[Find us on GitHub](https://github.com/AnnaWilliford/2017-02-04-UTA/)

[Software Carpentry banner](http://software-carpentry.org/)

**University of Texas at Arlington**

**MY FILES: C:\Users\user\Desktop\Software\_Carpentry**

Feb 4-5, 2017

9:00 am - 5:00 pm

**Instructors:** Daren Card, Devendra Umbrajkar, Gaurav Kolekar, Kevin Vilbig

**Helpers:** Peace Ossom Williamson, Anna Williford, Mehdi Eslamieh, James Titus-McQuillan, Audra Andrew

**General Information**

[Software Carpentry](http://software-carpentry.org)'s mission is to help scientists across all disciplines get more research done in less time and with less pain by teaching them basic lab skills for scientific computing. This hands-on workshop will cover basic concepts and tools, including program design, version control, data management, and task automation. Participants will be encouraged to help one another and to apply what they have learned to their own research problems.

**Who:** The course is aimed at anyone who is interested in learning new tools. **You don't need to have any previous knowledge of the tools that will be presented at the workshop.**

**Where:** UTA campus, Main Library, 6th floor. Get directions with [OpenStreetMap](https://www.openstreetmap.org/?mlat=32.729678&mlon=%20-97.112926&zoom=16) or [Google Maps](https://maps.google.com/maps?q=32.729678,%20-97.112926).

**Requirements:** Participants must bring a laptop with a few specific software packages installed (listed [below](https://annawilliford.github.io/2017-02-04-UTA/#setup)). They are also required to abide by Software Carpentry's [Code of Conduct](http://software-carpentry.org/conduct.html).

**Contact**: If you have questions about the workshop please email to [awillifo@uta.edu](mailto:awillifo@uta.edu). For help with software installation please email to [devendra1810@gmail.com](mailto:devendra1810@gmail.com) .

**Schedule**

**Day 1**

|  |  |
| --- | --- |
| 09:00 | [Pre-workshop Survey](https://www.surveymonkey.com/r/swc_pre_workshop_v1?workshop_id=2017-02-04-UTA) |
| 09:00 | Intro to Python 1 |
| 10:45 | Coffee |
| 11:00 | Intro to Python 2 |
| 12:30 | Lunch break |
| 1:30 | Linux Shell 1 |
| 3:00 | Coffee |
| 3:15 | Linux Shell 2 |
| 4:45 | Wrap-up |

**Day 2**

|  |  |
| --- | --- |
| 09:00 | Python Programming |
| 10:45 | Coffee |
| 11:00 | Data Analysis with Python 1 |
| 12:30 | Lunch break |
| 1:30 | Data Analysis with Python 2 |
| 3:00 | Coffee |
| 3:15 | Version Control with Git |
| 4:30 | Wrap-up |
| 4:45 | [Post-workshop Survey](https://www.surveymonkey.com/r/swc_post_workshop_v1?workshop_id=2017-02-04-UTA) |

**Etherpad:** <http://pad.software-carpentry.org/2017-02-04-UTA>.   
We will use this Etherpad for chatting, taking notes, and sharing URLs and bits of code.

**Setup**

To participate in a Software Carpentry workshop, you will need access to the software described below. In addition, you will need an up-to-date web browser.

**The Bash Shell**

Bash is a commonly-used shell that gives you the power to do simple tasks more quickly.

**Windows**

1. Download the Git for Windows [installer](https://git-for-windows.github.io/).
2. Run the installer and follow the steps bellow:
   1. Click on "Next".
   2. Click on "Next".
   3. Click on "Next".
   4. Click on "Next".
   5. Click on "Next".
   6. **Select "Use Git from the Windows Command Prompt" and click on "Next".** If you forgot to do this programs that you need for the workshop will not work properly. If this happens rerun the installer and select the appropriate option.
   7. Click on "Next". **Keep "Checkout Windows-style, commit Unix-style line endings" selected.**
   8. **Select "Use Windows' default console window" and click on "Next".**
   9. Click on "Next".
   10. Click on "Finish".

This will provide you with both Git and Bash in the Git Bash program.

**Mac OS X**

The default shell in all versions of Mac OS X is Bash, so no need to install anything. You access Bash from the Terminal (found in /Applications/Utilities). You may want to keep Terminal in your dock for this workshop.

**Linux**

The default shell is usually Bash, but if your machine is set up differently you can run it by opening a terminal and typing bash. There is no need to install anything.

**Git**

Git is a version control system that lets you track who made changes to what when and has options for easily updating a shared or public version of your code on [github.com](https://github.com/). You will need a [supported](https://help.github.com/articles/supported-browsers/) web browser (current versions of Chrome, Firefox or Safari, or Internet Explorer version 9 or above).

**Windows**

Git should be installed on your computer as part of your Bash install (described above).

**Mac OS X**

**For OS X 10.9 and higher**, install Git for Mac by downloading and running the most recent "mavericks" installer from [this list](http://sourceforge.net/projects/git-osx-installer/files/). After installing Git, there will not be anything in your /Applications folder, as Git is a command line program. **For older versions of OS X (10.5-10.8)** use the most recent available installer labelled "snow-leopard" [available here](http://sourceforge.net/projects/git-osx-installer/files/).

**Linux**

If Git is not already available on your machine you can try to install it via your distro's package manager. For Debian/Ubuntu run sudo apt-get install git and for Fedora run sudo yum install git.

**Text Editor**

When you're writing code, it's nice to have a text editor that is optimized for writing code, with features like automatic color-coding of key words.

**Windows**

You can use your favorite text editor. If you do not have one, we recommend [Notepad++](http://notepad-plus-plus.org/) or [Sublime Text](http://www.sublimetext.com/). **Be aware that you must add its installation directory to your system path.** To add Notepad++ to the path: 1) Open Git-Bash from the start menu. 2) Type: cd [enter] to make sure you are in your home directory. 3) Type: notepad .bash\_profile [enter]. This will create .bash\_profile file in Notepad. Add the following text to the file:  
export PATH=$PATH:"C:\Program Files (x86)\Notepad++"   
alias npp=notepad++  
4) Save the file and exit Notepad. 5) Open a new Git-Bash window. You should now be able to launch Notepad++ by typing: npp [enter]. If you run into trouble please ask your instructor to help you with this.

**Mac OS X**

You can use your favorite text editor. If you do not have one, we recommend [Text Wrangler](http://www.barebones.com/products/textwrangler/) or [Sublime Text](http://www.sublimetext.com/).

**Linux**

You can use your favorite text editor. If you do not have one, we recommend [Gedit](https://wiki.gnome.org/Apps/Gedit), [Kate](http://kate-editor.org/) or [Sublime Text](http://www.sublimetext.com/).

**Python**

[Python](http://python.org) is a popular language for scientific computing, and great for general-purpose programming as well. Installing all of its scientific packages individually can be a bit difficult, so we recommend [Anaconda](https://www.continuum.io/anaconda), an all-in-one installer.

Regardless of how you choose to install it, **please make sure you install Python version 3.x** (e.g., 3.4 is fine).

We will teach Python using the IPython notebook, a programming environment that runs in a web browser. For this to work you will need a reasonably up-to-date browser. The current versions of the Chrome, Safari and Firefox browsers are all [supported](http://ipython.org/ipython-doc/2/install/install.html#browser-compatibility) (some older browsers, including Internet Explorer version 9 and below, are not).

**Windows**

1. Open <http://continuum.io/downloads> with your web browser.
2. Download the Python 3 installer for Windows.
3. Install Python 3 using all of the defaults for installation *except* make sure to check **Make Anaconda the default Python**.

**Mac OS X**

1. Open <http://continuum.io/downloads> with your web browser.
2. Download the Python 3 installer for OS X.
3. Install Python 3 using all of the defaults for installation.

**Linux**

1. Open <http://continuum.io/downloads> with your web browser.
2. Download the Python 3 installer for Linux.
3. Install Python 3 using all of the defaults for installation. (Installation requires using the shell. If you aren't comfortable doing the installation yourself stop here and request help at the workshop.)
4. Open a terminal window.
5. Type

bash Anaconda-

and then press tab. The name of the file you just downloaded should appear.

1. Press enter. You will follow the text-only prompts. When there is a colon at the bottom of the screen press the down arrow to move down through the text. Type yes and press enter to approve the license. Press enter to approve the default location for the files. Type yes and press enter to prepend Anaconda to your PATH (this makes the Anaconda distribution the default Python).

Once you are done installing the software listed above, please go to [this page](https://annawilliford.github.io/2017-02-04-UTA/setup/index.html), which has instructions on how to test that everything was installed correctly.

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