EE-3306
Electronic Design with Microprocessor Applications

Curricular Designation: CpE: required EE: required

Catalog Description: Covers the design and analysis of electronic circuits with microprocessor applications Credits: 1.0 Lec-Rec-Lab: (0-0-2) Semesters Offered: Fall Spring Restrictions: Must be enrolled in one of the following Major(s): Electrical Engineering Pre-requisites: EE 3305 and EE 3130 and EE 3170

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

Prerequisites by Topic:
Mastery of the topics associated with using a microcontroller in an embedded system environment.

Familiarity with Motorola 68HC11 assembly language programming, including but not limited to addressing modes, polled, interrupt and DMA I/O, interrupt service routines, and using on-board I/O systems.

Familiarity with the basic methods of circuit analysis

Familiarity with the operation and analysis of electronic devices such as diodes, op-amps, BJTs and MOSFETs.

Course Objectives:
Application of assembly language programming in an embedded system environment.

Design and analysis of electronic systems using embedded microprocessors, integrated circuits and discrete devices.

Design experiments, implement, analyze and report results.
Topics Covered:

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

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

3. Texas Instruments DSP Development System

4. Design and analysis of electronic systems using embedded microprocessors

5. Technical report writing

6. Oral Technical Presentations

Relationship of Course to Program Objectives

EE: 
Outcome: a via topic(s): (1-6)
Outcome: b via topic(s): (1-6)
Outcome: c via topic(s): (1-6)
Outcome: g via topic(s): 5, 6
Outcome: k via topic(s): (1-4)

CpE: 
Outcome: a via topic(s): (1-6)
Outcome: b via topic(s): (1-6)
Outcome: c via topic(s): (1-6)
Outcome: g via topic(s): 5, 6
Outcome: k via topic(s): (1-4)

Contribution of Course to Meeting the Professional Component

- EE: Engineering topics
- CpE: Engineering Topics

Class/Laboratory Schedule (note: 1 hour = 50 minutes):
Instructional Lab: 30 hours = (1 session/week @ 2 hours/session) for 15 weeks

Prepared by:
Glen Archer, Lecturer, February 19, 2004