To analyze and apply quality and safety standards and safe practices, in civil engineering projects. (2)
4. Demonstrate communication skills in both oral and written during the semester project presentation (3)
5. To acquire and apply new knowledge with emphasis on quality issues, safety programs and their application. (7)

Topics to be covered:

- Introduction to Quality, Quality Management Theories, Cost of Quality
- Quality Assurance and Quality Control, Principles of Total Quality Management
- Introduction to Quality Standards, QMS (ISO 9000), EMS (ISO 14000) and their Benefits
- Introduction to Quality Standards, OSHA (ISO 18000) and their Benefits
- Concept of Quality in Construction, Project Quality Plan (PQP)
- Introduction to Safety, Cost of Accidents, Role of Construction Personal in Safety and Health
- Accidents Causation Theories, Ethics in Safety and OSHA compliance
- Construction safety and health: Program and Policies, Job Hazard Analysis (JHA)
- Construction Equipment and Safety
- Accident Investigation, Reporting and Record Keeping, Emergency Response plan
- OSHA's Construction standards and related safety practices (Selected Subparts A-Z)
- Preventing violence in workplace, stress and behavior based safety, Promoting safety

Grading Policy:

The grading for the course is 60% coursework and 40% Final Exam. The course work consists of two Midterm Exams, where each midterm exam is worth 20%. The remaining 20% includes quizzes, and projects that the course instructor can modify.

