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## CONTINUING STUDIES, CORPORATE AND DISTANCE EDUCATION

## Microprocessors A - Fall 2010 (Syllabus)

 Course Number:
 17.383
 Work:
 207-438-3290

 Instructor:
 Dohn Bowden
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 978-851-0153

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**Text:** Various on-line documents – see website

**Prerequisite:** 17.341 (Logic Design I and Laboratory)

**Course Description:** Introduction to interfacing the microcontroller to the outside world through an integrated set of experiments and related lectures. The course will contain a project applying the fundamentals learned to a real world design. Approximately one-half of the course time will be an associated laboratory.

Course Calendar: Tuesday class 6:00 – 9:00 PM

| Week | Date     | Topics   | Lab     | Lab Results Due |  |
|------|----------|--|---------|-----------------|--|
| 1    | 09/07/10 | Intro, Course & Lab Overview, Microcontroller Basics | 1       |                 |  |
| 2    | 09/14/10 | PIC16F684 Overview and General Input/Output          | 1 con't |                 |  |
| 3    | 09/21/10 | Switches   | 2       | 1               |  |
| 4    | 09/28/10 | Seven Segment LEDs                                   | 2 con't |                 |  |
| 5    | 10/05/10 | Examination 1  |         |                 |  |
| X    | 10/12/10 | No Class – Monday Schedule                           |         |                 |  |
| 6    | 10/19/10 | Analog to Digital Conversion                         | 3       | 2               |  |
| 7    | 10/26/10 | Analog to Digital Conversion con't                   | 3 con't |                 |  |
| 8    | 11/02/10 | LCD Interface and Assembly Language                  | 4       |                 |  |
| 9    | 11/09/10 | Comparators  | 4 con't | 3               |  |
| 10   | 11/16/10 | Timers and Pulse Width Modulation (PWM)              | 5       |                 |  |
| 11   | 11/23/10 | Mixed C & Assembly Programming/Course Project        | Project | 4               |  |
| 12   | 11/30/10 | Examination 2  |         |                 |  |
| 13   | 12/07/10 | Course Project                                       | Project | 5               |  |
| 14   | 12/14/10 | Final Exam/Course Project Brief and Demonstration    | Demo    |                 |  |
|      |          |  |         |                 |  |
|      |          |  |         |                 |  |

General info: Attendance will be taken. Lab material must be returned or INC grade will be awarded until material is returned.

## **Grading Policy:**

Exam #1 (20%), Exam #2 (20%), Laboratory (30%), and Final Exam/Course Project (30%)

| Α  | 93-100 | B+ | 87-89 | C+ | 77-79 | D+ | 67-69    |
|----|--------|----|-------|----|-------|----|----------|
| A- | 90-92  | В  | 83-86 | С  | 73-76 | D  | 60-66    |
|    |        | B- | 80-82 | C- | 70-72 | F  | Below 60 |