Course Objectives: The purpose of this course is to strengthen your analytical and problem solving skills through application programming to help you to thrive in the engineering programs here at UML. At the end of the course you should be proficient in MATLAB, which is used in many courses here at UML. The second part of the course combines the new Analog Devices “Lab in a Box” with applications of the Arduino UNO 32 micro controller (in C) and hardware software applications. You will construct several open ended design projects including: a traffic light controller, a digital night light, an op amp.

- Please check the Course Web Site at least once per week for news, announcements, homework assignments, and pre-laboratory information. Everything will be located there.
  - In the event of bad weather, check web site for instructions. You will need to make up any cancelled labs on your own.
- Course Content: The course consists of Tuesday Lecture and 2 hours Lab per week. Lecture teaches basic theory used each week in the Laboratory. Labs meet in Perry 321. There are a number of reference presentations you will need to watch on your own.
- Purchasing Your Lab in the Box: You need to purchase on your own Lab in the Box. The Instructions are on the website. This saves you bookstore markup of 40%. We will give you a parts kit at the start of the Lab in the Box section. Text book and other materials are on the website and are free.
- Grading for the class consists of 5 graded Matlab laboratories 33%, 2 graded Matlab programming exercises worth 26%, and 40% for 6 microcontroller labs, and the remainder for participation and attendance. There are no exams. You must submit all labs to receive a grade of A or A-.
  - Weekly Lab Submissions must be typed and include your code, schematics, plots, etc. and answers to all questions. You will be graded as much for the quality of work in the report as getting the right answers.
  - Late Submissions: Labs are due at the END of your lab period the week after a program is assigned. Handing labs in late costs you 20/100 points per week. Labs should be handed in to your TA, not to me. You may help each other out, but each student is responsible for a unique submission.
  - If You Miss Laboratory: The lab is open 7/24 and you own your lab in the box. Unless you have a very good excuse, it is your responsibility to make up missed labs. You may attend another lab section, but you must hand in your materials to YOUR Assigned TA.
General Grading Rubric:
- 50 points: Does your project or code do what it is supposed to do, did you answer all the required questions
- 20 points: Is there error checking, is it well written, good coding style, variable naming, comments, is the hardware design efficient
- 30 points: Quality of your presentation. Does it show a degree of professionalism, is it well written with good grammar and language

Work Expectation: In addition to the Lecture and Laboratory, you will likely put in about 2 hours per week outside of the classroom completing lab reports, preparing for class etc. If you are not prepared to put this level of work in, please drop now. The course will have more work at the beginning as you are rapidly ramping up in Matlab.
- I expect that you are not seeing materials for first time when you are in lab!

Cheating: This is a skills building class whose purpose is to get you ready for later classes. If you cheat, you really are cheating on yourself because you will not learn these skills.