

METROPOLITAN STATE UNIVERSITY OF DENVER
Office of Academic and Student Affairs

REGULAR COURSE SYLLABUS

College of: Professional Studies

Department: Engineering and Engineering Technology

Prefix & Course Number: CPE 1040 Crosslisted With*:

Course Title: Introduction to Engineering

Transcript Course Title (30 characters): Introduction to Engineering

Check All That Apply: Required for Major: X Required for Minor: _____ Specified Elective: _____
Required for Concentration: _____ Elective: _____ Service Course: _____

To receive Title IV financial aid funds, all institutions of higher education must comply with the federal definition of a credit hour. The Higher Learning Commission requires institutions to maintain policies and procedures for verifying compliance with this definition.

Federal Credit Hour Definition: A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:
(1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or (2) at least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward to the award of credit hours. 34CFR 600.2 (11/1/2010)

Credit Hours: 3 (2+2) Schedule Type: B Grade Mode: L

Face-to-Face or Equivalent Hours per course:

Lecture 30 Lab 30 Internship _____ Practicum _____ Other (please specify type and hours): _____

Additional Student Work Hours per course: 90

APPROVED: 

Department Chair OR Program Director

11/17/2016
Date


Dean OR Associate Dean

2/21/17
Date

Associate VP, Academic and Student Affairs

Date

*If crosslisted, attach completed Course Crosslisting Agreement Form

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Variable topics umbrella course: No Yes _____ If yes, number of credits/repeats allowed _____

Specified repeatable course: No Yes _____ If yes, number of credits/repeats allowed _____

Prerequisite(s): Minimum performance standard score on math placement test

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): _____

Banner Enforced Coding:

Prerequisite(s): Minimum performance standard score on math placement test

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): _____

Registration restrictions: Level _____ Class _____ Program/Major _____ Student attribute _____

Catalog Course Description:

This course is an introductory engineering course exposing students to a cross section of topics in computer engineering discipline to assist them with their education career choices. Students are taught to work in teams, introduced to the design process, utilize math and computer programs to analyze raw data and properly display their results in a presentation to their peers. The history of the engineering profession and its relation to current national, social, industrial, ethical, and international issues and problems will be discussed.

Specific Variable Topics Course Description (if applicable, umbrella course description included above):

Required Reading and Other Materials will be equivalent to:

1. Wright, Paul (2002). Introduction to Engineering. John Wiley & Sons.
2. Other course materials will be provided by the faculty.

Specific, Measurable Student Behavioral Learning Objectives:

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

1. Describe concepts of social and political effects of Engineering on society.
 - a. Social
 - b. Cultural
 - c. Ethical
 - d. Environmental
2. Analyze, interpret and present engineering data using spreadsheets, graphs and computer software.
 - a. Effective use of traditional and electronic reference sources
 - b. Apply math and logic to engineering related problems
3. Describe the relationship between applied engineering and research in Natural Science fields.
4. Describe and relate historical achievements in computer engineering

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- a. Today's life style and issues
- b. Social, cultural, ethical, and environmental forces
- 5. Define basic engineering areas.

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

- I. Role of Engineering and Technology in Society
 - A. Job Opportunities/Professional Careers
 - B. Professional Societies and Professional Registration
- II. Being Successful in Engineering School
 - A. Role of the University
 - B. Learning in University Environment
 - C. Effective Problem-Solving
 - D. Maximizing Performance in Courses
- III. Dimensions, Units, and Errors
 - A. Dimensional Analysis
 - B. English system of Units
 - C. SI System of Units
 - D. Error Analysis
- IV. Introduction to Computer Engineering
 - A. Areas of Computer Engineering
 - B. Projects/Case Studies and/or Guest Lecture/Fieldtrips in the Computer Engineering Profession
- V. Use of Computer Software for Engineering Problems
 - A. Spreadsheets
 - B. Graphical Presentations
 - C. Using Excel to Analyze Data
 - D. Power Point
- VI. Social and Political Effects on Computer Engineering
 - A. Engineering Ethics
 - B. Diversity-Respecting Others
 - C. Impact on Decision-Making
 - D. Research
 - E. Influence of Technological Change

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- VII. Computer Engineering Design
- A. Individual project
 - B. Team project

Evaluation of Student Performance:

1. Examinations
2. Written Assignments
3. Lab Reports
4. Projects
5. Oral Presentation