



## CONE 411 Steel & Concrete Design (Fall 2014)

: Planning and field engineering for concrete and steel construction. Structural mechanics of concrete beams, slabs, columns, walls and footings. Steel structures including tension members, compression members, flexural members, connections, and building codes. (*Prerequisite: CONE 331*)

**Instructor:** Ilseok "Eddie" Oh, Ph.D., Associate Professor, Construction Engineering  
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**Office Hour:** Monday ~ Friday 11:00am - Noon

**Lecture/Lab:** (M & W) 08:00 - 08:50am, AGIT 118A / (F) 08:00 - 09:40am, AGIT 118A

**Required Text:**

1. Design of Reinforced Concrete, 9<sup>th</sup> Ed., Jack C. McCormac and Russell H. Brown, Wiley  
ISBN 978-1-1181-2984-5
2. Structural Steel Design, 5<sup>th</sup> Ed., Jack C. McCormac and Stephen F. Csernak, Prentice Hall  
ISBN-10: 0136079482, ISBN-13: 9780136079484

**References:**

1. Building Code Requirements for Structural Concrete (ACI318-11) and Commentary, ACI Committee 318, American Concrete Institute, ISBN 9780870317446
2. AISC Steel Construction Manual, 14<sup>th</sup> Ed., American Institute of Steel Construction, ISBN 1564240606

### **Learning Outcomes:**

1. Design reinforced concrete beams using the latest ACI 318 Codes
2. Design reinforced concrete slabs using the latest ACI 318 Codes
3. Design reinforced concrete columns using the latest ACI 318 Codes
4. Design steel tension members using the latest AISC SCM
5. Design steel columns the latest AISC SCM
6. Design steel beams the latest AISC SCM

### **Course Policies:**

- Course Requirements and Grades

Attendance & Participation	10%	Assignment & Quizzes	20%
Exam I	20%	Exam II	20%
Exam III	30%		

- Grading

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

- Class Attendance Requirements (*two lateness = one absence*)

# of Absence	0 - 3	4	5
Point Deduction	0	- 5	- 10

- All assignments should be submitted at the beginning of the class and the due date is “next” class meeting time. Only selected HWs will be graded. Unless prior arrangements are worked out with the instructor, a penalty of 50% will be assessed on late assignments submitted within next class meeting time of the due date. After the grace period, ZERO credit towards a final grade.

### **Academic Dishonesty**

: Texas A&M University-Commerce will not condone plagiarism in any form. Plagiarism represents disregard for academic standards and is strictly against University policy. Plagiarized work can result in a “0” on a given assignment(s) or an “F” for the course as well as further administrative sanctions permitted under University policy. You may discuss course work and other course materials with fellow students (except during tests), but it is inappropriate to have another student do your course work or provide you with any portion of it. Guidelines for properly quoting someone else’s writings and the proper citing of sources can be found in the APA Publication Manual. If you do not understand the term “plagiarism”, or if you have difficulty summarizing or documenting sources, contact your professor for assistance.

### **Students with Disabilities**

: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact: Office of Student Disability Resources and Services, Texas A&M University-Commerce, Gee Library Room 132, Phone (903) 886-5150 or (903) 886-5835, Fax (903) 468-8148, StudentDisabilityServices@tamuc.edu

### **Student Conduct**

: All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook*). Students are expected to attend all class periods and to be prepared for each class. Students are expected to refrain from any disruptive behaviors during class, which includes but is not limited to working on assignments/projects from another course, reading non-course materials, or using the computer for non-class purposes. Cell phones, iPods, and other electronic devices should be turned off during class.

**Class Topics & Schedule:**

<b>Week #</b>	<b>Week of</b>	<b>M</b>	<b>W</b>	<b>F</b>
1	25-Aug	Concrete and Reinforced Concrete	Flexural Analysis of Beams	Strength Analysis of Beams
2	1-Sep	Labor Day	Design of Rectangular Beams and One-Way Slabs	Design of Rectangular Beams and One-Way Slabs
3	8-Sep	Analysis and Design of T Beams and Doubly Reinforced Beams	Analysis and Design of T Beams and Doubly Reinforced Beams	Serviceability and Beam Deflections
4	15-Sep	Shear and Diagonal Tension	Introduction to Columns	Design of Short Columns
5	22-Sep	Slender Columns	Footings	Footings
6	29-Sep	Retaining Walls	Retaining Walls	Exam I
7	6-Oct	Review Exam I	Two-Way Slabs	Walls
8	13-Oct	Pre-stressed Concrete	Reinforced Concrete Masonry	Structural Steel Design
9	20-Oct	Specifications, Loads, and Methods of Design	Analysis of Tension Members	Analysis of Tension Members
10	27-Oct	Design of Tension Members	Design of Tension Members	Compression Members
11	3-Nov	Compression Members	Introduction to Beams	Design of Beams
12	10-Nov	Design of Beams	Bending and Axial Force	Bolted Connections
13	17-Nov	Welded Connections	Building Connections	Design of Steel Buildings
14	24-Nov	Exam II	TGB	TGB
15	1-Dec	Review Exam II	Composite Beams	Composite Columns
16	8-Dec	Final Week - Exam III		