ENS 362 (also CSC 462) Microcontrollers
2 class hours, 4 laboratory hours, 4 credits

Fall 2008
Meeting Times: Monday 10am-2:15pm, Wednesday 10am-12:05pm
Open Lab: TBD

Instructor: Prof. Neo Antoniades
Email: antoniades@mail.csi.cuny.edu
Tel: (718) 982-3291
Office Hours: Monday 2:15pm-5:15pm, room 4N-201

Text Book (available at CSI bookstore and on-reserve at the CSI library):
“Embedded Design with the PIC18F452 Microprocessor” by J. B. Peatman

Technology Used in the lab: Microdesigns Inc. PIC board

Lab Technician: Steve Gundry, ext 3021

Students will work in pairs. You will be asked to work with the same partner for the entire length of the semester. Final grades will not necessarily be the same for both partners.

Grading policy: Final grades will be based on:
- Successful completion of weekly projects & lab reports (50%) – (10% write-ups & 40% for labs)
- Midterm Exam (40%)
- Participation (no absences) (10%)

Schedule below is tentative and will be changing depending on how classes progress. Experiments will be a mixture of follow-book type of work as well as individual design-type exercises.

TENTATIVE TOPICS COVERED

Week of Aug 27th: Only Wed class, Intro, microprocessor systems/embedded design, assembly language, hex numb system, 2s compl.

Week of Sept 1st: Only Wed class, Harvard architecture, memory map, status bits (flags), Review of basic programming principles

Week of Sept 8th: Basic programming skills (contd) & assembly language concepts Project 1: Familiarization 1
Week of Sept 15th: Direct addressing/indirect addressing - Project 2 (Familiarization 2)
Week of Sept 22nd: Arithmetic operations - Project 3 (subroutine programming exercise)
Week of Sept 29th: No classes scheduled

Week of Oct 6th: QuickFlash Board, Pre-processor - (Project 3 continued)
Week of Oct 13th: Timers (Timer0 routine) - Project 4 (slow rate control)
Week of Oct 20th: LCD Display – Project 4 (continued)
Week of Oct 27th: Midterm Exam: review – exam & open lab
Week of Nov 3rd: Solutions midterm - LCD display positioning codes – Project 5 (pre-processor constructs)
Week of Nov 10th: Display subroutines – Project 5 (continued)
Week of Nov 17th: Interrupts & timing - Project 6 (New Display Routine)
Week of Nov 24th: Critical regions – Interrupts (continued)
Week of Dec 1st: Analog-to-Digital Conversion – Project 7 (7-segment display counter)
Week of Dec 8th: A/D continued - Project 8 (extended project 8 w/ interrupts & temp. sensor)
Week of Dec 15th: Only Monday Class, Project 8 completed