

Construction & Building Engineering Courses (CB)

Construction Management Courses Group

CB 413 – Quality Control in Construction

COURSE INFORMATION

Course Title: Quality Control in Construction

Code: CB 413

Hours: Lecture – 2 Hrs. Tutorial – 2 Hrs. Credit –3.

Prerequisite: BA 329

GRADING

Class Performance/Attendance: 10%

Midterm # 1/Assignments – (7th Week): 30%

Midterm # 2/Assignments – (12th Week): 20%

Final Exam: 40%

COURSE DESCRIPTION

Introduction to quality. Quality improvement techniques. Control charts for variables. In addition, the evaluation of strength test results of concrete, variation and analysis is presented. Quality assurance. Quality systems; ISO 9000 series. Total quality management.

TEXT BOOK

Quality Control 8th edition, by BESTERERFIELD, DALE. Publisher: Pearson Education, Inc., Pearson Prentice Hall, Upper Saddle River, NJ USA, 2008.

REFERENCE BOOKS

Quality Improvement Techniques in Construction,” by McCabe, S. Publisher: Addison Wesley Longman limited, Edinburgh Gate, England 1998

Modern Construction Management by McCaffer, R., Harris, F. and Edum-Fotwe, F. Publisher: 2004

Quality Management in Construction by Thorpe, Brian and Sumner, Peter Publisher: Gower Publishing, UK, 2005.

Engineering Quality in Construction: Partnering and TQM by Kubal, M.T. Publisher: McGraw Hill Inc., New York, 1994

Quality Control, by Besterfield, D.M. Publisher: ,” Prentice Hall, Englewood Cliffs, USA 1994.

Evaluation of strength test results of concrete, by ACI Committee 214, Publisher: 214R-02, American Concrete Institute, Detroit, MI, USA, 2002.

COURSE AIM

The course aims at introducing the student to the fundamentals of quality in construction.

SPECIFIC OUTCOMES OF INSTRUCTION

- The student should know concepts of quality in construction.
- The students will be exposed to the concepts of quality control, quality assurance and total quality management.

COURSE OUTLINE

- Week Number 1-2:* Introduction to quality in construction:
– Definition of quality, quality control, quality assurance and total quality management.
- Week Number 3:* Inspection and testing in construction projects. The documentation and function of quality control engineers in construction sites.
- Week Number 4:* Quality improvement techniques:
– Pareto diagram, matrix analysis, cause-and-effect diagram, check sheets, and process flow diagram.
- Week Number 5:* Review of statistics:
– Frequency distributions, measures of central tendency and measures of dispersion.
- Week Number 6-7:* Control charts for variables:
– Control chart techniques, state of control, specifications, and process capability.
- Week Number 8:* Evaluation of strength test results of concrete, variation and analysis of strength data, Criteria and evaluation of data, quality control charts for strength data and other evaluation techniques.
- Week Number 9-12:* Quality assurance:
– ISO 9000 - basic definitions and scope of standards.
– ISO 9000 – discussion of clauses.
- Week Number 13-14:* Total quality management:

APPENDIX A-106

- Definition and basic concepts. Management commitment, performance measures, customer satisfaction, human resources and supplier management.

Week Number 15: Case Studies:

- Implementation of course topics on practical construction cases.

Week Number 16: Final Exam.

COURSE COORDINATOR AND DEMAND

Course Coordinator: Dr. Mohamed Emam.

Course Demand: *Required*