

Course Syllabus

Construction Course Title: Advanced Operation-Constructability, Value Engineering and Productivity

Course: CM 6330

Classroom: H323

Class Period: T/TH 8:05-9:55 pm

Text: Value Engineering: Practical Applications by Alphonse Dell Isola (RS Means)

Constructability Concepts and Practice published by ASCE
A Course packet for selected topics

Recommended References: Productivity Improvement in Construction by C.H. Oglesby (McGraw-Hill in Series)

Recommended Videos: 21st Century Jet, The Building of the 777, PBS Video TCJE 101-105 (www.pbs.org)

Implementing a Constructability Process, CII VC 114 (Construction-institute.org)

Modularization, CII VC 109 (Construction-institute.org)
Constructability-No More Excuses, CII VC 201 (Construction-institute.org)

Constructability, CII VC 406 (Construction-institute.org)
Modularization/Preassembly, CII VC-412 (Construction-institute.org)
Total Quality Management
Super Bridge, NOVA/WGBH Boston Video (www.pbs.org/wgbh/nova)

Computer based Tools for Constructability: INDOT Constructability (Contact: 317-233-3699)

CPI, Constructability Design Tool (Construction Productivity Institute-801-766-8075)

MODEX (CII-512-471-4319)

Grading Policy: Final Grades for this Course will be based on the following ranges:
90-100 A, 80-89 B, 70-79 C, 60-69 D, <60 F

Projects/Case Study (3)	- 60%
Assignments	-10%
Exam	-20%
Quizzes and Class Participation	-10%

Instructor Name: Dr. Gouranga C. Banik, P.E.

Instructor Office: Room H 336

Office Hours: T/TH- 12:30-2:00 pm, 7:00-8:00 pm

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Week	Topics	Reading Assignments	Assignments Due
1	Introduction	Video. Text	None
2	Characteristics of Construction Industry, Project Delivery Systems	Class note, Handout	Class work
3	Value Engineering	Text, Case study given, HW	Class work
4	Value Engineering	Text, Problems	HW due
5	Value Engineering, Quiz, Case study presentation	Text	HW, Case study
6	Total Quality Management	Class note, Handout	Class work
7	Total Quality Management, Quiz	Class note	Class work
8	Constructability-General	Course packet, Class note	None
9	Constructability-General and Concept	Course packet, Case study given	Constructability definition
10	Constructability Concept	Course packet, class note	Constructability Concept Case Study
11	Test	Covered materials	None
12	Constructability Implementation	Course packet, Class note	None
13	Start-up and Close-out	Class Note	None
14	Thanks-Giving Holiday	None	None
15	Prefab/Preassembly/Modularization/Productivity	Course packet, Class note	Constructability Implementation Case Study
16	Presentations	Projects/Case study	Projects

Catalog Description: An exploration of project processes and organization including procurement, start-up, documentation, payment change order administration and job close out. Included is project analysis for constructability, value engineering, and productivity analysis/improvement techniques.

Course Objectives: The principal objectives of the course are to

- 1) Provide students with an overview characteristics of construction industry;
- 2) Introduce project delivery systems;
- 3) Expose students to total quality management;
- 4) Provide an overview of value engineering concept and its implementation with examples;
- 5) Introduce the concept, procedure, implementation, and examples of constructability;
- 6) Acquaint students with the idea of prefabrication, preassembly, and modularization, as related tools to constructability;
- 7) Provide students with a current study on maintainability and operability;
- 8) Introduce the concept, procedure and implementation of productivity

Course Structure/Approach: Class activities will include lecture/discussion formats integrating class participation, individual problem solving, team problem solving, tests, quizzes, research report, guest speaker, projects, and case studies. Assignment may include problems, research, papers, class presentations, projects and other special activities. Unnoticed quizzes may be given in the class.

Cell Phone and Personal Device Policy: The use of cell phones/PDAs/pagers during class will not be tolerated. Turn them OFF before entering class and they are to remain off until the class is completed. The classroom environment will be treated the same way as if this was a corporate meeting in a large conference room in which your boss was delivering a presentation. He/she would not tolerate their use and a “wise” young employee would probably shy away from their use in order to prevent their discharge from the firm as a result of their rudeness.

Use of cell phone/PDA/Pager/blackberry etc. during class will result in the dismissal of the student from that particular class and the receipt of a “zero” for that class’s particular assignment, exercise, exam, quiz, etc. The second use of the device during class will result in the withdrawal of the student from the class by the instructor. Withdrawal of the student by the instructor after the official “drop date” will result in the grade of a “WF” for the student.

Laptop Computers: The use of laptop computers during the classroom period will be allowed as long as the student is using the laptop to take the notes. No facebook, web surfing, IM, or E-mailing is allowed. If you use your laptop for any purpose than taking notes, you will have to leave the class and it is your responsibility to acquire missed information.

Late or Incomplete Assignment: Late assignments will not be accepted unless approved by the instructor **Prior** to the due date. Incomplete assignment will also not be accepted. **No Exceptions.**

Specific Requirements: Each student is expected to behave in a professional way, attending each class session, and participating in an alert, prepared, and relevant manner. The student can expect some direction and help if they are stuck with a problem, but under no circumstances the professor do the work. Plagiarism or any form of cheating violates the academic principles and will not be tolerated.

Class participation is strongly encouraged. Different ways of participating in class include, but are not limited to: 1) presenting a brief summary of the readings upon the instructor's request; 2) answering correctly specific questions posed by the instructor or other students during the lecture; or 3) generating active and lively discussion on concepts presented in class. If participation is not voluntary, the instructor will resort to a random selection of students.

It is **YOUR RESPONSIBILITY** to obtain information/notes/assignments from missed classes. Don't ask instructor to provide for you.

It is advised that all students should carry health insurance and will be responsible for their own medical expenses if there is a field trip.