COLLEGEWIDE COURSE OUTLINE OF RECORD

EECT 222, INTRODUCTION TO MICROCONTROLLERS

COURSE TITLE: Introduction to Microcontrollers
COURSE NUMBER: EECT 222
PREREQUISITE: EECT 122 Digital Applications and EECT 128 Introduction to C Programming
SCHOOL: Technology
PROGRAM: Electronics and Computer Technology
CREDIT HOURS: 4
CONTACT HOURS: Lecture: 3   Lab: 2
DATE OF LAST REVISION: Summer, 2011
EFFECTIVE DATE OF THIS REVISION: Fall, 2011

CATALOG DESCRIPTION: An introduction to microcontroller hardware and software, focusing on embedded control applications. Interconnections of components, peripheral devices, bus timing relationships, structured C-language programming, debugging, input/output techniques, and use of PC-based software development tools are studied.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1.   Demonstrate a working knowledge of the necessary steps and methods used to interface a microcomputer system to devices such as stepper motors, sensors, etc.
2.   Develop and demonstrate a structured C language program to accomplish a given task using a microcomputer.
3.   Demonstrate the use of interrupts and other programming techniques related to microcontrollers.
4.   Complete the design, development, programming, and testing of a microcomputer-based project in a team environment.
5.   Demonstrate a working knowledge of microcomputer busses and the flow of data within a microcomputer system.

COURSE CONTENT: Topical areas of study include –

Microprocessor and microcontroller operation and architecture
Memory devices and addressing
Embedded systems C language
Compiler and Linker setup
Techniques and tools for debugging programs
Using C language instructions to check, set, and clear bits.
Using C looping and decision constructs for timing and control functions.
Using C functions to produce modular, re-usable code.
Programming for various peripherals such as motors, sensors, ADCs, serial communications.

Interrupt operation

HOW TO ACCESS THE IVY TECH COMMUNITY COLLEGE LIBRARY:

The Ivy Tech Library is available to students' on- and off-campus, offering full text journals and books and other resources essential for course assignments. Go to http://www.ivytech.edu/library/ and choose the link for your campus.

ACADEMIC HONESTY STATEMENT:

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

COPYRIGHT STATEMENT:

Students shall adhere to the laws governing the use of copyrighted materials. They must insure that their activities comply with fair use and in no way infringe on the copyright or other proprietary rights of others and that the materials used and developed at Ivy Tech Community College contain nothing unlawful, unethical, or libelous and do not constitute any violation of any right of privacy.

ADA STATEMENT:

Ivy Tech Community College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classroom.

SYLLABUS FOR EECT 222, INTRODUCTION TO MICROCONTROLLERS

The instructor will provide students with a course syllabus on the first scheduled class meeting. The syllabus should communicate clear and concise information to help the student understand the scope of the course and expectation for successful completion. The following information will appear on the syllabus and be identical to information on the Course Outline of Record (COR):

Required Syllabus Information from (COR)

- Course title
- Course prefix and number
- Prerequisite(s)
- Corequisite(s)
- Program
- Division
- Credit hours
- Contact hours
- Catalog description
- Major course learning objectives
- Course content
- Academic honesty statement
- ADA statement

Additional Required Syllabus Information
The syllabus must also contain the following additional information. The instructor may determine the content of this information.

- Instructor
- Course section number
- Additional course learning objectives (if required)
- Required text, or other instructional materials
- Required consumable materials and equipment supplied by student
- Instructor phone number
- Instructor e-mail address
- Instructor office location and hours
- Method(s) of instructional delivery
- Method(s) of evaluation
- Grading scale
- Make-up policy
- Attendance policy
- Activities schedule, including calendar of topics, assignment, test, etc.
- Last date to drop course without grade

- The name and location of the Disability Service Coordinator
- Right of revision statement

Optional Syllabus Information

Faculty are encouraged to provide additional information that will help the student understand in more detail how the class will be conducted.

- Extra credit work, if applicable
- Class/lab relationship
- References or reading that are optional but recommended
- Format for papers, projects, or other assignments
- Computer room/lab rules if applicable
- Withdrawal process and responsibility
- Other