

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 3010

Crosslisted With*: _____

Course Title: Industrial Electronics

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

Credit Hours: 4 (3+2)

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

Lecture 45 Lab 30 Internship _____ Practicum _____ Other (please specify type and hours): _____

Schedule Type(s): B 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): (EET 1150 or EET 2000) with a grade of "C" or better

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): _____

Banner Enforced:

Prerequisite(s): (EET 1150 or EET 2000) with a grade of "C" or better

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): _____

Catalog Course Description:

This course covers the application of transistors, op amps, and other electronic devices, both analog and digital. This course is for Mechanical Engineering Technology majors, EET certificates, and EET minors. This course does not count towards ^amajor in EET.

APPROVED: _____
Department Chair OR Program Director _____ Date 1 May 08
Dean OR Associate Dean _____ Date 5/5/08
Associate VP, Academic Affairs _____ Date 12/17/08

*If crosslisted, attach completed Course Crosslisting Agreement Form

Required Reading and Other Materials will be equivalent to:

Maloney, Timothy J. (2004). *Modern Industrial Electronics 5th Ed.* or current edition, Upper Saddle Hill, NJ: Pearson Education, Inc.

Specific, Measurable Student Behavioral Learning Objectives:

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

1. Describe the function of and use transistors, diodes, Silicon Controlled Rectifiers (SCR), triacs, and other semiconductor devices in industrial circuits.
2. Analyze and design basic operational amplifier circuits.
3. Analyze basic digital circuits in industrial circuits.
4. Apply basic electronics to industrial applications.

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

- | | |
|---|---|
| <ul style="list-style-type: none">I. Introduction to Semiconductor Devices<ul style="list-style-type: none">A. Properties of Semiconductor MaterialsB. PN Junctions and BiasingII. Diodes<ul style="list-style-type: none">A. CharacteristicsB. BiasingC. RectifiersD. Zener DiodesE. LEDF. Data SheetsIII. BJT Transistors<ul style="list-style-type: none">A. OperationB. BiasingC. Switching CircuitsIV. JFET and MOSFET<ul style="list-style-type: none">A. AmplifiersB. Switches | <ul style="list-style-type: none">V. Thyristors<ul style="list-style-type: none">A. SCRB. TriacC. DiacVI. Op. Amps<ul style="list-style-type: none">A. Differential AmpsB. ComparatorsC. Summing AmpsD. IntegratorsE. DifferentiatorsF. Function GeneratorsG. Active FiltersH. Power Supply RegulatorsVII. Programmable Logic Controllers<ul style="list-style-type: none">A. Background<ul style="list-style-type: none">1. Advantages2. DisadvantagesB. Ladder Logic Programming |
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Evaluation of Student Performance:

1. Written exams
2. Homework
3. Lab reports
4. Lab exam