

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 2165 Crosslisted With\*: \_\_\_\_\_

Course Title: Solid State Electronics Laboratory

Transcript Course Title (30 characters): Solid State Electronics Lab

Check All That Apply: Required for Major:  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: 1 (0+2) Schedule Type: A Grade Mode: L

Face-to-Face or Equivalent Hours per course:

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

Additional Student Work Hours per course: 30

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): CPE 1150, or EET 1150, and CHE 1100 or CHE 1800 (with a grade of "C" or better for all prerequisites)

Corequisite(s): CPE 2145

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

APPROVED:

\_\_\_\_\_  
Department Chair OR Program Director Date

\_\_\_\_\_  
Dean OR Associate Dean Date

\_\_\_\_\_  
Associate VP, Academic and Student Affairs Date

\*If crosslisted, attach completed Course Crosslisting Agreement Form

Prefix and Course Number:

**Banner Enforced Coding:**

**Prerequisite(s):** CPE 1150, or EET 1150, and CHE 1100 or CHE 1800 (with a grade of “C” or better for all prerequisites)

**Corequisite(s):** CPE 2145

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

**Registration restrictions:** Level \_\_\_\_\_ Class \_\_\_\_\_ Program/Major \_\_\_\_\_ Student attribute \_\_\_\_\_

**Catalog Course Description:**

The student will develop the laboratory skills necessary for integration of electronic devices in applications such as filtering, amplification, and voltage regulation. The student will integrate the lecture content of CPE2145 in the practical, hands-on laboratory exercises developed in this course.

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

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

Albert Paul Malvino, David J. Bates (2016). *Electronic Principles, 8<sup>th</sup> Edition*. New York, NY: McGraw-Hill

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

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

1. Analyze circuits by calculation
2. Model circuits using circuit simulation software
3. Construct, analyze and measure circuits with respect to design and models
4. Document laboratory results in formal reports

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

- I. Introduction and Review of Laboratory Equipment, Safety, Etc...
- II. Diodes
  - A. Properties and Behavior
  - B. Special Diodes
- III. Transistors
  - A. Transistor Properties and Behavior
  - B. Simple Transistor Circuits
- IV. Amplifiers
  - A. Single Stage Transistor Amplifiers
  - B. Multistage Amplifiers
  - C. JFET Amplifiers
  - D. Summing Amplifier (Op-amps)
  - E. Amplifier Frequency Response
- V. Voltage Regulators

**Evaluation of Student Performance:**

1. Laboratory Reports