

METROPOLITAN STATE COLLEGE of DENVER  
Office of Academic Affairs

**REGULAR COURSE SYLLABUS**

School of: Professional Studies

Department: Engineering Technology

CIP Code: 15.0201

Prefix & Course Number: CET 4140

Crosslisted With\*:       

Course Title: Concrete Design II

Check All That Apply: Required for Major:        Required for Minor:        Specified Elective:

Required for Concentration:  Elective:  Service Course:       

Credit Hours: 3 (3+0)

Total Contact Hours per semester (assuming 15-16 week semester):

Lecture 45 Lab 0 Internship 0 Practicum 0 Other (please specify type and hours):       

Schedule Type(s): L Grading Mode(s): L

Variable Topics Courses (list restrictions, including the maximum number of hours that can be earned\*\*):

**\*\* NOTE: This information must be included in the course description.**

Restrictions (Variable Topics Course):       

Prerequisite(s): CET 4120 with a grade of "C" or better; or permission of instructor

Corequisite(s): None

Prerequisite(s) or Corequisite(s):       




Banner Enforced:

Prerequisite(s):       

Corequisite(s):       

Prerequisite(s) or Corequisite(s):       

APPROVED:

<u>26.</u> 	<u>3 Apr 08</u>
Department Chair OR Program Director	Date
	<u>4/8/08</u>
Dean OR Associate Dean	Date
	<u>5/19/08</u>
Associate VP, Academic Affairs	Date

\*If crosslisted, attach completed Course Crosslisting Agreement Form

Prefix and Course Number: CET 4140

**Catalog Course Description:**

This course is a continuation of the fundamentals introduced in Concrete Design I, with emphasis on the analysis and design of columns, footings, retaining walls, two-way slabs, and introduction of principles of prestressed concrete.

**Required Reading and Other Materials will be equivalent to:**

1. McCormac, Jack C. (2006), *Design of Reinforced Concrete (7<sup>th</sup> Edition ACI 318-05 Code Edition)*. John Wiley
2. *ACI 318-05 Code-optional (recommended)* American Concrete Institute.

**Specific, Measurable Student Behavioral Learning Objectives:**

Upon completion of this course the student should be able to:

1. Design of short and slender concrete columns, concrete footings and foundations and concrete retaining walls.
2. Design of beams and two-way slabs with application of fundamental principles of direct design method and equivalent method.
3. Examine fundamental principles of prestressed concrete structures.

**Detailed Outline of Course Content (Major Topics and Subtopics) or Outline of Field Experience/Internship (experience, responsibilities and supervision):**

- I. Column design
  - A. Design of short columns subject to axial load and bending.
  - B. Design of slender columns.
- II. Footings and foundations
- III. Retaining walls
- IV. Reinforced concrete beam design
- V. Two-way slab design
  - A. Direct design method
  - B. Equivalent frame method
- VI. Prestressed concrete

**Evaluation of Student Performance:**

1. Assigned homework problems
2. Written examinations
3. Final project and oral presentation