



CE381 Construction Management

Fall 2015

Catalog Description: (3 units) Provide an opportunity to develop an enhanced understanding of construction industry and practices in preparation to contribute to construction firms, project management consultants, and owners upon graduation and to improve project delivery by understanding linkages between design and construction.

Prerequisite(s): Advanced Standing.

Course Objectives:

Students should be able to:

1. Describe the design and construction planning process
2. Interpret construction documents
3. Determine resource needs and costs from construction documents
4. Identify key construction contract elements and legal and regulatory issues, and describe strategies for issue resolution
5. Interpret and assemble a project schedule
6. Identify and describe important issues impacting project oversight and management such as safety, quality control, change orders, and requests for information
7. Track and forecast costs and quantities and evaluate their alignment with and impact on the project schedule
8. Evaluate construction sites for impacts on constructability and safety

ABET outcomes:

Primary

- A. Apply mathematics, science and engineering principles
- K. Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Secondary

- E. Ability to identify, formulate, and solve engineering problems
- F. Understanding of professional and ethical responsibility
- G. Ability to communicate effectively

Instructor: Dean Papajohn
Class time & place: TuTh 8:00-9:15 @ Harvill, Room 107; F 1:00-4:50 @ Site visits TBA
Office Hours: TuTh 9:30-10:30 and by appointment
Office: CE 214B
e-mail: dpapajohn@email.arizona.edu

Textbook: Construction Management, 4th Edition, Daniel W. Halpin and Bolivar A. Senior, Wiley, 2011. (ISBN 978-0-470-44723-9).

Other materials will be supplied through the course D2L website.

Evaluation

Homework, quizzes, and participation	20%
Construction Site Observation Reports & Analysis & Presentation	22%
Construction Project	10%
Tests (2)	32%
Final Exam	16%

Homework assignments will be announced in class and must be submitted **at the start of class** on the assigned due date. No late assignments will be accepted, including assignments turned in during or at the end of the class, unless special arrangements have been made.

Semester grades are determined as follows:

90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; 0-59% = F.

Attendance

Students are expected to attend all class meetings and site visits. 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, at his 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.

Accessibility and Accommodations:

It is the University's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let the instructor know immediately so that options can be discussed. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

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.

TENTATIVE SCHEDULE

(The instructor may change this schedule to accommodate class needs.)

Date	Topics	Readings due (from Halpin & Senior unless otherwise noted)	Homework due
8/25/15	Introduction to construction management	Ch.1	Obtain textbook
8/27/15	Construction drawings & specifications		Log into D2L; HW 1.2 (choose 1, not 3 projects), 1.3; Select a project site to observe during the semester
8/28/15			
9/1/15	APWA Conference in Phoenix (No class)	Building Tall, p. 24-28, 153-168	Ch. 1 Quiz (D2L)
9/3/15	Construction in the Project life cycle; Project delivery methods and financing; Project stakeholders	Ch. 2, App. B, C, D, F Look at CIG.	
9/4/15	Site Visit	Timothy Queely, Ray McCoy, Hensel Phelps	TAA Air Traffic Control Tower (2:30-4:00)
9/8/15	Quantity take off & cost estimating	Ch. 16	S.O.#1 HW 2.1, 2.10 (estimate), 2.16, 2.18
9/10/15	Equipment ownership SP3, SP4	Ch. 13	HW 16.1, 16.4, 16.5, 16.6 Ch. 16 Quiz (D2L)
9/11/15	Site Visit		
9/15/15	Equipment productivity SP5, SP6	Ch. 14	HW 13.3, 13.4, 13.5
9/17/15	Construction contracts Review for Exam 1 SP7, SP8	Ch. 4	S.O.#2 HW 14,1-14.5 Ch. 4 Quiz (D2L)
9/18/15	Site Visit	Ron Morris, Empire-CAT	Empire-CAT S. Nogales Hwy
9/22/15	Exam 1		
9/24/15	Review Exam 1 Partnering, issue resolution	Ch. 3	

	SP9, SP10		
9/25/15	Site visit	Mike Censky, HSL	Encantada Apartments, Shannon and Magee (2:30-4:00)
9/29/15	Quantity take off	Guest speaker: Rob Presuhn & Travis Destacio, Granite	S.O.#3,
10/1/15	Cost estimating	Rob Presuhn & Travis Destacio, Granite	HW Qty takeoff
10/2/15	Team meetings to work on cost estimating assignment	Rob Presuhn & Travis Destacio, Granite	Meet location TBA
10/6/15	Cost estimating	Rob Presuhn & Travis Destacio, Granite	HW Cost Est
10/8/15	Bid opening	Rob Presuhn & Travis Destacio, Granite	HW Bid prep
10/9/15	Bid Closing at Granite Construction	Rob Presuhn & Travis Destacio, Granite	HW Bid Granite Construction Office 4115 E. Illinois St., Tucson, AZ 85714
10/13/15	Construction planning SP11, SP12	Ch. 7	
10/15/15	Virtual Design and Construction (VDC)	Guest speaker: Eric Cylwik, Sundt The Business Value of BIM (Bldg Info Modeling)	S.O.#4
10/16/15	Site Visit		
10/20/15	Construction planning Construction scheduling SP13, SP14		HW 7.1, 7.3, 7.4
10/22/15	Construction scheduling SP15, SP16	Ch. 8	HW 8.1, 8.2, 8.3
10/23/15	site visit		
10/24/15	Homecoming weekend		
10/27/15	Construction scheduling Review for exam 2 SP17, SP18		HW 8.5, 8.6, 8.7 S.O.#5
10/29/15	Exam 2		
10/30/15			

11/3/15	Review Exam 2 SP19, SP20		
11/5/15	So. AZ Construction Career Days (No class)		Tucson Rodeo Grounds
11/6/15	So. AZ Construction Career Days		Tucson Rodeo Grounds
11/10/15	SP21, SP22		
11/12/15	Cash Flow SP23, SP24	Ch. 11	S.O.#6
11/13/15	Site Visit		
11/17/15	Cash Flow SP25, SP26		HW 11.1, 11.3, 11.4
11/19/15	Project delivery: Design-Build Project funding	Guest speaker: Travis McCarthy, Sundt Design-Build Ch. 12	
11/20/15	Site visit		
11/24/15	Safety	Ch. 19; Guest speaker Jessie Atencio, ADOSH	Project
11/26/15	Thanksgiving - No Class		
11/27/14	Thanksgiving - No Site Visit		
12/1/15	Cost Control SP27, SP28	Ch. 17	S.O.#7 HW 12.2, 12.4, 12.5 Ch. 19 Quiz (D2L)
12/3/15	QA/QC, inspections and materials management, SWPPP	Ch. 18 Chuck Gajda, PE, IRS, Large Business and International Division	S.O.A. HW 17.1, 17.2, 17.7, 17.9, 17.10, 17.11
12/4/15	Site Visit		
12/8/15	Review for Exam 3 SP1, SP2		HW 18.1, 18.3
12/17/15 8-10 AM	Exam 3		

S.O. = Site Observation

S.O.A. = Site Observation Analysis

SP# = Student presentation on site observations

HW = Homework problems from Halpin and Senior

CIG = Construction Institute Glossary;

<https://www.construction-institute.org/scriptcontent/glossary.cfm?section=aboutcii>

Building Tall by John Tishman is available on-line from the UA Library.

<http://lib.mylibrary.com.ezproxy2.library.arizona.edu/Open.aspx?id=333441>

Site visits require appropriate attire, including a hard hat and safety vest which can be checked out the day of the site visit from the CEEM office at the Civil Engineering Building, Room 206. Also required are boots and pants (preferably jeans). It is recommended to use sunscreen, bring water, and use safety glasses.