Programmable Microcontrollers (INF 496/596)  
University at Albany, Spring 2013  
Mondays from 7:15-10:05pm  
January 28th - May 17th  
Location: Lecture Center 13 (LC0013)  

Instructor: Jonathan Muckell JonMuckell@gmail.com (or via blackboard)  

Course Material:  
- SparkFun Inventor's Kit for Arduino (Required)  
  https://www.sparkfun.com/products/11236  
- Programming Arduino Getting Started with Sketches. Simon Monk (Optional)  
- Supplementary material will be made available on blackboard:  
  https://blackboard.albany.edu  

Software:  

Course Description: This course introduces programmable microcontrollers, digital chips that are used to control electronics and robotics projects. In this course students will simultaneously develop the electronic circuits and associated software for controlling hardware components including sensors and mechanical parts. Topics include electronics fundamentals, analog/digital (A/D) devices, pulse-width modulation (PWM) and embedded programming. Course will hands-on lab setting with a final group project.  

Grading:  

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Letter Grade | A | A- | B+ | B | B- | C+ | C | C- | D | E  
Scale       | 100-94 | 94-89 | 89-85 | 85-82 | 82-79 | 79-75 | 75-72 | 72-69 | 69-60 | 60-0
Lab & Homework Assignments:
Most classes will contain a hands-on lab assignment. The goal of these assignments is to gain experience with a particular sensor, component and/or concept that we discussed in class. Labs that are not completed during class-time will need to be finished as homework. Grading for these assignments consists of a direct demonstration to the instructor. Questions will be randomly asked by the instructor to different members of the group, in order to prove that all members have an understanding of the concepts.

Quiz:
There will be a single quiz early in the course (around the 4th week). The purpose of the quiz is to test core competency in understanding the building simple electronic circuits. Since most assignments are performed in groups, the quiz provides an opportunity to determine how well students are understanding the material as individuals.

Midterm:
The midterm (similar to the quiz) is designed to test your understanding of the material as an individual. Core concepts of electronics will be covered in the midterm. The goal is to ensure that the core concepts are well understood prior to tackling the final project.

Project:
The second half of the semester will be mostly focused around a group project. Students are expected to fully participate in all aspects of the development of the project. Including, but not limited to, attending class and participating in a final project presentation.

Course Hardware:
Periodically, students will be permitted to utilize department purchased sensors and parts to complete assignments and the final project. Permission must be explicitly granted by the instructor prior to borrowing any hardware. The student must sign out all hardware and returns must be signed back-in. Failure to return signed-out parts will result in a grade of an incomplete until the components are returned. Theft of any materials will be not be tolerated and will result in penalties consistent with university regulations.

Policy on Academic Dishonesty and Disabilities:
All assignments are independent unless otherwise specified. Academic dishonesty, plagiarism, and cheating will be reported to the Office of Judicial Affairs according to the policies set forth in the current University at Albany Undergraduate Bulletin or University at Albany Graduate Bulletin. Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning and psychiatric disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of Disabled Student Services (Campus Center 137, 442-5490).
Undergraduate Academic Regulations

As one of the Councils of the University Senate, the Undergraduate Academic Council recommends policy concerning undergraduate academic programs and regulations. To assist in academic governance, individual schools and colleges have collateral committees that can recommend academic policy to this council. It is the responsibility of each undergraduate student to be knowledgeable concerning pertinent academic policy. The University encourages students to accept the widest responsibility for their academic programs. For clarification and interpretation of the regulations contained in this section, students should contact the Office of the Vice Provost for Undergraduate Education, LC 30.

It is every student’s responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. The following information, supplied by University Libraries, provides additional information.

Please read and familiarize yourself with the following information at this website.

http://www.albany.edu/undergraduate_bulletin/regulations.html

Graduate Academic Regulations

Although the University encourages the widest amount of student responsibility, with a minimum of administrative regulation, it expects students to maintain appropriate standards in their academic and personal life. The University reserves the right to terminate the registration of any student who does not meet the standards acceptable to the University.

The regulations governing graduate study at the University have been established by vote of the General Faculty, the University Senate, the Graduate Academic Council, or their forerunners. They are designed to support the academic standards of the University and the quality and validity of the degrees it confers and to insure fair and equitable treatment of all students engaged in graduate study.

The general regulations apply to all graduate students in the schools and colleges of the University, and the regulations governing master's and doctoral degrees apply equally to all graduate students engaged in programs which lead to these degrees in each of the schools and colleges of the University.

In addition to the University regulations, the schools, colleges, and departments have established various regulations and procedures governing their respective operations.

Please read and familiarize yourself with the following information at this website.

http://www.albany.edu/graduatebulletin/requirements_degree.htm