ECE 447 Fall 2008 Lab Syllabus

Mondays 7:20 – 10:00pm
Section 203 (CRN: 71949)
Thuy-Tien Nguyen
tngus@gmu.edu

Tuesdays 7:20 – 10:00pm
Section 201 (CRN: 71947)
Mark Chaney
mchaney@gmu.edu

Wednesdays 7:20 – 10:00pm
Section 204 (CRN: 78043)
Marcin Rogawski
mrogawsk(at)gmu.edu

Thursdays 7:20 – 10:00pm
Section 202 (CRN: 71948)
Marcin Rogawski
mrogawsk(at)gmu.edu

Office Hours:
Thuy-Tien Nguyen  Mondays  6:00-7:00 PM
Mark Chaney  Tuesdays  10:00-11:00 PM
Marcin Rogawski  Wednesdays  5:00-7:00 PM

Other days and times by appointment

Location:  All lab sections and office hours will be held in the Computer Engineering Lab, GMU Fairfax Campus, ST2, room 203.

Lab Description:
The lab sections allow students to learn how to use the THRSim11 development environment and implement microcontroller functionalities examined in the lectures. For each lab assignment, students are expected to deliver a report detailing their approach to the problem and solutions in the form of source code and a demonstration.

Required Materials:
A lab kit is required for labs and can be purchased from Sue Davies. Basic tools may also be necessary for labs that include hardware implementations.

Grading:
Lab Experiments: 40% of points for the entire class
Midterm Exam for the Lab: 10% of points for the entire class

General Laboratory Rules:
- Each lab experiment will be preceded by an introduction and a hands-on session taught by a lab instructor.
- Students will be required to demonstrate working experiment during a lab session on a day designated as a due date for a particular lab experiment.
- Experiment demonstrations will be accepted exclusively during the class time for a particular lab section.
• Lab reports should be submitted using Blakboard by 9:00 PM, on the day following the experiment deadline, e.g., by 9:00 PM on Tuesday for the Monday section.
• Lab assignments can be submitted for 50% credit up to one week late. After one week, no credit will be given for the assignment.
• The additional opportunities will be provided to earn bonus points by completing additional requirements for each experiment or by completing experiment a week or more ahead of schedule. Both penalty and bonus points will apply independently to the demonstrations and to the electronic deliverables.
• Office hours will be devoted to helping students with their experiments and answering any questions related to the subject of the course. You are welcome to attend office hours held by all lab instructors and the course instructor.
• Students are required to work individually on all experiments, except one or two in which working in groups is explicitly permitted. In case of the group work, both students are expected to be intimately familiar with the entire solution to the given experiment and the entire lab report. This knowledge will be verified during the experiment demonstration and the same grade will be applied to the entire team.
• Every completed experiment must be presented to your lab instructor, who will evaluate student’s results and effort. It is the students’ responsibility to convince the lab instructor that their designs work as required. Therefore, students have to simulate and test their designs thoroughly and well document their work. The lab instructor is not required to test anything by himself nor to investigate if the designs are correct in case of insufficient documentation.
• The students will be required to answer correctly several detailed questions regarding their experiment solution at the time of demonstration. Incorrect answers to these questions may lead to either a total rejection of the demonstration by the TA, or to a substantial reduction of the number of points awarded to the student.
• In case of any evident attempt to submit somebody else’s work as your own, both students involved in the incident may be penalized by taking away all points for the given experiment. The two repeated attempts to present somebody else’s work as your own may lead to the F grade for the entire course, independently of the total amount of points earned by the student before the second incident.
• The students are encouraged to help and support each other in all problems related to the
  - operation of the THRSim development environment,
  - operation of the NewMicros boards,
  - operation of the measurement equipment available in the lab,
  - understanding of the problem to be solved during each experiment.
Tentative schedule of the labs (subject to possible modification):

1. A/D Simulation
   Assigned September 2-4, 2008; Due September 8-11, 2008

   Assigned September 8-11, 2008; Due September 15-18, 2008

3. A/D Converter. Seven Segment Display.
   Assigned September 15-18, 2008; Due September 22-25, 2008

4. Polling, Interrupts, and Debouncing
   Assigned September 29-October 2, 2008; Due October 6-9, 2008

5. Interrupts and LCD
   Assigned October 6-9, 2008; Due October 20-23, 2008

6. Keypad, LCD and Timer Unit
   Assigned October 20-23, 2008; Due November 10-13, 2008

7. Programming in Assembly Language of MC68HC11
   Assigned November 10-13, 2008; Due November 17-20, 2008

8. Serial Communications
   Assigned November 17-20, 2008; Due December 1-4 2008