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 major in EET.

APPROVED:

Department Chair OR Program Director
Date

Dean OR Associate Dean
Date

Associate VP, Academic Affairs
Date

*If crosslisted, attach completed Course Crosslisting Agreement Form
Required Reading and Other Materials will be equivalent to:


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):

I. Introduction to Semiconductor Devices  
   A. Properties of Semiconductor Materials  
   B. PN Junctions and Biasing

II. Diodes  
    A. Characteristics  
    B. Biasing  
    C. Rectifiers  
    D. Zener Diodes  
    E. LED  
    F. Data Sheets

III. BJT Transistors  
     A. Operation  
     B. Biasing  
     C. Switching Circuits

IV. JFET and MOSFET  
    A. Amplifiers  
    B. Switches

V. Thyristors  
   A. SCR  
   B. Triac  
   C. Diac

VI. Op. Amps  
    A. Differential Amps  
    B. Comparators  
    C. Summing Amps  
    D. Integrators  
    E. Differentiators  
    F. Function Generators  
    G. Active Filters  
    H. Power Supply Regulators

VII. Programmable Logic Controllers  
     A. Background  
      1. Advantages  
      2. Disadvantages  
     B. Ladder Logic Programming

Evaluation of Student Performance:
1. Written exams  
2. Homework  
3. Lab reports  
4. Lab exam