Temporary Structures

BCN 4423

General Information

Prerequisite: BCN 3431C

Class:	Website:	https://ufl.instructure.com
	Room:	RNK 220
	Times:	Monday 10:40 - 12:35
		Thursday 1:55 - 3:50
Instructor:	Dr. Damon Allen	
	Email:	mvbdta@ufl.edu and damontallen@gmail.com
	Phone number:	352-234-3266 (cell number - it can receive texts)
	Physical Office:	Rinker 340
	Office Hours:	2:00 - 4:50 P.M. Monday
		11:45 - 1:40 P.M. Wednesday
		Or by appointment (or if I am in my office)
	Online Office:	Contact me via email
	Online Hours:	As soon as I can respond
Teaching Assistant:	Shirley Morque	Ph.D. Candidate
	Email:	nellymorque@ufl.edu
	Office:	Rinker 341

Required Text

1. National Design Specifications for Wood Construction (NDS), by American Forest and Paper Association (2015 edition). The NDS and Supplement are available as free view only pdf downloads at http://www.awc.org/standards/nds.php.
2. Johnston, David W. Formwork for Concrete 8th edition: ISBN: 9780870319129 There may be paperback versions available that may be cheaper.
3. Select Lynda.com Tutorials on Excel (free for students and you will need to look at them.)
4. Additional reference material will linked in the notes and on the class website.

The 2015 NDS will be required by the second week of class so be sure to download a copy. If you are interested in worked examples, the 2005[1] version of the NDS is sold as a package with several other free documents including worked examples. These worked examples will not be necessary for our class but if you think you might be using the Timber Design code in the future I recommend that you purchase it while you still are a student. See the AWS requirements for student discounts below.

> For students the approach we use is to have them purchase the 2005 Wood Design Package at the student rate of $75. They will then receive a complementary membership with the American Wood Council. Students must use their university email address as their primary email when they order so that we can verify their status as a full time student and give them the student rate. If their student status cannot be verified they will be charged the full price of $150.

[1] Just to be clear, we will only be using the 2015 version.

Additional Text

1. Design of Wood Structures 6th edition, ISBN: 0071379320
2. Forest Products Laboratory, Wood Handbook: Wood as an Engineering Material http://www.fpl.fs.fed.us/documnts/fplgtr/fpl_gtr190.pdf (509 pages)
3. Temporary Structure Design by Chris Souder, ISBN-13: 978-1118905586
4. APA The Engineered Wood Association, Design/Construction Guide: Concrete Forming
5. APA The Engineered Wood Association, Plywood Design Specification

Description of Course

To study the temporary structures that contractors have to build in order to construct the primary structure. This includes form work, scaffolding, support excavation systems, and equipment for hoisting materials, personnel, and erecting structures.

Subject Aims

This course is intended to teach temporary construction methods and design principles to ensure stability of structures during all phases of the construction process. This includes: concrete form work, scaffolding, hoisting personnel and materials, and erecting structures.

Course Learning Outcomes (CLOs)

1. Recognize that temporary structures (TS) have a major impact on schedule, cost and quality of construction projects and have been responsible for hundreds of deaths on construction sites (SACS1, ACCE SLO 3).
2. Analyze and design wood beams, columns, and trusses using NDS for Wood Construction (SACS 1, ACCE SLO 19).
3. Analyze and design form work for concrete walls, beams, slabs, and columns (SACS 1, ACCE SLO19).
4. Identify alternative form work systems and select the most appropriate one (SACS 1, ACCE SLO 8).
5. Review alternative scaffolding systems and discuss their standard of practice (SACS 1, ACCE SLO8).
6. Discuss options for the support of excavation systems (SACS 1, ACCE SLO 8).
7. Identify erection equipment to select the most suitable equipment for hoisting materials, personnel, and erecting structures (SACS 1, ACCE SLO 8).

ACCE - American Council for Construction Education
SLO - Student Learning Outcome
SACS - Southern Association of Colleges and Schools

ACCE SLO 3.	Create construction safety plan	- Reinforce
ACCE SLO 8.	Analyze methods, materials, and equipment used into construct projects	- Direct Assessment
ACCE SLO 19.	Understand the basic principles of structural behavior.	- Direct Assessment

SACS 1. Apply knowledge of engineering, materials, methods, equipment, and processes to safely construct buildings and structures.

Assessment	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6	CLO 7	Target
Module 5 Discussion	X							At least 80% receive a B or better
Test 2 (or equivalent)		X						At least 80% receive a C or better
Test 4 (or equivalent)			X					At least 80% receive a C or better
Module 1 Quiz				X				At least 80% receive a C or better
Module 10 Quiz					X			At least 80% receive a C or better
Module 11 Quiz						X		At least 80% receive a C or better
Final Project							X	At least 80% receive a B or better

Table 1: Assessment Matrix

Course Activities

- Lectures in the form of on line presentations
- Team and individual assignments involving designing elements of form work for a concrete structure
- Guest Lectures (as available)
- Laboratory work in the Perry Yard
- In-class discussions

Assessment

The assessment will be based on individual student's demonstration of fulfilling the course objectives as set out in the syllabus and there will be no leniency based on previous accomplishment in other classes. The course will be examined using:

- Individual Assignments
- Team Assignments
- Class Discussion Participation
- Lab and Guest Lecture Participation
- Quizzes
- Final Project

The course instructor reserves the right to grade assigned problems either on detailed checking or based on attempt as well as the right to not grade work that does not satisfy mandatory specifications.

Make up assignments, quizzes, and tests will only be given upon proof of extenuating circumstances or prior arrangements. Please pay close attention to the deadlines on Syllabus page, and turn your work in before it is due.

Grading System

Individual Assignments:	20%
Team Assignments:	20%
Class Discussion about Safety:	5%
Participation in Class:	5%
Participation in Lab:	5%
Guest Lecture Attendance[2]:	5%
Quizzes:	30%
Final Project:	10%
Total:	100%

[2]If I am unable to schedule any guest lectures this semester, this portion of your grade will be part of your lab participation.

Grading Scale

A-: 90% - 92.9%	A: 93% - 100%	
B-: 80% - 82.9%	B: 83% - 86.9%	B+: 87% - 89.9%
C-: 70% - 72.9%	C: 73% - 76.9%	C+: 77% - 79.9%
D-: 60% - 62.9%	D: 63% - 66.9%	D+: 67% - 69.9%
E: $< 60\%$		

Homework Policy

Assignments will be accepted up to the established time. Any Assignment turned in after the deadline will be graded at 50% of the original credit. Any assignment turned in more than 24 hours late will not be accepted and the student will receive a 0 (zero) on the assignment. All work turned in for this course is expected to be of professional quality in content and presentation.

Participation Policy

Participation is part of your grade. There is one class discussions on the schedule (which counts as have the class participation) and I will announce any additional discussions, and guest lectures in advance. If you are going to miss an event, get permission ahead of time for an absence.

Students are expected to act with integrity and composure at all times and there will be zero tolerance for unbecoming conduct which includes, but is not restricted to rude comments and disruptive behavior.

Attendance Policy

I will be using your attendance as part of your participation grade in both in class and labs. If you have an unavoidable reason for missing class, either inform me ahead of time or as soon as possible. Since the lectures are available on-line, I am not as concerned with missed class days unless there is a class discussion scheduled.

Honor Code

Be aware of the Honor System of University of Florida. All students in this course are subject to the requirements of the University of Florida's Honor Code. Although joint work on assignments may be acceptable in some cases, duplication of an assignment either manually or electronically will be dealt with with as an act of academic dishonesty. We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

Remedies

Students who fail to comply with the listed behavior will be excused from the class and advised to seek readmission though the School's Director of Undergraduate Studies. University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

Schedule

Module	Topic	Assignment	Due Date	
1	Introduction	Syllabus Quiz	Thu	Aug 25
		Chapters 1-3 in Formwork Text	Mon	Aug 29
		Module 1 and Reading Quiz	Tue	Sep 06
2	Timber Beam	Timber Beam - Hand Solution	Mon	Sep 12
		Timber Beam - Hand Verification	Tue	Sep 13
		Timber Beam - Spreadsheet Assignment	Wed	Sep 14
		Timber Beam - Complete Package	Thu	Sep 15
		Module 2 Quiz	Tue	Sep 20
3	Timber Column	Timber Column - Hand Solution	Fri	Sep 23
		Timber Column - Hand Verification	Mon	Sep 26
		Timber Column - Spreadsheet Assignment	Tue	Sep 27
		Timber Column - Complete Package	Wed	Sep 28
		Module 3 Quiz	Mon	Oct 03
4	Bracing	Bracing Individual Assignment	Tue	Oct 04
		Module 4 Quiz	Thu	Oct 06
5	Span Limits and Safety	New Module 5 Discussion	Mon	Oct 10
		Chapters 4-6 in Formwork Text	Tue	Oct 11
		Module 5 Quiz	Thu	Oct 13
6	Wall Form	Wall Form - Hand Solution	Mon	Oct 17
		Wall Form - Hand Verification	Tue	Oct 18
		Wall Form - Spreadsheet Assignment	Wed	Oct 19
		Wall Form - Complete Package	Thu	Oct 20
		Wall Form Individual Assignment	Mon	Oct 24
		Wall Form Lab	Tue	Oct 25
		Module 6 Quiz	Thu	Oct 27
7	Column Form	Module 7 Quiz	Mon	Oct 31
8	Slab Form	Slab Form - Hand Solution	Thu	Nov 03
		Slab Form - Hand Verification	Mon	Nov 07
		Slab Form - Spreadsheet Assignment	Mon	Oct 31
		Slab Form - Complete Package	Tue	Nov 01
		Slab Form Individual Assignment	Thu	Nov 03
		Chapters 7-9 in Formwork Text	Fri	Nov 04
		Module 8 Quiz	Mon	Nov 07
9	Re-shoring	Module 9 Quiz	Thu	Nov 10
10	Scaffolding	Module 10 Quiz	Mon	Nov 14
11	Excavation	Module 11 Quiz	Mon	Nov 21
12	Equipment	Final Project	Wed	Dec 07

Fall Semester Holidays	
Mon	Sep 05, 2016
Fri	Oct 14, 2016
Fri	Nov 11, 2016
Wed	Nov 23, 2016
Thu	Nov 24, 2016
Fri	Nov 25, 2016