CE 558 International Construction and Engineering (3 units)  
Spring 2011 Class Syllabus

Professor     Dominick Pescarolo

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Office Hours Office hours for consultation may be obtained before or after class. Before class the instructor is available in Kaprielian conference room 226.

Blackboard  https://blackboard.usc.edu

Course Description  
Analysis and practices in the international construction and engineering industry.

Course Objectives  
Provide graduate civil engineering and construction management students with a solid background in international engineering and construction means and methods. The course focuses on management of international engineering and construction operations with an emphasis on business development, financing, planning, contracts and negotiations, special construction techniques in adverse environments, procurement, logistics, with focus on the following topics:

- Phases of a Project and Project Delivery Systems
- Alternative Methods of Project Execution
- The International Market and the Global Economy
- Developing Countries Opportunities vs. Risks
- Financing Major International Construction Projects
- Economic decision making over the entire project life cycle
- Marketing in the International Arena
- International Construction Contracts and Procedures
- Effective Management in International Operations
- Engineering and Construction Practices in Adverse Environments
  - Desert Construction
  - Arctic Construction
  - Tropical Construction
  - Elevations over 10,000 feet
- Subcontracts, Service Contracts, and Equipment
- Procurement, Inspection, and Shipping
- Personnel, Health, and Safety
- Working with Culturally Divers Resources

Prerequisite: Graduate Student

Days / Time / Location     Thursday / 6:30 p.m. to 9:10 p.m. / KAP 145

Required Textbook: “International Construction and Engineering CE 558 Course Reader Number 3”
The Course Reader is available at the USC book store.

The first fourteen sections in the course reader follow the 14 sessions in the syllabus. It is expected that the student has read the respective section before the lecture. Homework for each section / lecture must be completed prior to the following weeks lecture.

MAKE-UP LECTURES AND EXAMS

- Make-up lectures will not be given. Students will be responsible for obtaining lecture information from fellow students. All lecture presentations are available on Blackboard.

- Make-up exams will be given with special consideration only.

GRADING

Students earn their grades based on the following work, no extra credit is given:

- Quiz No. 1 10%
- Mid-Term Exam 30%
- Quiz No. 2 10%
- Project/Paper 20%
- Final Exam 30%

**Home work Assignments** are available as word documents on Blackboard. There are 14 course session, having 14 corresponding home work assignments. The course reader contains the questions at the end of each session. It is expected that students complete the required reading for a session prior to the lecture for that session. The questions at the end of each section are available electronically in Blackboard. Students should submit their home work to blackboard prior to the next course lecture. For example Session 1 home work assignment shall be submitted prior to the evening of Session 2 Lecture, no credit for late home work. At the beginning of each lecture, the home work from the prior session shall be treated as topics for class discussion.

- Questions on Exams and Quizzes will consist of solving problems and written response to questions. The questions are taken from the required course reading as well as lecture materials and homework assignments.
• Term Projects shall focus on an element of international construction and engineering.

- Term project topics can be selected from a list of topics provided by the instructor

- Self-chosen topics other than those provided by the instructor must be approved by the instructor.

- Term projects require students to form groups of three. Be prepared to stay a few minutes after class to arrange meetings with other students.

DEN Course Requirements

Students using the Digital Education Network (DEN) will have specific course requirements due to the remote nature of their participation.

1. Lectures and Power Point presentations are structured for DEN student responses. DEN students are to respond to questions noted via written submission to the DEN network. The format for submission of these responses is available under “Course Documents” and is to be submitted no later than two (2) days after that scheduled class. DEN participation responses will be numbered according to the class lecture schedule.

2. Quizzes, Mid Term, and Final Examinations are set up as “Proctored” exams in a location TBD. This must be set up in advance of the first Quiz.

3. Term Project Presentations are to be “presented” to the class according to the term project presentation schedule. At a minimum, the DEN students will “call in” and present their term project via an active link set up through DEN.
Course Reading and Class Sessions
(It is required to complete the reading prior to the session, note the course readers are arranged by session.)

<table>
<thead>
<tr>
<th>Session</th>
<th>Evening of:</th>
<th>Topic:</th>
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| 1       | January 13  | **Introduction / Overview**  
Phases of a Project, Project Delivery Systems, and Commercial Terms / Pricing Philosophies |
| 2-9     |             | **PART I Preparing for International Construction and Engineering** |
| 2       | January 20  | **Decision to Export**  
Marketing Strategies, Business Development Venture / financial Analysis, Parametric Estimating for the International Market Place, Execution Planning including multiple currencies |
| 3       | January 27  | **Know Your Competition Your Customer and Think Locally**  
Alternative Methods of Execution  
Stick Built  
Pre-assembly and Subassemblies  
(Taco Bell re-build in 48 hours)  
Modular Construction  
(ARCO Modular Facility)  
(Saudi Arabia Modular Installation)  
Key Attributes of Major International, Engineering and Construction Contractors  
Measuring Gain or Lose due to currency conversions  
Mitigation of risk associated with currency conversion |
| 4       | February 3  | **Legal Ethical and Cultural Issues in International Engineering and Construction**  
(Cultural Issues) |
| 5       | February 10 | **Risk Management in International Engineering and Construction** |
| 6       | February 17 | **Management systems Baseline Development and Control**  
[Quiz 1] |
| 7       | February 24 | **Site Survey (Local Capabilities and Material Logistics)** |
8 March 3  **Extreme Environmental Conditions (Efficiency, Health, & Safety)**  
  - Arctic  
  - Desert  
  - Tropics  
  - Elevations over 10,000 feet  
  (Alaska Pipe Line)

9 March 10  **Earned Value and Performance Measurement**  
(MIDTERM)

March 17  **Week of Spring Break (March 15-19)**

10 – 15  **PART II Regional Issues and Regional Differences in Project Execution**

10 March 24  **Canada, Mexico, Central America & South America**  
ICA/Fluor Daniel EPC in Mexico  
Cuajone Copper Mine, Andes Mount  
**Start Term Projects**

11 March 31  **Western Europe Eastern Europe and the Commonwealth of Independent States, C.I.S.**  
Eastern European Embassy Program  
Fluor Daniel C.I.S. Experience and Capabilities)

12 April 7  **Africa & Middle East**  
**Africa**  
Chad, Cameroon Pipeline  
S. Africa, SASOL Project  
**Middle East**  
(Saudi Petrochemical 36 mo. Mega Project)  
(Esfahan Refinery)

13 April 14  **Asia** [Quiz 2]  
Business Development, Peoples Republic of China  
South Korea, Inchon International Airport

14 April 21  **Pacific Rim**  
Design and Construction Practice in Japan  
(Thailand Rayong Refinery)  
(Manila Office)

15 April 28  **Presentations of Term Projects**  
(Course Evaluation)

16 May 5  **FINAL**
Note: Term Projects Due April 28, 2011

COURSE COMMUNICATION: BLACKBOARD COURSE MANAGEMENT SYSTEM
The School of Engineering is using the Blackboard Course Management System for faculty – student communication. You should check Blackboard for additional information regular basis. The course syllabus and general course information have been posted. Additional course lecture assignments notes/materials, further details on assignments and term projects / papers, and general course announcements, will be posted to the folder throughout the semester.

ACADEMIC INTEGRITY

Statement of Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Statement of Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one’s own academic work from misuse by others as well as to avoid using another’s work as one’s own. All students are expected to understand and abide by these principles. Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: [http://www.usc.edu/dept/publications/SCAMPUS/gov/](http://www.usc.edu/dept/publications/SCAMPUS/gov/). Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: [http://www.usc.edu/student-affairs/SJACS/](http://www.usc.edu/student-affairs/SJACS/).