



CE408A Issues in Civil Engineering Practice

Syllabus, Fall 2017

Instructor: S.E.Caccavale

September 22, 2017

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Catalog Description: (3 units) Introduction to non-technical issues impacting the practice of design professionals in the private and public sectors including: types of organizations; income, expenses, and profit; quality-based selection for obtaining and performing work; contracts; dispute resolution methods; professional ethics.

Prerequisite(s): CE 301(or taking concurrently) and at least 4 of the following courses:
CE 323, CE 334 or CE 335, CE 343, CE 363, CE 370R and CE 370L
If you do not have these courses explicitly completed, please see Dr. Kevin Lansey.

Learning outcomes:

Students should be able to:

1. Identify the types of Engineering Organizations (public versus private).
2. Understand design professions, professionalism and ethics in engineering practice.
3. Understand the differences between RFP, RFQ and SOQ.
4. Know how to prepare and present a Statement of Qualifications (SOQ) to obtain a project design contract.
5. Know how to track project hours and submit timesheets and progress reports.
6. Understand project structure, project tasks, scope and budget
7. Develop a project schedule and budget.
8. Identify project design options and make recommendations.
9. Understand the components of a project and standard deliverables.
10. Learn about contracts, marketing, insurance, liability and partnering.

Learning outcomes support ABET (Accreditation Board for Engineering and Technology, Inc.) program outcomes:

- C. Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.
- D. Ability to function on multidisciplinary teams
- E. Ability to identify, formulate and solve engineering problems.
- F. Understanding professional and ethical responsibility.
- G. Ability to communicate effectively – both orally and written.
- H. The board education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.
- I. Recognizing the need for, and to engage in life-long learning.
- J. A knowledge of contemporary issues.

Instructor: Sal Caccavale, PE, SE
Class time & place: Tuesday 5:00-6:50PM @ Education, Room 353
Thursday 5:00-5:50PM @ Chavez, Room 301
Office Hours: By appointment
Office: CE 208
E-mail: alcaccavale@email.arizona.edu

Other materials will be supplied through the course D2L website.

Evaluation

Attendance and Time Sheets	10%
Peer Evaluation	10%
Quizzes/Homework/Extra Credit	15%
Exams	15%
Design Summary Report	25%
Statement of Qualifications/Presentation	25%

The entire team will carry the same score for the Design Summary Report and the Final Presentation. Individual grades amongst the group will be distinguished by Attendance, Time Sheets and Peer Evaluation.

Semester grades will be determined using the basic guidelines of 90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; 0-59% = F; however, the use of a curve may be considered if deemed appropriate by the instructor. The use of a curve could lower or raise these percentage breaks.

Attendance

Students are expected to attend all class meetings. Attendance is extremely critical in team environment such as this course. If a late arrival or an early departure is anticipated, check with the instructor to be sure that it is done without disturbing the class. The instructor(s), at their discretion, may decide to consider late arrivals or early departures as full absences. A two week absence may result in administrative withdrawal. If a student misses a class, he/she is responsible for all announcements and subjects covered in that class. If in doubt, contact the instructor.

- All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion,
- Absences pre-approved by the UA Dean of Students (or Dean's designee) or course instructors will be honored.

Time Sheets

Initially time sheets will be submitted as directed by the instructor until project teams (firms) are established. Once firms have been established, each Thursday, the principal of each firm will submit a Time Sheet for the previous week's work. Shortly after the beginning of each class, each Principal shall submit the Group's Time Sheet. In a case where the Principal is absent, the responsibility shall pass through the chain of command as determined by the group.

A dated Time Sheet with printed names and a space for signatures is required. Minimum information required for each time sheet shall be the date (the week ending), tasks worked on that week, who worked on the tasks, and the number of hours worked on the tasks by each group member. Each group member shall verify the hours worked each week by initialing their total hours. Failure to submit the Time Sheet and follow the specific directions will result in all team members being documented as having not worked any hours that week and noted as no time sheet submitted.

Peer Evaluation

The Peer Evaluation Grade is intended to be 10% of the total grade in the course. In the case where individual members who, in the majority view of the other team members, are not contributing "their fair share" to the progress of their specific design elements, the Design Summary Report, and the Statement of Qualifications/Presentation; the individuals in question will be reported to the instructor. If the instructor concurs with the team's concerns, these individuals will be sent written warnings cautioning them that if immediate improvement is not made their final course grade may be affected. Depending on the infraction course grades may be lowered or the individual may be dropped from the course at CEEM Department's discretion.

Progress Reports

Two Progress Reports covering on-going work on the Design Summary Report will be submitted by each project team. Progress Reports shall document, at a minimum, Introduction, Work Completed, Work Scheduled and Discussion of Problems Encountered with recommended solutions and Project Assessment.

Quizzes

Quizzes, scheduled or unannounced, may be given during the course. They will be based on information provided in the lectures and homework assignments and will typically be closed book and notes. As students are expected to attend all classes, no make-up quizzes will be provided with the exception of students with pre-approved absences. Students with pre-approved absences are expected to schedule a time with the instructor, within one week of the missed quiz, outside of normal class hours, to take the quiz.

Exams

Several Exams will be given during the semester plus a Final Exam. They will be based on information provided in the lectures and homework assignments and will typically be closed book and notes. As students are expected to attend all classes, make-up exams will only be allowed for students with pre-approved absences. Missing an exam because of illness or emergency reasons will be considered by the Department on a case by case basis in regards to allowing a make-up exam for such an absence. If a make-up exam is approved, students are expected to schedule a time with the instructor, within one week of the missed exam, outside of normal class hours, to take the quiz.

SOQ and Presentations

The SOQ will be a bound report and the Presentation will be a PowerPoint presentation covering the required project elements outlined in the Request for Proposal (RFP) and evaluated in the Design Summary for use on the proposed project. A laptop and a laptop projector will be provided. Your presentation should be well rehearsed and stay within the time constraints. Other rules, including the format and order will be provided.

The final bound reports and SOQ Presentation electronic files will be transmitted to the instructor. Once submitted, no changes may be made. Final Presentations will take place on December 6, 2016 from 5:00 PM to 6:50 PM. All students are required to attend the other groups' SOQ Presentation. Attendance will be taken at the SOQ Presentations. Score cards will be given to the panel outlining the evaluation criteria. Score cards will also be provided to the students. Students are expected to score all other group's presentations for discussion in class December

ADA Compliance

The University of Arizona strives to comply with the provisions of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Students with disabilities must notify the instructor at the beginning of the semester and must contact the Disability Resource Center.

Academic Integrity

Principle Integrity and ethical behavior are expected of every student in all academic work. This Academic Integrity principle stands for honesty in all class work, and ethical conduct in all labs and clinical assignments. This principle is furthered by the student Code of Conduct and disciplinary procedures established by ABOR Policies 5-308 through 5-404, all provisions of which apply to all University of Arizona students. This Code of Academic Integrity (hereinafter "this Code") is intended to fulfill the requirement imposed by ABOR Policy 5-403.A.4 and otherwise to supplement the Student Code of Conduct as permitted by ABOR Policy 5-308.C.1. Failure to follow this code of academic integrity will result in failing the course and be reported to the Dean of Students' office.

Prohibited Conduct

Conduct prohibited by this Code consists of all forms of academic dishonesty, including, but not limited to:

1. Cheating, fabrication, facilitating academic dishonesty, and plagiarism as set out and defined in the Student Code of Conduct, ABOR Policy 5-308-E.6, E.10, and F.1
2. Submitting an item of academic work that has previously been submitted without fair citation of the original work or authorization by the faculty member supervising the work
3. Violating required professional ethics rules contained or referenced in the student handbooks (hardcopy or online) of undergraduate or graduate programs, or professional colleges
4. Violating health, safety or ethical requirements to gain any unfair advantage in lab(s) or clinical assignments.
5. Failing to observe rules of academic integrity established by a faculty member for a particular course.
6. Attempting to commit an act prohibited by this Code. Any attempt to commit an act prohibited by these rules shall be subject to sanctions to the same extent as completed acts.

Student Responsibility

Students engaging in academic dishonesty diminish their education and bring discredit to the academic community. Students shall not violate the Code of Academic Integrity and shall avoid situations likely to compromise academic integrity. Students shall observe the generally applicable provisions of this Code whether or not faculty members establish special rules of academic integrity for particular classes. Students are not excused from complying with this Code because of faculty members' failure to prevent cheating.

Prohibited Behavior

Threatening Behavior is Prohibited. "Threatening behavior" means any statement communication, conduct or gesture, including those in written form, directed toward any member of the University community that causes a reasonable apprehension of physical harm to a person or property. A student can be guilty of threatening behavior even if the person who is the object of the threat does not observe or receive it, so long as a reasonable person would interpret the maker's statement, communication, conduct or gesture as a serious expression of intent to physically harm.

Procedures for Mandatory Reporting of Threatening Behavior

If threatened by any student's conduct to the point of reasonable fear of immediate physical harm to self, others or property:

1. Leave the area immediately.
2. Call the Police by dialing 9-1-1 to request that an officer come to the location. Inform the Police if it is a repeat occurrence.
3. Anyone who observes what appears to be threatening behavior must report it to the Dean of Students Office and in the appropriate case, file a Student Code of Conduct Complaint (see ABOR 5-403).

<i>Fall 2017, Outline - 408A (9/22/2017)</i>
<u>Topic</u>
Overview
Introduction, professions and professionalism
Types of companies, organization charts
Civil Engineering practice
Civil Engineering in the Private Sector (Consulting)
Civil Engineering in the Public Sector
Civil Engineering in the construction industry
Graduate School & Academia
Ethics & Conduct
Ethics in Engineering Practice
Professional Registration
Project development, execution, & management
Project Teams, Introduction
Capstone Senior Project , Introduction
Statements of Qualifications (SOQ's)
Introduction to reading plans and specifications + Reading Assignments
Management of self and others
Role and selection of consultants
Project scheduling - CPM
Sustainable design
Private sector marketing, proposal preparation, bidding, QBS selection
Defining markets, market share, SOQs, public sector QBS,selection process RFQ/SOQ/RFP
Project management - a contractor's perspective
Accounting/financial aspects
Value engineering, "partnering," permitting, project closure, client follow-up
Income, expenses, profits, & Business Accounting Methods
Profit and loss, communications, project overruns, collecting accounts receivable
SOQ's
SOQ Workshops
SOQ presentations
Legal aspects & Insurance
Types of contracts, general conditions, contractual obligations, contract language, clauses, and pitfalls
Being sued & Alternate dispute resolution methods
Course Closeout
SOQ Awards & DCR
Working/reporting session
Other
Homework
Progress Reports
Working sessions
Peer and Instructor Student Evaluations
Career Fair - No Class....Homework Assignment
Attend Public Meeting
Testing
Quizzes
Exams
Final exam
Thanksgiving - No Class