Software for ME507: A Partial, Preliminary List

The following is all free (to use) software, and most of it is open source.

The Virtual Machine

We have an ME507 virtual machine which can run under VirtualBox™ or VMWare™, and it contains all the software mentioned below. See the page *Ubuntu VM with ME507 Tools* on Canvas™ for instructions on how to install the VM.

An experimental option is to use a bootable USB drive with the Ubuntu Linux OS and the ME507 tools installed. It can be easy to set up, but things run slowly. We're still working the bugs out of this option.

Installing Tools in Your Operating System

The following programs can be installed one at a time instead of using a virtual machine. It's more work but uses less disk space and the programs run faster (except on a certain popular operating system where nothing runs very fast…)

Programs you have previously used in ME305 and/or ME405 need not be reinstalled.

- Autodesk™ **Eagle PCB**

  This circuit design software is free for non-commercial use (though not open source), runs on several platforms, and is good enough for ME's. I've even seen EE's use it, but I won't mention any names.

For MacOS™ and Windows™, you can get Eagle by itself or as a part of Fusion 360™. For Linux, Eagle must be downloaded by itself. Begin by setting up a student account using instructions at:

https://knowledge.autodesk.com/support/eagle/learn-explore/caas/sfdcarticles/sfdcarticles/Eagle-Education.html (https://knowledge.autodesk.com/support/eagle/learn-explore/caas/sfdcarticles/sfdcarticles/Eagle-Education.html)

For those who don't prefer bloatware, there's an Eagle download page at

https://www.autodesk.com/products/eagle/free-download (https://www.autodesk.com/products/eagle/free-download)

- **VSCode** with the **PlatformIO** and **C/C++** extensions

  VSCode is an excellent code editing and debugging environment. PlatformIO is an extension used to write programs for microcontrollers. There is a web-based version of VSCode, but unfortunately, PlatformIO isn't available for the web-based version, so we must download and install VSCode.

  https://code.visualstudio.com/Download (https://code.visualstudio.com/Download)

  Once VSCode is up and running, extensions PlatformIO, C/C++, *etc.* can be installed. Click the Extensions icon in the bar at far left of VSCode (it looks like some little boxes), type `PlatformIO` in the search bar, click the `Install` button, and wait a while for the automatic installation process to complete. VSCode will need to be restarted once or twice (it *is* a Microsoft™ product).

- **Doxygen**

  You don't need DoxyPy or DoxyPyPy for ME507. For Windows™ or Mac™, go to

  https://www.doxygen.nl/download.html (https://www.doxygen.nl/download.html)

  and scroll down to the `Sources and Binaries` section. For Ubuntu/Debian/Mint/*etc.*, just run

  ```
  sudo apt install doxygen doxygen-gui
  ```

- **GitHub Desktop**

  This Git GUI is helpful unless you prefer to type things such as `git commit -m "Fixed bug 32"` again and again.

  https://desktop.github.com/ (https://desktop.github.com/) for MacOS™ and Windows™, or

  https://github.com/muroko/github-desktop-linux (https://github.com/muroko/github-desktop-linux) for Linux.

- **PulseView** if you have bought a cheap logic analyzer

  Go to https://sigrok.org/wiki/Downloads (https://sigrok.org/wiki/Downloads) and scroll down to the section with binaries for your operating system, or for Ubuntu/Debian/Mint/*etc.* Linux, just run

  ```
  sudo apt install pulseview
  ```

  For USB oscilloscopes, different models need different software. A good one for the Hantek and similar `scopes mentioned above is OpenHantek6022 which can be found on GitHub.