STATE UNIVERSITY OF NEW YORK COLLEGE AT NEW PALTZ

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

EGC308 – MICROPROCESSOR LAB– SPRING 2012

COURSE SYLLABUS

INSTRUCTOR: MICHAEL OTIS

OFFICE: REH 201

OFFICE HOURS: Monday: 9:50 am – 10:50 am

Tuesday: 9:50 am – 10:50 am

Thursday: 9:50 am – 10:50 am

Friday: 9:50 am – 10:50 am

COURSE TIME: Wednesday: 9:25 am – 12:05 pm

PHONE: 845-257-3827

E-MAIL: [otism@engr.newpaltz.edu](mailto:otism@engr.newpaltz.edu)

URL: <http://www.engr.newpaltz.edu/~otism>

Blackboard: <https://blackboard.newpaltz.edu/webapps/portal/frameset.jsp>

COURSE DESCRIPTION:

An introduction to Microprocessor Systems Design Laboratory. Topics include assembly and C language programming (using Freescale’s CodeWarrior environment and the MC9S12DT256 Evaluation Board), hardware interfacing techniques, on-board timer, analog-to-digital converter, and pulse width modulator.

CO-REQUISITE:

EGC331 – Microprocessor System Design

TEXTBOOK:

HCS12 Microcontroller and Embedded Systems, Using Assembly and C with CodeWarrior, by Muhammad Ali Mazidi and Danny Causey, Pearson/Prentice Hall Publishing, 2009. ISBN: 0-13-607229-1

DESIGN TEAMS:

Teams of two students will complete each lab as a unit. Only one team report needs to be turned in. Team members must be active in all phases of the lab. Inactive team member can be removed at the discretion of other team member or the instructor. Inactivity of team members should be brought to the attention of the instructor. Grading will be based on contribution to the lab; therefore each team member will not necessarily receive the same grade.

GRADING:

* Lab Participation 25%
* Lab Performance 25%
* Lab Reports 50%

LABS:

1. Intro to Freescale CodeWarrior, MC9S12DT256 Evaluation Board, and Project Board (no write-up):
   1. Running Assembly Program (LED Blinker) on the Microcontroller
   2. Running C Program (LED Blinker) on the Microcontroller
2. Interfacing Techniques:
   1. Traffic Light Controller:
      1. Urban (Outputs only)
      2. Rural (Inputs and Outputs)
3. Human-Machine-Interfacing:
   1. LCD Display
   2. Hexadecimal Keypad
4. Analog-to-Digital Conversion:
   1. Measuring voltage divider (potentiometer)
5. Pulse Width Modulation:
   1. Controlling Motor Speed
6. Pulse Accumulator:
   1. Measuring Motor RPMs

POLICIES:

* **ADA Policy:** If you have documented disabilities, inform the instructor privately during the first week of class and make proper arrangements. Refer to the Student Handbook for SUNY New Paltz policies.
* **Attendance:** You are expected to attend lectures on a regular basis. In case of absence, it is your responsibility to obtain notes from your fellow classmates, not from the instructor.
* **Missed Coursework:** All coursework is your responsibility. There are no excuses for handing in coursework late. Coursework will be graded as late if not handed in on the due time/date, which is at the beginning of the class period on the due date. Coursework will be penalized one letter grade each day it is late.
* **Rescheduling:** There is no rescheduling unless emergencies arise related to medical or family matters. Rescheduling is contingent on the student presenting both documentation describing the reason(s) for the absence and contact information for the person providing the document(s).
* **Plagiarism:** Submitting material that is not your own work, including internet materials, is considered plagiarism, and will result in a failing mark and a report to the department chair and dean. Quoted material must be correctly cited. Refer to the Student Handbook section on Academic Integrity for a full discussion of policies on plagiarism, cheating, and forgery.