

NVCC COLLEGE-WIDE COURSE CONTENT SUMMARY

ETR 144 - DEVICES & APPLICATIONS II (4 CR.)

COURSE DESCRIPTION

Theoretical study and practical applications of active devices. Emphasis on diodes, transistors (BJTs and FETs), small signal amplifiers, and power supplies. Lecture 3 hours, laboratory 3 hours. Total 6 hours per week.

GENERAL COURSE PURPOSE

To become familiar with basic electronic devices.

ENTRY LEVEL COMPETENCIES

Corequisite: ETR 114 - "D.C. and A.C. Fundamentals II".

COURSE OBJECTIVES

Upon completion of the course, the student will be able to analyze and troubleshoot electronic circuitry using discrete devices.

MAJOR TOPICS TO BE INCLUDED

LECTURE

- A. Semiconductor materials and PN junctions
- B. Rectifier diodes and applications
- C. BJTs and FETs (Biasing and small signal amplification)
- D. Amplifier Frequency Response
- E. Electronic power supplies

LABORATORY

- A. Junction diode characteristics
- B. Zener diode characteristics
- C. Transistor familiarization
- D. Transistor curves and data and current gain in common emitter configuration
- E. Transistor biasing
- F. JFET Familiarization and characteristic curves
- G. Negative Feedback
- H. Power supply troubleshooting