CET 200 Structural Design

Course Description: A course on methods for evaluation and design of structural steel and reinforced concrete members, using AISC and ACI requirements. Topics include: design methodologies focused on bending moment behavior, tension and compression behavior, shear behavior, and connections; and common field testing techniques for concrete.

Prerequisites(s): CET 125 **Corequisite(s):** None

Lecture Hours: 3	Lab Hours: 3	Credit Hours: 4
Lab Fee: $105	Supplemental Fee: $0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lec/Lab	Grading: A/B/C/D/F/I	
Delivery Method: □ Web	□ Hybrid	X Classroom
Semesters Offered: X Fall	□ Spring	X Summer

Course Primary Text:

Title: Course Builder for Structural Design (Lessons 1 – 12)	Edition: 1
Author(s): Thomas Burns	
Publisher: Cengage	

Supplemental Materials:

ACI Building Code (2012)
AISC Steel Construction Manual, 14th ed.

Course Outcomes:

1	ABET (b), Assessed: - Students should demonstrate an ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
2	ABET (c), Assessed: - Students should demonstrate an ability to conduct standard tests and measurements, and to conduct.
3	ABET (d), Assessed: - Students should demonstrate an ability to function effectively as a member of a technical team.
4	ABET (e), Assessed: - Students should demonstrate an ability to identify, analyze, and solve narrowly defined engineering technology problems.
5	ACCE 12, Assessed: - Recognize the basic principles of structural design.

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MASTER COURSE DOCUMENT

Course Topics:

Week 1	Structural Steel and Reinforced Concrete – The Materials
Week 2	AISC and ACI Design Methodologies
Week 3	Test, Tension in Steel Members
Week 4	Steel and Concrete Beams - Introduction
Week 5	Steel and Concrete Beams – Flexural Evaluation
Week 6	Steel and Concrete Beams – Flexural Design
Week 7	Steel and Concrete Beams, Test
Week 8	Introduction to Column Behavior
Week 9	Steel and Concrete Columns - Evaluation
Week 10	Steel and Concrete Columns - Design
Week 11	Test, Shear in Concrete
Week 12	Shear in Concrete
Week 13	Shear, Development Length
Week 14	Test, Fabrication of Steel and Rebar
Week 15	Fabrication, Test

Methods of Evaluation/Assessment

5 Tests = 75%
2 Steel lab assignments = 10%
3 concrete lab reports = 15%

Course Keeper: T. Burns

Date Completed: 8/26/13
Updated: September 16, 2016
Updated: February 17, 2018
Updated: March 15, 2019, Carol Morman