Temporary Structures

BCN 4423C

Prerequisite: BCN 3431C

Class Information:	Website:	https://ufl.instructure.com/courses/314024
	Room:	On-line
	Time:	NA
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 344
	Online Office:	FAQ Discussion Page
Online Office Hours:	10:00 am – 11:00 am Monday – Friday	
	But I'll respond to an email as soon as I can outside of office hours	
	I may not be able to get back with you immediately so don't wait until the last minute to ask a question.	
Physical Office Hours:	By appointment (or if my door is open)	
TA:	James Sorce	
	Email:	jsorce73@ufl.edu

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. Hurd, M. K. "Formwork for Concrete" 7th edition: ISBN-10: 0870311778
   There are paperback versions available that may be cheaper. Additionally, there are some copies available in the office.
   - Please note this is *not* the newest edition available however I am waiting a couple of semesters so used copies will be available for purchase before I adopt this text. You may purchase the new edition however you will be responsible for any discrepancies in content with regards to the availability of answers to course questions.
3. Additional reference material will linked in the notes and on the class website.

The NDS will be required early in the course. The 2015 Wood Design Package can be used by downloading the "View Only" pdf versions of the NDS for Wood Construction and NDS Supplement from the American Wood Council's website. However if you want a hard copy I recommend the 2005 version. The 2005 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."

FYI the American Wood Council has some online material for self study at their Online Courses page which includes a course on determining wind loading which is not covered in this course. A substantial portion of this material is also available to view for free. Officially taking the course does require a membership registration.

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"
6. Select Lynda.com Tutorials on Excel (free for students)

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 (CLO):

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 (SACS 1, 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 SLO 19).
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 SLO 8).
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
- Virtual “in-class” practice problems as requested
- Team and individual assignments involving designing elements of form work for a concrete structure
- Virtual field trip(s) (as scheduling permits)
  - Unlike actual field trips, you will not be needing need protective equipment. These will be in the form of an online video.
- Online 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
- Course 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:	30%
Participation in Class Discussions:	10%
Course Participation:	10%
Quizzes:	20%
Final Project:	10%
Total:	100%

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:

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:

Participation is mandatory. Class discussions, will be announced in advance so it will be your responsibility to get permission ahead of time for an absence if you will not be available.

Participation grade will be computed in proportion to the amount of comments during the class discussions and group discussions (on team home page).

- Individual assignments will not require substantial discussion, just a minimum of two posts on your team discussion page ("I've started the assignment", and "I've finished the assignment").
- Sharing answers on Individual assignments, prior to the everyone's submission, will be regarded as cheating.
- Sharing answers on Team assignments with your team members is a requirement, however, sharing answers with other teams will also be regarded as cheating.

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:

See Participation

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.

Topical Outline:

Module	Assessment
Start Here Section/Course Introduction	Syllabus/Handbook Quiz
Module 1: Introduction to Timber	Quiz
Module 2: Timber Beam	Team Assignment
	Quizzes
Module 3: Timber Column	Team Assignment
	Quizzes
Module 4: Bracing	Quiz
	Individual Assignment
Module 5: Span Limit Derivations and Form Work Safety	Quiz
	Discussion
Module 6: Wall Form	Individual Assignment
	Team Assignment
	Quizzes
Module 7: Column Form	Quiz
Module 8: Slab Form	Individual Assignment
	Team Assignment
	Quizzes
Module 9: Re-shoring	Quiz
Module 10: Scaffolding	Quiz
Module 11: Excavation	Quiz
Module 12: Equipment	Final Project