**The first two labs are tutorials for a software named PCB Artist, the rest of the labs are based on MPLAB IDE. Please follow the instructions in below to install both software. At the end of the word file, there are some video tutorials for lab equipment. I highly suggest non-ECE major students to go through them. ﻿﻿﻿**

**Microchip Software**

In this course we will use the MPLAB C compiler and the MPLAB IDE for software development, testing and debugging. You may install these programs on your home PC/laptop for use outside the classroom and laboratory environment. When installing the software, the MPLAB IDE should be installed first.

**Installation Instructions**

* Install the MPLAB IDE
* Accept the MPLAB IDE License Agreement.
* Select a Complete install for the install type.
* Select the default location for the install destination.
* Accept the Application Maestro License.
* Accept the MPLAB C32 License.
* Install the MPLAB C Compiler
* Accept the License Agreement.
* Select "Versioned Directory Name" for the installation directory.
* Select "Lite Compiler" for the installation type.

*Note:* on Windows 10 you may need to change file properties to see all C Compiler install choices correctly.   
           To do this:

1. Right click on the file, select "Properties"
2. Select "Compatibility" tab
3. Select "Override high DPI scaling behavior"
4. Select "Scaling Performed by: System"
5. Click "Ok"

* Install the PIC24 library
* I suggest installing the library (**pic24\_code\_examples\_mplab8**) into the directory C:\microchip as this is the directory name that will be used on the lab computers.

**Printed Circuit Board (PCB) Software**

We will also be using the PCB Artist software for schematic entry and PCB layout in the course.  Download the software using the link and follow the instructions given by the installer program.

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Note: Link in "PRELAB - TASK 1" is broken, but is given here: <http://www.4pcb.com/pcb-software-tips-tools.html>

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Copy these three 'ece383\_lib.\*' files to  C:\Users\Public\Documents\PCB Artist\Library

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**General Lab equipment guide:**

***How to Use a Multimeter:***  
<https://learn.sparkfun.com/tutorials/how-to-use-a-multimeter>  
<http://afrotechmods.com/tutorials/2011/11/27/multimeter-tutorial/>

***How to Use an* Oscilloscope**<http://afrotechmods.com/tutorials/2011/11/27/oscilloscope-tutorials/>  
<https://www.instructables.com/id/Oscilloscope-How-To/>

***Breadboarding***

<https://www.youtube.com/watch?v=6WReFkfrUIk>

<https://www.youtube.com/watch?v=oiqNaSPTI7w&list=TLYAP1zGiJz68>

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