

**M.E. Rinker, Sr.**  
**School of Building Construction**  
**University of Florida**  
**Semester Course Outline**

**BCN 3224 – Construction Techniques**

**Spring 2016**

**3 Credits**

Honor Code: Students are expected to comply with the spirit and intent of the University of Florida Honor Code, which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” Students are required to bring a photo ID to all tests to be presented to the proctor upon completion of the exam.

Instructor: Jim Sullivan, Ph.D., CGC 1516549, LEED A.P.  
sullj@ufl.edu

Office Location: 309 Rinker Hall

Meeting Periods:

Section(s)	Days	Hour	Room
TBA			

Prerequisites: Acceptance in UF BCN program.

Objectives: Students will learn elements relating to the principles of construction methods and techniques. Basic understanding of the built world that surrounds us and how it is constructed.

Description: Study of vertical construction process to include wooden platform frame construction, cast-in-place and pre-cast concrete construction, and steel erection. Included are masonry construction, interior and exterior finishes, vertical transportation, roofing, and other building components.

Method: Two two-hour lecture/discussion periods per week with corresponding reading assignments from the text and lab. Text assignments should be done before the class in which they are discussed. Students are responsible for the content of all reading materials whether or not the material is covered in class. We will also discuss current issues, and articles may be posted to the class website for review. Although class is scheduled for two meetings per week, several lab class meetings will be substituted with construction site visits or individual/group projects. Perry Yard demonstrations will be scheduled whenever possible on Fridays during lab time. Other times may be scheduled for the convenience of the presenters.

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- Text Required: Mehta, Madan, Scarborough, Walter, and Amrpreist, Diane. Building Construction – Principles, Materials, and Systems (Current). ISBN – 10:0-13-506476-7.
- Florida Building Code, Southern Building Code Congress International, Inc. Latest edition – obtained directly from – Affordable Housing (2<sup>nd</sup> Floor of Rinker). Check with me regarding pickup date.
- HBR's 10 Must Reads – On Leadership. ISBN 9781422157978
- AIC PDF – Posted on class site
- Text Optional / Suggested for Grad Section: Simmons, H. Leslie: Construction Principles, Materials and Methods; John Wiley & Sons, 2001 Six Edition or later (UF Bookstore Price \$99 new / \$79 used).
- Extra Credit Book (s): Crawford, Matthew B.: Shop Class as Soulcraft; Penguin Books, 2009.
- Roberts, Wess: Leadership Secrets of Attila the Hun; Business Plus, 1990 (reissue 2009).
- Reading Assignments: Reading assignments will be posted on class website as semester progresses.
- Tests: Three exams will be given during the semester. The format may include short answer, essay, multiple choice, and/or sketches. Make-up tests must occur within three days of previous exam. Only one make-up exam allowed per semester.
- Final Exam: Final exam will be given during finals week as scheduled by the BCN office – it does NOT match the University schedule. The final will be comprehensive.
- Attendance: Attendance is required. You are allowed three personal drops throughout the semester for any reason – no documentation required. The fourth missed class will result in a 3% reduction in your final grade, the fifth missed class will result in a 6% reduction in your final grade, and a sixth missed class will result in a 9% reduction of your final grade. Being late for class counts as an absence at the discretion of the instructor. Example you earn 85% of total points but miss six classes your final grade will be a 76%.
- Field Trip Reports: Individual Field Trip Reports will be submitted the following class day after a field trip has taken place. Reports will be graded for completeness. Blank Field Trip Reports are found on the class website.
- Digital photo reports may be substituted for written reports with approval from instructor. Minimum 20 photos may be submitted (labeled by Division Number and brief description). A word document containing site information must also be submitted. Each submission must be submitted in a CD format which will be returned. Same timeline as written progress reports apply.
- Undergraduate Volunteer Hours: It is expected that you will participate with a construction project during the semester. Rebuild Gainesville will coordinate your time. Groups of 10 students will take on individual projects. You will be responsible

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supporting estimate, build, and close-out of paperwork. Teams will receive a team grade as well as an individual grade based on team member's self-evaluation and group evaluations.

Grade Makeup:	Final grades will be on a similar scale as follows depending on work covered during the semester (pts are total possible):	
	Three in-term exam grades @ 100 points	300
	Final exam	100
	Team Field Trip/Project Reports	50
	Sketchup/Wood Model Framing Cube	50
	Volunteer Hours	50
	Leadership Assignments	50
	Homeworks/Quizzes/In-class Assignments	50
	<b>Note Attendance Potential Deductions</b>	

Grade Scale: Grades will be given according to the following scale. Divide the total points you earn by total possible points. **Decimal points will not be rounded.**

A	93.0-100
A-	90.0-92.99
B+	87.0-89.99
B	83.0-86.99
B-	80.0-82.99
C+	77.0-79.99
C	73.0-76.99
C-	70.0-72.99
D+	67.0-69.99
D	63.0-66.99
D-	60.0-62.99
E	Less than 60

Extra Credit: Select one of the optional books for a max of 15 bonus points. March 11th. Min four pages single spaced with references. Paper should cover your reasons for choosing construction or superintendent track.

Class website: E-learning/webct/Sakai : [lss.at.ufl.edu](http://lss.at.ufl.edu)

Quality: It is expected that everything submitted for a grade will be professional with correct spelling and grammar. With regard to homework/quizzes – 10 points is for going above what is asked, 8-9 points for meeting the minimum of what is expected, 5-7 points for quality work that may not be correct in scope. When available use software to produce your work. The goal is for all work to represent what you would fax/submit to your immediate boss in a job scenario. There is no credit for submitting late work. I will drop the lowest score for each type of assignment (i.e., quizzes, homework, codebook quizzes)

Communication: No work will be accepted via an e-mail submission unless structured submittal via e-learning as an upload. Please try to communicate with me during office hours or before/after class periods. You are important to me as a student - I am simply overwhelmed with electronic communication. Please feel free to keep me in the loop with regard to your situation but I am

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limited to respond. I will respond to e-mails/texts at my discretion. You are responsible for addressing grades/omissions within one week of the grade being posted on e-learning. After one week the grade/input stands for the class regardless of cause or circumstance.

**Cell Phones:** Cell phone use is not allowed in classrooms/Perry Yard. Use of a cell phone during class will discount attendance. Use of cell phones during an exam will result in failing the exam.

**Late Work:** Late Work will be accepted at 50% of potential points no later than the start of the next scheduled class. Any exams missed must have documentation regarding cause and must be taken prior to the start of the second scheduled class from the time of the missed exam.

**Course Learning Objectives (CLO) :**

- ➊ Relate basic construction vocabulary and terminology of construction for various building elements/components.
- ➋ Design a construction logistics plan (parking and access routes, storage areas, project limit fencing, etc).
- ➌ Analyse construction techniques associated with wood, steel and reinforced concrete framing; floor systems; roof systems; masonry construction; curtain walls; building insulation; and interior and exterior finishes.
- ➍ Set up construction activities sequence and illustrate the importance of safety and constructability issues.
- ➎ Interpret and extract information from Florida Building Code.
- ➏ Evaluate the latest available construction materials and techniques, and be familiar with current issues such as mold and mildew.

*ACCE = American Council for Construction Education*

*SLO= Student Learning Outcome*

CLO	ACCE SLO	Course Learning Outcome (CLO)	Assignment(s)	Percent Students Passing with a minimum 70%
1		Relate basic vocabulary	Text Home works / Final Exam	80%
2	SLO 8	Design logistics plan	Sketch-up fieldtrip assignments / Final Project	80%
3		Analyze techniques	Text Homeworks	80%
4	SLO 3	Set-up plan and highlight safety	Final Safety Project	80%
5		Interpret building code	Codebook home works	80%
6		Evaluate latest materials / weatherproofing / Sustainability	Perry Yard Activities / Sustainable Lecture / Roofing Project	80%

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Upon graduation from an accredited ACCE 4-year program a graduate shall be able to:

1. Create written communications appropriate to the construction discipline.
2. Create oral presentations appropriate to the construction discipline.
3. Create a construction project safety plan.
4. Create construction project cost estimates.
5. Create construction project schedules.
6. Analyze professional decisions based on ethical principles.
7. Analyze construction documents for planning and management of construction processes.
8. Analyze methods, materials, and equipment used to construct projects.
9. Apply construction management skills as an effective member of a multi-disciplinary team.
10. Apply electronic-based technology to manage the construction process.
11. Apply basic surveying techniques for construction layout and control.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
13. Understand construction risk management.
14. Understand construction accounting and cost control.
15. Understand construction quality assurance and control.
16. Understand construction project control processes.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
18. Understand the basic principles of sustainable construction.
19. Understand the basic principles of structural behavior.
20. Understand the basic principles of mechanical, electrical and plumbing systems

### AIC Exam Referenced

Topics for this Course:

#### II. Engineering Concepts

- Engineering Material Properties (agg, concrete, masonry, steel, wood)

#### III. Management Concepts

- Contract types
- Business ethics

#### IV. CSI Materials, Methods, Plans/Specs

- Construction equipment

#### VII. Planning, Scheduling, and Control

- Logical Sequence of Design, Procurement, and Construction.

#### VIII. Construction Safety

- Tool box talks covering all topics

#### IX. Surveying and Project Layout

- Equipment
- Topography

#### X. Project Administration

- Procurement of Resources
- Duties/Responsibilities
- Organizational Chart
- Design, Procurement, and Construction Team
- Craft Trade Descriptions
- Jobsite Administration
- Project Closeout (punchlist/completion/occupancy)