

CVEEN 4910 - PROFESSIONAL PRACTICE AND DESIGN
Syllabus

University of Utah
Department of Civil & Environmental Engineering

Spring 2014
MCE 1001 Layton Auditorium – T/Th 9:10am - 12:05pm

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Required Text:

Hansen, K.L. and Zenobia, K.E. (2011). *Civil Engineer's Handbook of Professional Practice*. John Wiley & Sons, Inc. and ASCE Press, Hoboken, New Jersey.

Additional References:

Walesh, Stuart G., Managing and Leading, ASCE Press, Reston, VA 20191, 2004.

Walesh, Stuart G., Engineering Your Future 2nd Edition, ASCE Press, Reston, VA 20191, 2000. ISBN: 0-7844-0489-5.

Objectives:

This course is designed to provide the student with a comprehensive experience in a professional environment and design process that mirrors an actual project. There is no one answer or solution to the design of the project studied throughout the course. It is expected that the final design will be based on a collective effort of all students. The final design will evolve throughout the semester and will be based on many large and small changes that will be suggested by the different members of the design teams, the owner's representatives, and other interested parties. This course is structured such that the design project facilitates the implementation of a professional environment and organizational structure where teamwork, communication, dispute resolution, self-motivation, and hard work are key elements of success. During the semester you will receive instruction on the aspects of project documents including proposals, feasibility studies, and technical reports, feasibility analysis methods, design process elements, project management and professional development.

You will be required to compile your own course journal based on the subject matter of class lectures and your own observations. You should have some notations in your journal for each class meeting, individual work sessions, and team meetings. Team leaders must include comments on the contributions of team members throughout the semester. The journal will be handed in at the end of the semester and graded.

This course should increase your individual capabilities by (ABET outcome listed):

- c. Designing constructible and sustainable civil engineering systems, components and processes that meet desired needs and incorporate principles of life cycle costing.
- d. Functioning on a team (multi-disciplinary, project, consultant-client, etc.).
- f. Developing a clear understanding of the civic, professional and ethical responsibility of the engineering profession, especially as it relates to health and safety, and the importance of professional licensure.
- g. Communicating effectively using written, visual and verbal skills. Your proposal and reports will be presented orally as well as in written form.
- h. Developing a clear understanding of the ethical, economic, environmental, social and political impact of civil engineering in a society and global context.
- i. Learning the importance of continuing education and life-long learning in the civil engineering profession.
- j. Learning how to acquire knowledge of contemporary issues that are affecting our infrastructure and environment.
- k. Developing the ability to use the techniques and skills, including engineering economics, and modern engineering tools necessary for professional civil engineering practice.

This course should also give you (ASCE BOK outcomes listed):

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13. A comprehension of key concepts and problem-solving processes used in management.
14. An ability to explain key concepts, and problem-solving processes used in business, public policy, and administration.
15. An ability to explain the role of the leader, leadership principles, and attitudes conducive to effective professional practice.

The Project Process:

You will be expected to participate on a team that will develop a detailed proposal for the assigned work area. After your proposal is accepted, your team will be authorized to commence its work. Your technical team leader will meet regularly with other technical team leaders for purposes of coordinating efforts, sharing information, modifying work plans where appropriate, and planning for delivery of reports and presentations.

The process will take each team and team member from developing a Proposal (learning to assess and communicate capabilities and skills) through defining the work to be done in a Feasibility Study (developing, analyzing and defining alternatives to a problem or opportunity) to preparation of a Preliminary Engineering Report (applying sound civil engineering knowledge and skill to solving a client's problem or enhancing an opportunity).

Grading:

Since the product of this course is based on a team effort, attendance is required for each scheduled class session. **Be on time and do not plan to leave early.** In addition, there will be three presentations that are part of the major deliverables. These presentations may be held at a time other than the scheduled class time. Each team will utilize a different team member to deliver the oral portion of each of their team's three presentations. Throughout the semester, each student will be expected to participate on three functional teams at least once. The functional teams are the Presentation Team, The Revision Team, and the Observation Team. **Members of the Presentation Team and Observation Team will be required to attend the evening presentation practice session. The evening presentation practice will be held outside of regular class time on an evening before the presentation is made to the client during the class period. The date and time of this practice will be determined later in the course.** Your grade for this course will be based on your individual effort, participation, and performance. Participation is described as contribution to the written and graphical deliverables as well as verbal interaction with the other team members. Interaction is vital. Class participation will be noted by the instructor.

Specific grading criteria will include:

1. Attendance – Attendance is required. Each unexcused absence will result in a 1/3-point decrease in your grade, e.g. A- to B+. Excused absences are possible with prior request, or in cases of emergency. **Each class will start promptly at 9:10am. Tardiness is not accepted. Every three tardies without a legitimate excuse will result in a 1/3 grade decrease.**
2. Course Memos (10%) – Seven required memos described in the schedule. ALL memos MUST be submitted and demonstrate a “good effort” in order to pass the course.
3. Daily Assignments (10%) – These assignments are the interim deliverables and other assignments as presented in the schedule.
4. Journals (10%) – Your journal should include everything that should be recorded from this class. This shall include (1) class notes, (2) speaker notes, (3) handouts, (4) field trip and site notes, (5) notes from team meetings, and (6) documentation of significant decisions. All of this shall be submitted at the end of the semester in an organized compendium – either bound, stapled, or combined in some professional manner. Each piece will be checked and graded as will the overall organization.
5. Peer Evaluations (10%)
6. Major Deliverables
 - a. Proposal (10%)
 - b. Feasibility Study (15%)
 - c. Preliminary Engineering Report (20%)
7. Individual Presentation (10%) – This includes your participation on the presentation team and attendance at the evening practice session. All students are expected to attend the three in-class presentations for the major deliverables.
8. Observation (5%) – This includes your attendance at the evening practice session and your participation in helping the presentation team to prepare the presentation for the client.