Course Syllabus

CE566 – Project Controls / Planning and Scheduling (20113_ce_566_29835R)
Fall 2011 (Term 20113) – Mondays 6:30pm-9:10pm, SAL-126

• Professor Marc S. Glasser, PSP
  o Office hours 5-6pm class days
  o Telephone: (714) 503-3610 e-mail: glasser@usc.edu
  o Blackboard address: https\blackboard.usc.edu – CE566

Introduction and Purpose
Project Management is the act of bringing diverse and often complex components together to create a product or (in the case of construction management) build a facility to meet the desired needs of the client. Measuring whether or not that project is a success is the goal of project controls. The schedule becomes a tool to quantify delay claims and resolve disputes. The first step in this process is to establish the plan against which performance will be measured.

a. Purpose and Objectives
   1. Provide an understanding of the components of project controls (Estimating, Planning and Scheduling, Cost and Resource Management);
   2. Techniques for developing hierarchical organizational, resource, and work breakdown structures (introducing BIM);
   3. Provide the basis for sound project controls through the use of resource and cost loaded CPM schedules;
   4. Introduce the student to the use of scheduling software for creating/maintaining CPM schedules.

b. As a result of taking the course, the student will gain
   1. An understanding of the project life cycle (including sustainability) and the “top-down” management process;
   2. Practical approach for applying organized work breakdown structures;
   3. Knowledge of the foundation of CPM scheduling;
   4. Basic software skills for creation and maintenance of computerized baseline CPM schedules, and
   5. Understanding for the value of and develop techniques for producing cost and resource loaded schedules to measure and forecast performance to guide the construction process.

c. Students will be asked to assume various roles and responsibilities in a team approach to producing an execution plan for development of an assigned project. Through the course of instruction components of the plan will be developed and combined such that the result is a baseline cost and resource loaded CPM schedule detailing the team’s collective approach. Instructors will provide the tools and techniques and provide guidance throughout the process.

d. While the course syllabus lists an outline of course material, class discussion and progress will guide coverage of material. Participation by students in class is required. All questions will be addressed, no question is invalid. While office hours are limited due to work constraints all efforts will be made to meet and resolve any questions or issues you may have.
In today’s increasingly fast paced work environment project management is demanding increased control and communication in response to changing project conditions and market demands. Project Controls offers the key to successful project delivery that every member of the team needs to understand and master.

The course will provide mixed presentation within the computer lab; utilizing lecture to present the concept, issue and/or procedure, and then hands-on lab exercise to demonstrate current technical software techniques. **WORK on computer lab virtual machines and Synergy Platform is not secure and will be removed from the database between sessions.**

You will need a USB Storage device for storage of class work and/or assignments.

**Course Bibliography:**

2. **Planning and Scheduling USING PRIMAVERA VERSION 6.0 for all industries including versions 4 to 6**, Paul E Harris, Eastwood Harris, 2009, ISBN: 978-1-921059-20-9

3. **PRIMAVERA PROJECT PLANNER (P6) HELP** (AVAILABLE ON-LINE)

**Course Requirements and Grades**
1. Class participation and weekly assignments will form the primary basis for a final course project presentation.

2. Weekly participation, assignments and/or quizzes will combine for 25% of the grade; a mid term exam will represent 20%, a final exam 35%, and a team final project presentation 20%.

3. Assignments will demonstrate the student understands the principle or procedure introduced in the preceding class; exams will be multiple choice and written calculations as well as schedule software file solutions. The final project will be a team approach and execution plan for a small construction project.

4. Assignments and exams are indicated in the tentative class schedule noted for the term.

**Course Readings/ Tentative Class Sessions**
(Changes will be announced in advance via Blackboard)

<table>
<thead>
<tr>
<th>Fall 2011</th>
<th>Date</th>
<th>Topic</th>
<th>Assignment</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>8/22/11</td>
<td>Introduction, Project Life Cycle, Overview of Project Controls; CPM ADM &amp; PDM</td>
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<td>Mubarak – Chapter 1 &amp; 10; Harris Chap 1</td>
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<tr>
<td>Week 2</td>
<td>8/29/11</td>
<td>Contract Documents – Contract, General Conditions, Specifications, Drawings</td>
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<td>Handouts</td>
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<tr>
<td>Week 3</td>
<td>9/5/11</td>
<td>LABOR DAY HOLIDAY</td>
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<td>Week 4</td>
<td>9/12/11</td>
<td>CPM Forward/Backward Pass Calculations; Scope Definition, Work Breakdown Structure</td>
<td>CPM Network Diagramming</td>
<td>Mubarak – Chap 2, 3 &amp; 4 Harris Chap 2</td>
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<td>Week 5</td>
<td>9/19/11</td>
<td>Introduction to Primavera Project Planner (v6); Virtual Machine Access, File Management, Creating the Project, EPS, OBS and WBS</td>
<td>Forward &amp; Backward Calculation</td>
<td>Mubarak – Chapter 5, Harris Chapters 3, 4 &amp; 6</td>
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<td>Week 6</td>
<td>9/26/11</td>
<td>Data Input - Calendars; Constraints</td>
<td>P6 Input, Project, WBS</td>
<td>Harris Chapters 2, 7, 11</td>
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<td>Week 7</td>
<td>10/3/11</td>
<td>Data Input - Activities and Logic, Calculations</td>
<td>P6 Input, Calendars, Quiz</td>
<td>Harris Chapters 5 &amp; 6</td>
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<td>Week 8</td>
<td>10/10/11</td>
<td>MIDTERM EXAM (OPEN BOOK)</td>
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<td>Week 9</td>
<td>10/17/11</td>
<td>Formatting Data – Group &amp; Sort, Filters</td>
<td>P6 Input file, Activities &amp; Logic</td>
<td>Harris Chapters 12 &amp; 13</td>
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<td>Week 10</td>
<td>10/24/11</td>
<td>Layouts, Print Preview; Progress Reporting - Forecasting and Comparing Current with a Baseline</td>
<td>Formatted – Activities &amp; Logic</td>
<td>Mubarak-Chap 9 Harris Chapters 8 &amp;15</td>
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<td>Week 11</td>
<td>10/31/10</td>
<td>Resource Management – Revenue, Cost, and Margin</td>
<td>Print Layouts &amp; Progress Report</td>
<td>Mubarak-Chapter 7</td>
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<td>Week 12</td>
<td>11/7/11</td>
<td>Resource Analysis - Resource Utilization and Cumulative Curves</td>
<td>Cost / Labor Input</td>
<td>Mubarak - Chapters 7 &amp; 8</td>
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<td>Week 13</td>
<td>11/14/11</td>
<td>Probability and Risk</td>
<td>Resource Curves / Histogram</td>
<td>Mubarak - Chapters 11,12,14</td>
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<td>Week 14</td>
<td>11/21/11</td>
<td>Delay Claims - Entitlement and Qualitative Issues</td>
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<td>Mubarak - Chapter 13</td>
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<td>Week 15</td>
<td>11/28/11</td>
<td>Time Impact Analysis - Quantative Issues,</td>
<td>Project Due</td>
<td>Mubarak Chapter 8</td>
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<td>12/5/11</td>
<td>Study Days - Review Session</td>
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<td>12/12/11</td>
<td>Final Exam - Written and Lab (OPEN BOOK)</td>
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- Weekly assignments are recommended to be submitted at the beginning of the class in which they are listed as due. Late assignments will be accepted, however, work in the current session will build on completed assignments.

**Statement for 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 on 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/. 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/.

This course is NOT a DEN class. On-line classes are not available this semester.

- **How the instructor will communicate with the students (outside of class) and how the students will communicate with each other?** For example,
  - Due to normal work commitments the professor will not be available on campus at times other than just prior to class (5-6:30pm), **or by special arrangement**.
  - E-mail is the preferred method of communication, although announcements may be sent via Blackboard. Response to emails generally is provided within one business day.
  - If there are updates to online files, including new materials, assignments, completed grading assignments and examinations, email notice or blackboard announcements will be posted.

- The protocols defined by the USC Student Conduct Code must be upheld in classes. For example,
  - Posting inappropriate material
  - SPAM to the class
  - Online flaming
  - Offensive language
  - For more information, please visit http://www.usc.edu/student-affairs/SJACS/

- **The level of technology and of technical competence will be required of the student:**
  - Blackboard
  - Turn-it-in
  - Primavera Project Planner v6.2 (as available in the lab) will be taught.
  - MS Word, MS Excel, and MS Powerpoint will be utilized. Students MUST have a working knowledge of windows.
  - Assignments may be completed electronically and submitted via Blackboard, or printed and turned in at the start of class. In the spirit of a greener world electronic submissions are preferred.