MATLAB Access for Math 211.3

January–April, 2013

Access to MATLAB can be obtained from the following locations.

1 Arts and Science Computer Labs

The College of Arts and Science Computer Labs are located in most Arts and Science buildings around campus, including Physics 6 (basement), Geology 141, and Arts 41 (basement). You can check location and availability of all Arts and Science Computer Labs from the website

`http://artsandscience.usask.ca/ascl/locations.php`

To log in, you need your NSID and password. This is the login information used for the PAWS website (your NSID is composed of your initials followed by a 3-digit number, e.g., `kdj243`). Before the lab, you should make sure you can log in to these computers. If you need assistance, the Arts and Science Support Center is located at Arts 140.

2 Computer Science Computer Labs

The Department of Computer Science Computer Labs are located on the 3rd floor of the Spinks Building, which is the new addition to the Thorvaldson Building. Although you should have access to these computers if you are enrolled in Math 211.3, account creation may still be going through the system, particularly if you were late registering. Later in the course, there are several tools you will need that are only available on these computers. You can use your NSID and password to log in to a computer running Windows (you can restart a machine running Linux and select Windows when the computer restarts, using the arrow keys) or Mandriva, a version of Linux. There are also machines running Mac OSX. All three operating systems have MATLAB installed.

3 Finding and Opening MATLAB

3.1 Windows

The majority of the computers on campus run Windows. To open MATLAB in Windows, click

Start → All Programs → Class Software → Math & Stats → MATLAB

Once MATLAB opens, you need to ensure you save your work to an appropriate location. At the top, there is a text box marked "Current Directory" or "Current Folder", depending on the version of MATLAB. Make sure this box says "H:\"; otherwise type it in and press Enter. To create a new sub-folder for your Math 211 work, the easiest way is to click inside the main MATLAB window, beside the "≫". Type "mkdir Math211" followed by Enter, then "cd Math211" followed by Enter. You have just created a new folder called "Math211", and you are set to start working with MATLAB. You can also click the box beside the Current Directory text box to create a new folder. All U of S students have storage space in their H drive on a Windows machine. No matter which Windows computer you use on campus, you can access any information saved on it, making it a good location to save your work. It can also be accessed from off campus; this will be discussed in the tutorials.

3.2 Linux

Most of the computers located on the 3rd floor of Spinks run both Windows and Mandriva, a version of Linux. To access MATLAB on a computer running Linux, the easiest way is to open a terminal window by clicking

Applications → Tools → Terminal

typing in `matlab` and pressing Enter. This launches MATLAB. The Linux machines do not have an easy way to access your H drive, so an excellent place to save your work is in your home folder or on the Desktop.

3.3 Mac OSX

There are also computers running Mac OSX on the 3rd floor of Spinks. To use MATLAB on these machines, log in using your NSID and password. Open Finder by clicking the blue icon in the bottom left corner of the screen. In the window that appears, click Applications from the left menu. In the main window, double click the MATLAB icon. This launches MATLAB. The Mac machines do not have an easy way to access your H drive, so an excellent place to save your work is in your home folder or on the Desktop.

4 Remote Access

Because we expect to be doing some parallel computing in this course, there are two other computers you may have to use. The first is called `moneta`; it is a large-memory machine (256 GB RAM with 16 cores). The second is called `socrates`; it is a cluster of 37 nodes (296 cores). More information about these machines can be found at

`http://www.usask.ca/its/services/research_computing/HPC/hpc_training.php`

To log in to one of these machines remotely, you need a terminal window.

If you are in Linux or Mac OSX, open a terminal window. In Linux, this is done by clicking

Applications → Tools → Terminal

If you are in Mac OSX, there is an icon for Terminal in the dock. If you are on a Windows machine in the Spinks building, open Cygwin (this is a quick launch on the task bar, or go through the Start Menu). Otherwise for Windows, you will need to download PuTTY from:

`http://the.earth.li/~sgtatham/putty/latest/x86/putty.exe`

If you are using a Linux or Mac OSX machine on campus with an open terminal window, or a Windows machine with an open Cygwin window, type

`ssh -X NSID@moneta.usask.ca` or `ssh -X NSID@socrates.usask.ca`

into the window. The first time you try to log in, you will be prompted to confirm the authenticity, so type "yes" followed by Enter. You will then be prompted for your password. Once you have logged in, type `matlab` into the terminal, and a command-line version of MATLAB will launch on `moneta` or `socrates`, depending which one you logged into. We will go into more detail in the tutorials.

If you are using a Window machine while off campus, it is recommended that you download PuTTY and open PuTTY by clicking "putty.exe". In the window that appears, type into the Host Name box

`NSID@tuxworld.usask.ca`

(replacing `NSID` with your NSID) and click "open". When asked about the server's host key, click "yes". You will be prompted for your password. Once you have logged in, you can type

`ssh -X NSID@moneta.usask.ca` or `ssh -X NSID@socrates.usask.ca`

into the terminal window. The first time you try to log in, you will be prompted to confirm the authenticity, so type "yes" followed by Enter. You will then be prompted for your password. Once you have logged in, type `matlab` into the terminal, and a command-line version of MATLAB will launch on `moneta` or `socrates`, depending which one you logged into. We will go into more detail in the tutorials.

If you are using a Linux or Mac machine while off campus, open a terminal window. Type

```
ssh -X NSID@tuxworld.usask.ca
```

and enter your password. Once you have logged in to `tuxworld`, type

`ssh -X NSID@moneta.usask.ca` or `ssh -X NSID@socrates.usask.ca`

into the terminal window. You will be prompted to confirm the authenticity the first time you try to log in, so type "yes" followed by Enter. You will then be prompted for your password. Once you have logged in, type `matlab` into the terminal, and a command-line version of MATLAB will launch on `moneta` or `socrates`, depending which one you logged into. We will go into more detail in the tutorials.

Note: For security reasons, `moneta` and `socrates` are only accessible from computers on the U of S network, so you will encounter problems if you try to log in to `moneta` or `socrates` directly from an off-campus computer. This is why you must first log in to `tuxworld`. If you have problems, please feel free to ask in the tutorials.