Syllabus-Spring, 2013

COURSE DESCRIPTION

2) Hours Lecture (2) Hours Laboratory. Materials, assembly techniques and methods, and sequences of the commercial construction process. Emphasis on engineering and design, specifications, materials acquisition and the utilization of concrete, steel, masonry and wood in construction. Laboratory exercises relating to the application of the specific techniques relating to the engineering and design of concrete, steel and masonry structures: further application to strength characteristics including the resistance to bending and shearing loads, material hardness, concrete and timber compressive and tensile strengths.

Building Information Modeling (BIM) and project scheduling will be introduced throughout the course and in particular, as part of the SEMESTER PROJECT. It will be incorporated into the design and construction of formwork for concrete. More information will be presented as it is developed.

PROFESSOR

Dr. Gregory P. Wilson, P.E.
Assistant Professor
College of Science, Engineering, and Agriculture

CONTACT INFORMATION

Office: 218 AG/IT Bldg.
Office Hours: **Posted**
Others by Appointment
Telephone: 903-468-8115 (Direct)
Email: **gregory.wilson@tamuc.edu**

CLASS MEETINGS INFORMATION

MW 0800 – 0850 AGIT 118A
F 0800 - 0940 AGIT 125

Laboratory Exercises and Hours

1. Concrete Testing Exercise
2. Tensile, Stress/Strain Exercise
3. Concrete Mix Design Exercise
4. Brunell Hardness Testing Exercise
5. Truss Deflection Exercise
6. To Be Announced

Typically one laboratory exercise every other week including data gathering, reduction and presentation. More discussion during the first two weeks of the course.

COURSE REQUIREMENTS & DETAILS

This course demands that each student develops an understanding of the building construction process including the behavior of basic materials including wood, steel, concrete, and masonry products and the related engineering and mathematical relationships required.

Wood, steel, concrete, and their applications to the construction process are presented. Typical construction systems are discussed along with typical stresses and other engineering concepts along with their applicable calculations are part of the course. Numerical examples are presented as method of visualizing the concepts being presented to assist the student in understanding current concepts as well as preparation for future construction engineering topics.

MATHEMATICS REQUIREMENTS

Please note the mathematical physics pre-req's for this course.

Please be advised that additional mathematical concepts will be presented to support the development of engineering principals and their required calculations.

COURSE OUTLINE & OVERVIEW

Section	Topic
Chapter 4 and Basic Course Introduction	
4.1 – 4.9 and Basic Course Introduction Load Resistance. Steel, Concrete and timber. Weeks, 1, 2, 3	**Attendance, general course reqs. Review of syllabus. Afternoon laboratory time will be required. Please advise as to schedules so that appropriate times can be scheduled for everyone..**
BIM INTRODUCTION	
BIM/SYNCHRO INTRODUCTION	Software introduction/TUTORIAL/Application to semester project/L3 projects/Competition

	To be continued throughout semester.
LABORATORY EXCERCISES	
Presentation of specific laboratory equipment and exercises to gain knowledge of their operation and data.	Specific exercises will be performed throughout the semester. Afternoon laboratory time will be required. Please look at schedules.
Section	**Topic**
Chapt. 19 Concrete Construction Part 1	**SEMESTER PROJECT INTRODUCTION**
19.1 – 19.10 Week 6, 7,	Shoring, formwork design, reinforcing, splices, couplers; general principals and design practices
Chapt. 20 Constrete Construction Part 2.	
20.1 - 20.6 Weeks 8	Elevated concrete floors; precast concrete; beam supported concrete floors and slabs
Chapt. 21 Soils and Foundation Construction	
21.1 - 21.8 Weeks 9, 10,	Soil classification; earthwork and excavation;bracing and trenching;shallow foundations; deep foundations.
Chapts. 22 Masonry Materials Part 1	
22.1 – 22. 8 Week 11	Masonry, mortar, joint thickness, bricks, expansion joints
Chapt. 23, 24 Masonry Materials, Part 2.	
23. 1 – 23. 5, 24.1 – 24.9 Week 12	Bond beams; CMU's, size and shapes, shrinkage control; bearing walls, column beam systems; Vertical reinforcement
Chapt. 1 Principals of Construction	.
1.1 – Complete Chapter 1.2 Week 13	Construction management; project description; how is a project delivered. Steps.
PRESENTATION OF SEMESTER PROJECTS	FINAL EXAM WEEK (AS SCHEDULED)

ASSESSMENT OF STUDENT OUTCOMES

Upon satisfactory completion of this course, the student:

1. Is prepared to demonstrate by examination that the student possesses and understand of basic material properties with respect to **concrete.**
2. Is prepared to demonstrate by examination that the student possesses and understand of basic material properties with respect to **timber and wood**..
3. Is prepared to demonstrate by examination that the student possesses and understand of basic material properties with respect to **steel..**
4. Is prepared to demonstrate by examination that the student possesses and understand of basic material properties with respect to **soils**.
5. Can evaluate, analyze and predict stresses in **concrete** and demonstrate by examination and understand the basic equations to do so.
6. Can evaluate, analyze and predict stresses in **steel** and demonstrate by examination and understand the basic equations to do so.

7. Can evaluate, analyze and predict stresses in **timber and wood** and demonstrate by examination and understand the basic equations to do so.
8. Can evaluate, analyze and predict stresses in **soils** and demonstrate by examination and understand the basic equations to do so.
9. Can evaluate, analyze and predict stresses in **masonry** and demonstrate by examination and understand the basic equations to do so.
10. Is prepared to demonstrate by examination that the student possesses and understand of basic material properties with respect to **masonry.**
11. Student can demonstrate through oral presentations and underestanding
12. Understands and is prepared to discuss and demonstrate by calculation various loads on buildings including **live, dead, seismic, and wind**.
13. **HAS A SATISFACTORY KNOWLEDGE OF BIM/SYNCHRO SOFTWARE SYSTEMS AS INDICATED BY COMPLETION OF SEMESTER PROJECT**.

COURSE TEXT

Building Construction, Principals, Materials, and Systems. Metha, Scarborough, and Armpriest. ,Latest. Edition. Prentice Hall. ISBN 0-13-049421-6.

ATTENDANCE POLICY

Every student is expected to attend every class. No effort will be made to track down missing students and/or assignments. Each student is responsible for turning in the assigned work **ALL POINTS ARE EARNED IN CLASS ON PROCTORED EXAMS AND QUIZZES.**

COURSE GRADING

Two (2) exams. @ 150 Each	= 300 Points
CONCRETE FORMWORK DESIGN	= 300
Laboratory Exercises 4 @ 100 Pts.	= 400
TOTAL POSSIBLE POINTS	**= 1000 Pts.**

10 Point Percentage Grading Scale will be used throughout the semester.

90 – 100	**=**	**A**
80 - 89	**=**	**B**
70 - 79	**=**	**C**
60 - 69	**=**	**D**
< 60	**=**	**F**

EXAMINATION DATES

The following dates have been established for the two examinations to be given in the spring, 2012. Every effort will be made to hold to this schedule to assist you in planning your work schedule, etc.

Exam #1	**Week 6**
Exam #2	**Week 12**

Please note!! All exams are closed notes, closed book.

CLASSROOM POLICIES

Please turn off cell phones, pages, beepers, etc. during class times. *The use of tobacco products during any class period will not be allowed.*

ACADEMIC INTEGRITY

Academic dishonesty of any kind will not be tolerated. You run the risk of receiving a failing grade in the course in addition to expulsion from the University. Please refer to ***Code of Student Conduct*** in the Student Handbook for all details.

NOTE!

STUDENT BEHAVIOR

Members of the student body at Texas A&M University-Commerce are expected to obey all federal, state, and local laws in addition to the regulations of the University.

ADA

Each division within the University is aware of the needs of the disabled student and is ready and willing to work with each student to solve problems as they arise. The Supervisor of Services is located in the Student Services Building, 3rd. floor, (903)- 886-5835. The Compliance Office for the Disabled is located in the Business Administration Building 2nd. Floor, room 296.

STUDENT SIGNATURE PAGE

Your signature on this page signifies that you have **READ** and **UNDERSTAND** the contents of this syllabus and have had **ALL** questions answered. Please Print out a copy of this page, sign and turn in.

_____
Student Signature

_____
Printed Name

_____
Date

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