

METROPOLITAN STATE COLLEGE of DENVER  
Office of Academic Affairs

**REGULAR COURSE SYLLABUS**

School of: Professional Studies

Department: Engineering Technology

CIP Code: 15.0303

Prefix & Course Number: EET 2340

Crosslisted With\*: \_\_\_\_\_

Course Title: Technical Programming Applications

Check All That Apply: Required for Major:  Required for Minor:  Specified Elective: \_\_\_\_\_  
Required for Concentration: \_\_\_\_\_ Elective: \_\_\_\_\_ Service Course:   
Required for Certificate:

Credit Hours: 3 (3+0)

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

Lecture 45 Lab 0 Internship \_\_\_\_\_ Practicum \_\_\_\_\_ 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): MTH 1400 or (MTH 1110 and MTH 1120) or higher level math course, with a grade of "C" or better.

Corequisite(s): \_\_\_\_\_

Prerequisite(s) or Corequisite(s): \_\_\_\_\_

Banner Enforced:

Prerequisite(s): MTH 1400 or (MTH 1110 and MTH 1120) or MTH 1410 or MTH 2410, with a grade of "C" or better.

Corequisite(s): \_\_\_\_\_

Prerequisite(s) or Corequisite(s): \_\_\_\_\_

**Catalog Course Description:**

This is a beginning-level course using Visual Basic and spreadsheets. Students will solve engineering applications problems from the various areas of civil, electrical and mechanical engineering technology.

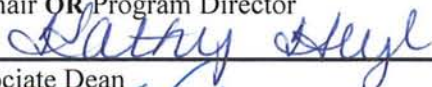
APPROVED:



Department Chair OR Program Director

12 Feb 08

Date



Dean OR Associate Dean

2/13/08

Date



Associate VP, Academic Affairs

3/7/08

Date

\*If crosslisted, attach completed Course Crosslisting Agreement Form

EET 2340:

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

Schneider, *An Introduction to Programming Using Visual Basic 2005, 6th Edition*. Prentice Hall

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

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

- 1 Analyze and solve basic engineering problems
- 2 Decompose a problem into a flow-chart of constituent tasks and decisions.
- 3 Design a problem solution using the Visual Basic programming language.
- 4 Create solutions for real world engineering problems from multiple disciplines
  - a. Civil Engineering
  - b. Mechanical Engineering
  - c. Electrical Engineering, Electrical and Mechanical
  - d. Applied Mathematics
- 5 Document Programs through annotation, comments and meaningful variable names.
- 6 Identify and correct program errors using standard debugging methods.

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

- I. Introduction to event driven programming
  - 1 Filters
    - a. High pass
    - b. Low pass
    - c. Band pass
  - 2 Oscillators
    - a. High Frequency
    - b. Low Frequency
- II. Writing Programs:
  - A. Elements and Form
  - B. Input and Output
  - C. Numbers and Variables
  - D. Arithmetic Operators
  - E. Conditional Branching
  - F. Loops
  - G. Arrays and Matrices
  - H. Advanced Input/Output Commands
  - I. Numeric Functions
  - J. Subroutines. And Functions
  - K. Strings and String Functions
  - L. Random Numbers
  - M. File I/O
- III. Engineering Applications:
  - A. Analysis of Electrical Circuits Containing:
    - 1 Resistors
    - 2 Inductors
    - 3 Capacitors
    - 4 Combinations of Above
  - B. Circuit Design
- IV. Spreadsheets
  - A. Civil
  - B. Electrical
  - C. Mechanical

**Evaluation of Student Performance:**

- 1. Written exams
- 2. Homework
- 3. Programming Assignments