EE-3130
Electronics

Curricular Designation:  CpE: Required  EE: Required

Catalog Description: Covers the fundamentals of electronic circuits and devices. Credits: 3.0 Lec-Rec-Lab: (3-0-0) Semesters Offered: Fall Spring Restrictions: Must be enrolled in one of the following Major(s): Computer Engineering Electrical Engineering Prerequisites: EE 2110

Textbooks(s) and/or Other Required Materials:

Prerequisites by Topic:
Familiarity with the basic methods of circuit analysis

Course Objectives:
1. Familiarity with the physics and operation of electronic devices such as diodes, op-amps, BJTs and MOSFETs.
2. Familiarity with the analysis of electronic circuits using diodes, op-amps, BJTs and MOSFETs.
Topics Covered:
1. Review of Linear Circuits.
2. Operational Amplifiers, Op-Amp Applications, Differentiators, Integrators, non-ideal op-amps
3. Diodes, Diode Models, Diode Applications, Rectifiers, p-n Junction Diodes
4. Bipolar Junction Transistors, npn and pnp BJTs, Small-Signal Analysis
5. Field-Effect Transistors, JFETs, MOSFETs, Switching models of NMOS and PMOS FETs.

Relationship of Course to Program Outcomes (See UPAC SOP, Tables 1 and 2):

EE:  Outcome: a via topic(s): 1, 2, 3, 4, 5
     Outcome: c via topic(s): 2, 3, 4, 5
     Outcome: m via topic(s): 2, 3, 4, 5

CpE: Outcome: a via topic(s): 1, 2, 3, 4, 5
     Outcome: c via topic(s): 2, 3, 4, 5
     Outcome: p via topic(s): 1, 2, 3, 4, 5
     Outcome: s via topic(s): 1, 2, 3, 4, 5

Contribution of Course to Meeting the Professional Component:

EE:   Engineering Topics

CpE:  Engineering Topics

Class/Laboratory Schedule (note: 1 hour = 50 minutes):
Lecture: 45 hours = 3 hours/week for 15 weeks

Prepared by:
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