CE 460
Course Syllabus

Spring 2014
Part I Course Organization
SYLLABUS

CE 460

Spring 2014

KAP 146

T 3:30-6:10 PM

Text: Construction Contracting, 7th edition, by Clough/Sears/Sears

(ISBN 0-471-44988-1)

Professor Henry M. Koffman, PE

KAP 222

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Office Hours: By Appointment

TA: Arsalan Heydarian

KAP 239

Email: heydarian@usc.edu

Office Hours:

Monday    1 - 3 PM

Wednesdays 1 - 3 PM

Class: TUESDAYS, 3:30 – 6:10 in KAP 146
WEEK 1
1/14 Introduction/Industry/Project/Overview
Lecture: Chapter 1: The Construction Industry
First Class Quiz

WEEK 2
1/20 Martin Luther King Jr. Day

1/21 Field Trip

WEEK 3
1/28 Speaker Guest: Jay Fischer – Catalina Project

Lecture: Chapter 2: Business Ownership
Chapter 3: Company Organization

Autobiographies due [Past, Present, Future] Include Recent Color Picture
Homework #1 Due:  Chapter 1: #1-1

1/31 Chinese New Year  [4712, Year of the Horse]

WEEK 4

2/4 Homework #2 Due: Chapter 2: #1, 3, 9-11, 22-24

Chapter 3: #1, 4, 5, 8

Ethics Group #1 Presentation

Quiz #1: Chapters 1-3 [Closed Book]

2/5-2/8 SPARKS

WEEK 5

2/11 Lecture: Chapter 4: Drawings & Specifications

Chapter 5: Estimating & Bidding

Chapter 6: Construction Contracts

Ethics Group #2 Presentation
WEEK 6

2/17  Presidents’ Day

2/18  Field Trip

WEEK 7

2/25  Lecture:  Chapter 7:  Contracts Surety Bonds
       Chapter 8:  Construction Insurance

Homework #3 Due:  Chapter 4:  #1, 3, 4, 8, and 9
      Chapter 5:  #1, 4, 6, 12, 17 – 19, 25, 27, 28
      Chapter 6:  #2, 5, 8 –10, 13, 15, 16

Videos

Ethics Group #3 Presentation

Take-home quiz Unbalancing (due on 3/4)

WEEK 8

3/4  Lecture:  Chapter 9:  Business Methods
       Chapter 10:  Project Management & Administration
Ethics Group #4 Presentation

Homework #4 Due:  Chapter 7: #1, 4, 5, 7-9
Chapter 8: #1-13
Unbalancing take-home quiz due

WEEK 9
3/11      MIDTERM:  Chapters 1-8 [Closed Book]

TERM PAPER TOPICS DUE

3/13-3/15   CHI EPSILON CONCLAVE

WEEK 10
3/17-3/21   Spring Break

WEEK 11
3/25      Lecture:      Chapter 13:  Labor Law
           Chapter 14:  Labor Relations
Homework #5 Due:  Chapter 9:  #1-6
                           Chapter 10:  #1, 2, 4-9, 12-14

Ethics Group #5 Presentation

WEEK 12

4/1  Lecture:  Chapter 11 Project Time Management

Homework #6 Due:  Chapter 13:  #1, 3, 4, 7-10
                           Chapter 14:  #3, 4-8, 11-14

Ethics Group # 6 Presentation

QUIZ #3 Chapter 11 [take home]

WEEK 13

4/8  Lecture:  Chapter 12  Project Cost Management
              Chapter 15  Safety

Homework #7 Due:  Chapter 11:  #1, 4-10
QUIZ #3 Due

Ethics Group #7 Presentation

WEEK 14
4/15  Homework #8 Due: Chapter 12: #1 – 7
       Chapter 15: #2-4, 6, 7, 12-14

TERM PAPER DUE!

PAPER/ORAL PRESENTATIONS

WEEK 15
4/22  PAPER/ORAL PRESENTATIONS

WEEK 16
4/29  Class/Teacher/TA/ABET Evaluations
PAPER/ORAL PRESENTATIONS

WEEK 17

5/6    No Class

Stop Day

WEEK 18


Friday, 5/16   COMMENCEMENT

POLICIES

Examinations:
All examinations will be closed book. Notes will not be allowed. Make-up examinations will be given under extraordinary circumstances only. Missed quizzes will count as zero if prior authorization is not granted. Honor system is observed.

**Grading/Values:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Grade Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Participation</td>
<td>10%</td>
<td>A- to A+ = &gt;90%</td>
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<tr>
<td>And Homework</td>
<td></td>
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</tr>
<tr>
<td>Midterm</td>
<td>30%</td>
<td>B- to B+ = &gt;80%</td>
</tr>
<tr>
<td>Final</td>
<td>30%</td>
<td>C- to C+ = &gt;70%</td>
</tr>
<tr>
<td>Paper and Oral Presentations</td>
<td>15%</td>
<td>D- to D+ = &gt;60%</td>
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<tr>
<td>Quizzes</td>
<td>15%</td>
<td>F &lt; 59%</td>
</tr>
</tbody>
</table>

**Note:** Quizzes cannot be made up without prior authorization from the Professor. Missed quizzes will count as a zero.

**Course Content:**

A. **Objectives:**

1. Fulfill degree requirements.
2. Become familiar with Construction Management/Methods.
3. Understand the principles of project management, cost/schedule/methods/terminology, contract administration.
4. Skill development for successful job performance, especially communications, both written and verbal.
5. Ethics comprehension.
6. Teamwork

B. **Outcomes:**

1. Construction Management Fundamentals
2. Unbalancing
3. Critical Path Method
4. Written Communications
5. Oral Communications

6. Ethics

C. Homework and Paper Submission:

Please be punctual in submitting your home works and term paper. Homework assignments must be submitted by the date specified on this syllabus before the class starts. I will be flexible as long as I feel the reasons are valid and are not excessive. Unexcused late homework will not be accepted. You should submit your homework 1) on paper or 2) through the online link on blackboard under the assignment. These links will be set for each homework assignment separately. Please do not email your homeworks and do not use digital Dropbox to submit your homeworks. The homeworks submitted online, will be graded online. Term paper should be submitted through the Turnitin Software. For more information about Turnitin, please refer to term paper section in this syllabus.

D. Instructions:

1. Includes reading assignments, lectures, example problems, homework, examinations, a term paper, an oral presentation and field trips.

2. Intention in lecture is to: focus on key ideas, work example problems, leaves less important detail for reading and question asking.

3. Students will be expected to fully participate in classroom discussions and problem solving.

4. Industry speakers will present their views and opinions.

5. Tardiness will not be tolerated.

6. Absences are only excused with prior notification via e-mail and/or telephone. Three (3) unexcused absences will result in a failure grade.

7. Cell phones, pagers, etc. must be turned off.

E. Reading Assignments

1. Reading Assignments are identified on the course agenda.

2. It is important to keep up with the reading since it will form the basis for classroom discussions.
F. **Extra Credits:**

1. Extra Papers
2. Professional organizational activities and membership in ASCE, AGC, CMAA, etc.
3. Field trips
4. Seminars, Symposiums, Conferences, etc. (Symposium #17, ASCE PSWRC, SPARKS Competition, ASCE Student Leadership Conference, etc.)

G. **Student Conduct**

1. Students are Responsible for adhering to “Academic Responsibility.”
ACADEMIC RESPONSIBILITY

"Students, faculty, and administrative officials at the University of Southern California, as members of the academic community fulfill a purpose and a responsibility.

The University must, therefore, provide an optimal learning environment, and all members of the University community have a responsibility to provide and maintain an atmosphere of free inquiry and expression. The relationship of the individual to this community involves these principles: Each member has an obligation to respect:

1. THE FUNDAMENTAL HUMAN RIGHTS OF OTHERS
2. THE RIGHTS OF OTHERS BASED UPON THE NATURE OF THE EDUCATIONAL PROCESS
3. THE RIGHTS OF THE INSTITUTION

ACADEMIC DISHONESTY

The following statements and examples explain specific acts of academic dishonesty.

1. Examination Behavior: Any use of external assistance during an exam is considered academically dishonest unless expressly permitted.

   a. Communicating in any way with another student during the examination.

   b. Copying material from another student’s exam.

   c. Using unauthorized notes, calculators or other devices.

2. Fabrication: Any intentional falsification or invention of data or citation in an academic exercise will be considered a violation of academic integrity.

   a. Inventing or altering data for a laboratory experiment or field project.

   b. Resubmitting returned and corrected academic work under the pretense of grader evaluation error, when, in fact the work has been altered from its original state.

3. Plagiarism: Plagiarism is the theft and subsequent passing off of another’s ideas or words as one’s own. If the words or ideas of another are used, acknowledgement of the original source must be made through recognized referencing practice.
a. **Direct Quotation:** Any use of a direct quotation should be acknowledged by footnote citation and by either quotation marks or appropriate indentation and spacing.

b. **Paraphrase:** If another’s ideas are borrowed in whole or in part and are merely recast in the student’s own words, proper acknowledgement must, nonetheless, be made. A footnote or proper internal citation must follow the paraphrase material.

4. **Other Types of Academic Dishonesty:**

   a. Submitting a paper written by another;

   b. Using a paper or essay in more than one class without the instructor’s express permission;

   c. Obtaining an advance exam copy without the knowledge or consent of the instructor;

   d. Changing academic records outside of normal procedures;

   e. Using another person to complete a homework assignment or take-home exam without the knowledge and consent of the instructor.

The above information is taken directly from the Scampus and the Academic Affairs Unit of the Student Senate in conjunction with the Academic Standards Committee.
## APPENDIX A: ACADEMIC DISHONESTY

### SANCTION GUIDELINES

<table>
<thead>
<tr>
<th>VIOLATION</th>
<th>RECOMMENDED SANCTION</th>
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<tbody>
<tr>
<td>Copying answers from other students on exam.</td>
<td>Submission of purchased term papers or papers done by others.</td>
</tr>
<tr>
<td>One person allowing another to cheat from his/her exam or assignment.</td>
<td>Submission of the same term papers to more than one instructor where no previous approval has been given.</td>
</tr>
<tr>
<td>Possessing or using extra material during exam (crib sheets, notes, books, etc.)</td>
<td>Unauthorized collaboration on an assignment.</td>
</tr>
<tr>
<td>Continuing to write after exam has ended.</td>
<td>Falsification of information in admission application (including supporting documentation).</td>
</tr>
<tr>
<td>Taking exam from room and later claiming that the instructor lost it.</td>
<td>Documentary falsification (e.g., petitions and supporting medical documentation).</td>
</tr>
<tr>
<td>Changing answers after exam has been returned.</td>
<td>Plagiarism in a graduate thesis or dissertation.</td>
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<tr>
<td>Fraudulent possession of exam prior to administration.</td>
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</tr>
<tr>
<td>Obtaining a copy of an exam or answer key prior to administration.</td>
<td></td>
</tr>
<tr>
<td>Having someone else take an exam for oneself.</td>
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<tr>
<td>Plagiarism.</td>
<td></td>
</tr>
<tr>
<td>Action Description</td>
<td>Sanction</td>
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<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F for course.</td>
<td>F for course and recommendation for further disciplinary action (possible suspension).</td>
</tr>
<tr>
<td>F or zero on exam.</td>
<td>F for both courses.</td>
</tr>
<tr>
<td>F for course and recommendation for further disciplinary action (possible suspension).</td>
<td>F for the course for both students.</td>
</tr>
<tr>
<td>F for course and recommendation for disciplinary action (possible suspension).</td>
<td>Revocation of university admission without opportunity to apply.</td>
</tr>
<tr>
<td>F for course and recommendation for suspension.</td>
<td>Suspension or expulsion from the university; F for course when related to a specific course.</td>
</tr>
<tr>
<td>Suspension or expulsion from the University; F for course.</td>
<td>Suspension or expulsion from the university for both students; F for course.</td>
</tr>
<tr>
<td>Suspension or expulsion from the University for both students; F for course.</td>
<td>Expulsion from the university when discovered prior to graduation; revocation of degree when discovered subsequent to graduation.</td>
</tr>
</tbody>
</table>

Please refer to Trojan Integrity: A Faculty Desk Reference, for more information on assessing sanctions. You may also consult with members of the Office of Student Judicial Affairs and Community Standards at any point in the process, (213) 740-6666.

Note: The Student Conduct Code provides that graduate students who are found responsible for academic integrity violations may be sanctioned more severely than Appendix A suggests.
“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 the TA) as early in the semester as possible. DSP is located in STU 301 and is open early, 8:30 am – 5:00 pm, Monday through Friday. The number for DSP is (213) 740-0776.”
CE 460  
Spring 2014  
Term Paper Topics

1. Partnering
2. Total Quality Management or QA/QC
3. Termination of a Public Contract
4. Robotics in Construction
5. Construction Safety
6. Starting Your Own Construction Company
7. Privatization
8. Your company has just been awarded a $2.5 billion contract to construct a concrete dam in China. You have been Project Manager in charge and you must develop actions and/or plans to organize and manage the Project.
9. Define a major problem confronting the construction industry today.
11. The future trend of Construction Management as a business
12. BIM
15. Mechanic Lien Changes
16. IPD [Integrated Project Delivery]
17. Limited Liability Company, Corporations & Chapter S Corporations
18. Data Mining and Analysis in Engineering
19. What are the benefits of continuing professional development? For engineering projects, what are the ethical responsibilities of the engineer to provide sustainable development?
20. Pros and Cons of CPM and other innovative methods to manage construction schedules.
23. Sustainability – LEED
24. Needed changes in engineering curriculum [pick a major]
25. Diversity in the Construction industry.
26. Construction Productivity
27. Lean Construction
28. Construction Bonds & Insurance
29. Public financing for construction projects.
30. PPP [Private Public Partnership] with PPP case studies.
31. Females in the construction industry.
32. Design/Build
33. Infrastructure in California
34. American Construction companies on the global stage.
35. Construction factor in Real Estate Development.
36. Alternate Disputes Resolution
37. Construction Supply Chain Management
38. How to improve building life cycle performance
39. The impact of ergonomic factors in construction industry.
40. Nanotechnology in construction industry
41. The philosophy of construction management
42. Challenges and Opportunities in building energy consumption
43. Prefabrication and mass customization
44. Self-chosen topic upon approval of Professor Koffman

**Term Paper Submission**

USC is committed to the general principles of academic honesty that include and incorporate 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.

**Research Papers Organization**

1. **Title Sheet**
   a. Title
   b. Author(s)
   c. Date
   d. Course Number

2. **Abstract or Executive Summary**

3. **Text**
   a. Introduction
   b. Body
   c. Conclusion

4. **Acknowledgements**
5. References and/or Footnotes

10-12 pages, double space

By taking this course, students are expected to understand and abide by these principles. Projects for this course may be subject to an originality review as performed by Turnitin technologies (http://www.turnitin.com) to find textual similarities with other Internet content or previously submitted student work. Students of this course retain the copyright of their own original work, and Turnitin is not permitted to use student-submitted work for any other purpose than (a) performing an originality review of the work, and (b) including that work in the database against which it checks other student-submitted work.
**Lower academic performance:** The following health factors are associated with lower academic performance on at least one assignment (based on the 2000 Health Survey):

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percent affecting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>37.1</td>
</tr>
<tr>
<td>Sleep difficulty</td>
<td>27.1</td>
</tr>
<tr>
<td>Relationship problems</td>
<td>21.2</td>
</tr>
<tr>
<td>Depression</td>
<td>18.6</td>
</tr>
<tr>
<td>Family concerns</td>
<td>18.4</td>
</tr>
<tr>
<td>Internet and game-playing</td>
<td>16.0</td>
</tr>
<tr>
<td>Alcohol</td>
<td>7.5</td>
</tr>
</tbody>
</table>

CE 460

Spring 2014

KEYS FOR SUCCESS
1. FUN. Be passionate; Enjoy what you are doing; Must love product and work; Everyone is able to tell if you are enjoying what you are doing. If you are not having FUN, then you are doing the wrong type of work.

2. FOCUS. Be committed to your work. Focus your energy on ideas and enjoyment of work.

3. CREATIVE. Not stopping at your assignment, but taking it one step beyond. Offering more than asked for, maybe that extra smile, or extra attention.

4. PRIDE. Self esteem.

5. ENTHUSIASM. Let everyone know how terrific things are going. Toot your own horn and let others toot theirs. Give individual thank yous, and give honest positives in a timely fashion.
INSTRUCTOR’S CODE OF ETHICS

I will constantly be aware of all learning styles and adapt to the class to meet those leaning needs using a variety of teaching methods.

I will create an environment in the class that will encourage the greatest opportunity for learning.

I will strive to continuously improve my skills as an instructor, trainer and teacher.

Emergency Training Institute
STUDENT’S CODE OF ETHICS

I will take responsibility for my own learning.

I agree to be an active participant in my quest for new knowledge and skills.

I will participate in the evaluation process in an honest manner.

I will not interfere with the learning of others.
### DEADLINE FOR FILING AND EXAM DATES:

#### SPRING 2014 Exams

<table>
<thead>
<tr>
<th>Category</th>
<th>Exam Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>April 2014 Final Filing Dates:</strong></td>
<td></td>
</tr>
<tr>
<td>Final Filing Date for New PE/PLS Applications</td>
<td>November 1, 2013 (Friday)</td>
</tr>
<tr>
<td>Final Filing Date for PE/PLS Refiles and all FE/FS (EIT/LSIT) Applications</td>
<td>January 6, 2014 (Monday)</td>
</tr>
<tr>
<td><strong>April 2014 Examination Dates:</strong></td>
<td></td>
</tr>
<tr>
<td>FE/FS (EIT/LSIT) Exams</td>
<td>Continuous Testing Beginning 2014</td>
</tr>
<tr>
<td>NCEES PE Exams</td>
<td></td>
</tr>
<tr>
<td>- Chemical</td>
<td>April 11, 2014 (Friday)</td>
</tr>
<tr>
<td>- Civil</td>
<td></td>
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<tr>
<td>- Electrical</td>
<td></td>
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<tr>
<td>- Mechanical</td>
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<tr>
<td>Principles of Surveying (PS)</td>
<td>April 11, 2014 (Friday)</td>
</tr>
<tr>
<td>NCEES Structural 16 hour Exam</td>
<td>April 11-12, 2014 (Friday and Saturday)</td>
</tr>
<tr>
<td>California Land Surveying Exam</td>
<td>April 14, 2014* (Monday)</td>
</tr>
<tr>
<td>Special Civil Exams: Seismic Principles and Engineering Surveying</td>
<td>April 2-23, 2014*</td>
</tr>
</tbody>
</table>

#### Notes:

- *Schedule is subject to change in accordance with Board Rule 436(c).*
- *Applications must be postmarked by the final filing date in accordance with Board Rule 422(a).*
- *Effective October 2011 exam administration, postponement requests will not be processed for any NCEES PE, FE (EIT) or FS(LSIT) examination or the California Geotechnical exam.*
- *If you are applying for licensing in California you must apply in accordance with California statutes and regulations, schedules and*
deadlines. The California Board does not honor NCEES or other state's deadlines for submitting applications.

- All Civil PE applicants must comply with the posted final filing dates as they are required by law to take and pass the Special Civil Exams.
- The Board does not allow extensions of the final filing dates pending notification of the FE/EIT and FS/LSIT exam results, or exam appeal results.

- Schedule is subject to change in accordance with Board Rule 436(c).
- Applications must be postmarked by the final filing date in accordance with Board Rule 422(a).
- Effective October 2011 exam administration, postponement requests will be considered on a case by case basis.
- If you are applying for licensing in California you must apply in accordance with California statutes and regulations, schedules and deadlines. The California Board does not honor NCEES or other state's deadlines for submitting applications.
- Effective January 2012: The final filing date for submission of complete, new applications for licensing for the October exams will be May 1 of each year. The final filing date for submission of complete, new applications for licensing for the April exams will be November 1 of each year.
- All Civil PE applicants must comply with the posted final filing dates as they are required by law to take and pass the California Civil Exams.
- The Board does not allow extensions of the final filing dates pending notification of the FE/EIT and FS/LSIT exam results, or exam appeal results.
* The California Specific Examinations will be administered as computer based tests (CBT). All candidates will receive an e-mail notice from the Board or the CBT vendor approximately 6-8 weeks prior to the examination date with instructions on when and how to schedule their examination once all applications have been reviewed and approved.

FOR MORE INFORMATION:

California State Board Registration for Professional Engineers and Land Surveyors

PO Box 349002
2535 Capitol Oaks Drive, Suite 300
Sacramento, CA  95833-2944

Phone:  916-263-2222     Fax:  916-263-2246
BPEL_Office@dca.ca.gov
Website:  www.dca.ca.gov/pels
NOTE: STUDY BOOKS ARE AVAILABLE AT THE XE + AGC + ASCE OFFICE – KAP 241

ALL CIVIL ENGINEERING STUDENTS ARE URGED TO TAKE THIS EXAM NOW!!
Student Stress Calendar*

This calendar is meant to give you an idea of the stresses that many college students will be dealing with throughout the school year.

**January**
- Post holiday blues.
- Classes begin again.
- Less daylight hours.
+ Academic pressures are less.

**February**
- Vocational choice causes anxiety and depression.
- Depression increases for those who have failed to establish social groups.
- Social calendar is not active and weather is blah.
+ Transfer students and fresh people have survived the semester.
+ Energy is high because students see the end of the year in sight.

**March**
- Drug and alcohol use increase.
- Depression increases due to anticipated separation from friends and loved ones at college.
- Academic pressures increase – Midterm panic.
+ Spring is coming; weather improves.

**April**
- Frustrations and confusions develop during registration for the next semester.
- Papers and exams mount up.
- Time is extremely full with end of the year banquets, job interviews, award ceremonies, etc.

+ The end is in sight and motivation arises to finish out the school year.

**May**

- End of the year anxiety over leaving friends and facing conflicts at home.
- Senior panic about jobs and ability to finance oneself.
+ Euphoria over completing one year of college/graduating.
+ Friendships solidify as people face having to be separated over the summer.
Student Stress Calendar (cont’d)

September
- Homesickness: Especially fresh people
- Values crisis: Students are confronted with questions of conscience in areas of drugs, alcohol, experimentation, morality, religion, and social expectations.
- Feelings of inadequacy and inferiority develop due to the discrepancy between high school status, grades and initial college performance.
- “In Loco Parentis Blues”: Students feel depressed because of real or perceived restrictive policies and regulations of college.
- International students sense confusion, vulnerability, and lack of any advocate in power position.
+ Students’ excitement and willingness to try new things is at a peak.

October
- Fresh people realize that college life is not as perfect as expectations led them to believe. Old problems seem to continue and new ones are added.
- Grief develops because of inadequate social skills for finding a group or not being selected by one.
- Mid-term work pressure accumulates, followed by feelings of failure and loss of self-esteem.
- Sexual conflicts and confusion begin to show a result of first time confrontation with different heterosexual and homosexual standards.
- Non-dating students feel a loss of esteem because of societal pressures. Dating students may feel pressure to perform.
- Panic about finding a job strikes mid-year graduates.

November
- Academic pressure mounts due to procrastination, difficulty of work, and lack of ability.
- Depression and anxiety increase since students feel they should have adjusted to college by now.
- Party blues for students who have not found a social group.
- Economic anxiety: Loans are due and summer finances have now dwindled.
- Some students cease to make attempts at new friendships beyond and existing two or three superficial relationships.
- Mid-term break provides relief.

**December**

- Extracurricular time strain: Seasonal parties, concerts, dances, projects, etc.
- Anxiety, fear, and guilt as final examinations approach and papers are due.
- Pre-holiday depression: Those who have no home to visit; those who prefer not to go home.
- Financial strain because of holiday gifts and travel expenses.
- Vacation strains dating relationships.
- Excitement is up because of season and vacation.
Part II  Detailed Course Objectives
## Course Information, Textbook, and Supplementary Materials

**Course Description:** Introduction to the construction processes; estimating and bidding, construction administration, planning and scheduling, equipment and methods, labor relations, cost control systems, and safety.

**Required for:** BSCE Structural  
**Elective for:** BSCE and BSCE Building Science  
**Prerequisite:** none  
**Co-Requisite:** none  

**Reference:** none

### Topics Covered

<table>
<thead>
<tr>
<th>Development of professional skills</th>
<th>Students will have learned:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Site safety</td>
<td></td>
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<tr>
<td>2. Labor law and labor relations</td>
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<td>3. Project cost management</td>
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<td>4. Project time management</td>
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<td>5. Business methods</td>
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<td>6. Bonds and insurance</td>
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<td>7. Cost estimating and bidding</td>
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<td>8. Drawings and specifications</td>
<td></td>
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<td>9. Company organization</td>
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<td>10. Business ownership</td>
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<td>11. The construction company</td>
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<td>12. Construction contracts and law</td>
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<tr>
<td>13. Ethics</td>
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<tr>
<td>14. To research, organize, and write a technical paper</td>
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<tr>
<td>15. To prepare and orally present a technical paper</td>
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<thead>
<tr>
<th>Ethics</th>
<th>16. To differentiate various ethical behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. To learn various codes of ethics</td>
<td></td>
</tr>
<tr>
<td>Networking</td>
<td>18. How to join professional organizations (AGC, ASCE, etc.)</td>
</tr>
<tr>
<td>19. About opportunities to attend professional conferences, meetings, symposia, etc.</td>
<td></td>
</tr>
<tr>
<td>20. About professional registration</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>22. Critical path method</td>
<td></td>
</tr>
<tr>
<td>23. Unbalancing</td>
<td></td>
</tr>
<tr>
<td>24. The construction process</td>
<td></td>
</tr>
</tbody>
</table>
Lecture and Lab Schedule

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sessions per Week</td>
<td>Duration per Session</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Contribution of Course to Meeting the Professional Component

**Engineering Topics**

In this course, students will further develop their professional skills and networking capabilities, understand the importance of ethics along with the principles of construction management and methods.

Relation of Course Objectives to Program Outcomes

The Civil Engineering program is designed to teach beyond the technical content of the curriculum and prepare the students to utilize what they learn in a professional setting.

This course contributes to the program outcomes as outlined in the adjacent table.

<table>
<thead>
<tr>
<th>Course Contribution to Program Outcomes (a-k)</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>d. An ability to function on multi-disciplinary teams.</td>
<td>✔</td>
</tr>
<tr>
<td>f. An understanding of professional and ethical responsibility.</td>
<td></td>
</tr>
</tbody>
</table>

Prepared by: Henry M. Koffman, P.E.
Director, Construction Engineering and Management Program

Date: Spring 2014