EE-3301
EE Lab 3

Catalog Description:
Third laboratory course in electrical engineering. Covers the practical aspects of microprocessors and energy systems. Credits: 1.0 Lec-Rec-Lab: (0-0-2) Semesters Offered: Fall Spring, Pre-requisites: EE 3170(C) and EE 3130(C)

Textbooks(s) and/or Other Required Materials:
None

Prerequisites by Topic:
1. Familiarity with electrical measurement techniques and equipment
2. Familiarity with circuit modeling techniques and software
3. Mastery of transient analysis of 1st and 2nd order electric circuits
4. Familiarity with passive and active filter design
5. Introduction to control systems

Course Objectives:
Familiarity with the application of assembly language programming in an embedded system environment.

Familiarity with the design and analysis of electronic systems using integrated circuits and discrete devices such as diodes, op-amps, BJTs and MOSFETs.

Master the ability to design experiments, implement, analyze and report results.
Topics Covered:

1. Advanced measurement equipment orientation.

2. Design and analysis of electronic systems using operational amplifiers, including differentiators, integrators, oscillators; non-ideal characteristics of op-amps

3. Motorola 68HC11 Development System interface, Buffalo Monitor, and Texas editor, assembler and simulator

4. Design and analysis of wave shaping circuits using diodes, diode applications, rectifiers

5. Design and analysis of electronic systems using Bipolar Junction Transistors, and Field-Effect Transistors

6. Technical report writing

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

- EE: Objective: 1 via Outcome: b via topic(s): 6
  Objective: 1 via Outcome: l via topic(s): 2, 3, 4, 5
  Objective: 4 via Outcome: g via topic(s): 2, 3, 4, 5

- CpE: Objective: 2 via Outcome: n via topic(s): 2, 3, 4, 5, 6

Contribution of Course to Meeting the Professional Component (See UPAC SOP, Tables 1 and 2):

N/A

Class/Laboratory Schedule (note: 1 hour = 50 minutes):

- Instructional Lab: 30 hours = (1 session/week @ 2 hours/session) for 15 weeks

Prepared by:

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