ENGR101 Lab 0: Pre-Class Checklist

Welcome to ENGR101!!! On behalf of the entire course staff, welcome to what promises to be a great semester! In this course, you will learn to solve engineering problems through computing. You will use two computer programming languages in this course: MATLAB and C++. **_We assume that our students have no previous programming experience_** and teach from the ground floor. Whether you have some programming background or have never coded in your life, this class is for you! (If you've programmed before, don't worry: there will be some challenging exercises for you as well!)

This pre-class checklist is designed to help you install MATLAB on your own computer. In lecture, we shall be doing a lot of "live coding" demos and you will be given the chance to follow along on a laptop during the demos and to solve simple in-class exercises. If you do not own a laptop, you might be able to borrow one from CAEN for lectures; email your instructor for more information.

Part 1: Verifying your CAEN account

This class includes a weekly lab component. Your lab is a time to explore the concepts that have have been presented in lecture and to improve your understanding of the week's lectures. You will be using the **C**omputer **A**ided **E**ngineering **N**etwork (CAEN) which is provided through the College of Engineering. Prior to your first lab, please do the following:

1. Visit a CAEN lab ([here are their locations](#)). These labs exist in every engineering building as well as many of the residence halls. There are even a few CAEN computers in the Fishbowl on Central Campus!
2. Login to the Windows environment using your uniqname (e.g. _if your umich email address is student@umich.edu your uniqname would be_ **student**) and your Kerberos password. (This will be the same password that you use to access your school email account.)

3. If you are able to successfully login (e.g. you don't get an error message) than your CAEN account is setup!
4. **If you encounter an error message** (This could happen for any number of reasons, don't worry!) please send the following email to **caen@umich.edu** or visit the CAEN Hotline in the Duderstadt Center. **NOTE:** Your email to CAEN should come from your Michigan Student email address (e.g. @umich.edu).

Please replace **NAME** with your full name, **UNIQNAME** with your uniqname (e.g. *student* if your email address is student@umich.edu), **LABLOCATION** with the building and room number where you tried to login (e.g. Pierpont B521) , and **ERROR MESSAGE** with the error message that you received when you tried to login.

Hi,

My name is **NAME**, and my uniqname is **UNIQNAME.**

I'm enrolled in ENGR101 for Fall 2017 and I just attempted to login to the Windows environment in **LABLOCATION** and received the error message, "**ERROR MESSAGE".** I need access to both the Windows and Linux CAEN environments for this class. Please help!

If you need any additional information, please don't hesitate to contact me.

Thank you and I look forward to hearing from you on this,

NAME

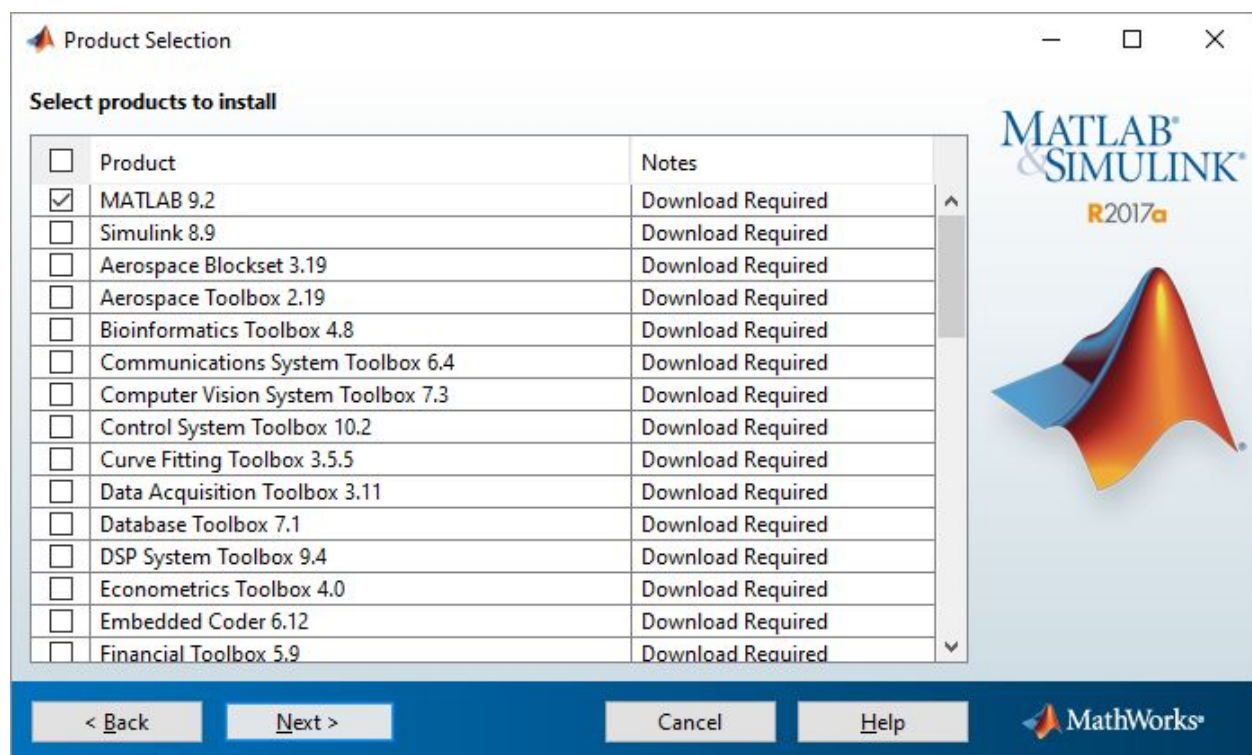
Part 2: Installing MATLAB ®

For the first half of the semester, you will be using a software package called MATLAB. This program is produced by a company called Mathworks and is available to the general public for purchase. The University of Michigan has negotiated a deal with Mathworks that provides you with a **FREE COPY** of MATLAB (Go Blue!). We encourage you to install MATLAB on your personal computer so that you can do examples in

lecture, work on your ENGR101 assignments and labs, and work on class projects with this free product. We hope that you will also find this product useful in your other courses!

To install MATLAB on your personal computer, follow the instructions provided on this webpage:

https://www.itcs.umich.edu/sw-info/math/MATLABStudents.html

You **DO NOT** need to download all of the products associated with MATLAB! As you follow the "Downloading MATLAB" instructions given at the above link, and the associated steps at https://www.mathworks.com, you will eventually reach the installer page shown in Figure 1.

Figure 1. This the Product Selection page displayed by the Installer. When first displayed, all products may be checked for download. If so, then please check the Product button at top-left to *uncheck* all products. Then, select **MATLAB**, scroll down and select the **Image Processing Toolbox** and the **Statistics and Machine Learning Toolbox** and carry on with the dowload.

This is the Product Selection page in the installer (for Windows products, the most recent installer is *matlab_R2017a_win64.exe* which will be downloaded to your computer's Downloads directory). The topmost product is one of 3 modules that are required for ENGR101. Scroll down through the installer list to find the other required modules. The modules that you will be using are:

MATLAB
Image Processing Toolbox
Statistics and Machine Learning Toolbox

Uncheck everything else. Click "Next" and follow the instructions to install MATLAB on your computer.

Part 3: MATLAB Overview

MATLAB comes with an **IDE** or Integrated Development Environment. This means that you can *write some code* and then immediately see the results, or helpful error messages.

Watch this short youtube video to familiarize yourself with the MATLAB application and IDE. If you have any questions about what you see, write them down and bring them to your lab.

As you watch the video, follow along either on your personal computer or in a CAEN lab. As mentioned above, we highly recommend installing MATLAB on your personal computer. If you run MATLAB on a CAEN computer, you can launch MATLAB by following these instructions:

1. Verify that the machine is booted into Windows (i.e. it looks like a Windows login screen).
    a. If the machine isn't booted into Windows, restart the machine and select the Windows icon when you are prompted for the operating system
2. Log into Windows using your CAEN uniqname and password
3. Shortly after login, a browser window should appear with https://software.engin.umich.edu in the address bar
4. Scroll down until you see an entry labelled: "MATLAB R2017a (64-bit) Instructional"
5. Click the green "Launch" button corresponding to this entry
    a. Sometimes this will cause the page to refresh and display that it's validating the session. If this happens, wait for validation to finish and repeat steps 4 & 5

6. You should see the application loading in the Cloudpaging Player program. Once the status is set to "Ready", select the MATLAB entry and click the "Launch" button at the top
7. MATLAB will now launch (may take a minute)

CONGRATULATIONS. You have just completed Lab 0 and are ready for ENGR101 !!!