

ELEG 5163/5160L - ADVANCED MICROCONTROLLER DESIGN PROJECT/LABORATORY

Spring Semester, 1996

Catalog Data: ELEG 5163. Advanced Microcontroller Design Laboratory. Credit 3. Use of development systems as an aid to Microcontroller design. The student is expected to design, build and test a microcontroller-based system to perform a specified task. Prerequisite: ELEG 3923.

Texts: Several, depending on the microcontroller chosen by the student.

Coordinator: S. Charlton, Associate Professor of Electrical Engineering.

Goals: To enable the student to design and build a working microcontroller-based instrument using modern development tools.

Prerequisites by Topic.

1. Knowledge of microprocessor-based systems.
2. Assembly language programming.

Topics:

1. Design Philosophy.
2. Development Systems Operation.
3. Trouble shooting with emulators and evaluation modules.
4. Motorola MC68HC05 microcontroller.
5. Motorola MC68HC11 microcontroller.
6. Intel 8748-9 microcontroller.
7. Microchip PIC16/17 microcontroller.

Laboratory Project:

Students build a microcontroller (single chip microcomputer) based instrument, preferably one chosen by the students.

The student uses the development systems for the supported microcontrollers, breadboards and tests their system. Printed circuit board fabrication equipment is available for finished projects.

ABET category content as estimated by faculty member who prepared this course description:

Engineering Design: 3.0 credit or 100%

Prepared By: _____ Date: _____