CE 558 International Construction and Engineering (3 units)  
Spring 2012 Class Syllabus

Professor Dominick Pescarolo  
Email dpescaro@usc.edu  
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 159

Required Textbook: “International Construction and Engineering CE 558 Course Reader”
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 week’s 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 sections, having 14 corresponding homework 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 homework to Blackboard prior to the next course lecture. For example Session 1 homework assignment shall be submitted prior to the evening of Session 2 Lecture, no credit for late homework. At the beginning of each lecture, the homework 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.

**Course Reading and Class Sessions**
(It is required to complete the reading prior to the session, note the course readers are arranged by session.)

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<tr>
<th>Session</th>
<th>Evening of</th>
<th>Topic</th>
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| 1       | January 12 | 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 19 | Decision to Export  
Marketing Strategies, Business Development Venture / financial Analysis, Parametric Estimating for the International Market Place, Execution Planning including multiple currencies |
| 3       | January 26 | 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 2 | Legal Ethical and Cultural Issues in International Engineering and Construction  
(*Cultural Issues*) |
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<th>Evening of</th>
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<td>5</td>
<td>February 9</td>
<td><strong>Risk Management in International Engineering and Construction</strong></td>
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| 6       | February 16| **Management systems Baseline Development and Control**  
\[Quiz 1\] |
| 7       | February 23| **Site Survey (Local Capabilities and Material Logistics)** |
| 8       | March 1    | **Extreme Environmental Conditions (Efficiency, Health, & Safety)**  
- Arctic  
- Desert  
- Tropics  
- Elevations over 10,000 feet  
\[(Alaska Pipe Line)\] |
| 9       | March 8    | **Earned Value and Performance Measurement**  
\[(MIDTERM)\] |
|         | March 15   | **Week of Spring Break (March 12-17)** |
| 10 – 15 |            | **PART II Regional Issues and Regional Differences in Project Execution** |
| 10      | March 22   | **Canada, Mexico, Central America & South America**  
IC/Fluor Daniel EPC in Mexico  
Cuajone Copper Mine, Andes Mount  
**Start Term Projects** |
| 11      | March 29   | **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 5    | **Africa & Middle East**  
**Africa**  
Chad, Cameroon Pipeline  
S. Africa, SASOL Project  
**Middle East**  
(Saudi Petrochemical 36 mo. Mega Project)  
(Esfahan Refinery) |
### Session:  Session of:  Topic:

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| 13 | April 12 | Asia [Quiz 2]  
Business Development, Peoples Republic of China  
South Korea, Inchon International Airport |
| 14 | April 19 | Pacific Rim  
Design and Construction Practice in Japan  
(Thailand Rayong Refinery)  
(Manila Office) |
| 15 | April 26 | Presentations of Term Projects  
(Course Evaluation) |
| 16 | May 3 | FINAL |

Note: Term Projects Due April 26, 2012

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**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.

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**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.

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**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: