Software Installation and Tutorials

BME253L (Fall 2025)

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KiCad

We will be using KiCad for electronic computer aided design (ECAD), including schematic capture and Simulation Program with Integrated Circuit Emphasis (SPICE) simulations.

Install KiCad on your laptop: https://www.kicad.org/

Visual Studio Code (IDE)

I recommend using Visual Studio Code as the IDE for all projects in this class that require data analysis, plotting, etc.

In addition to installing the base program, please install the following Extensions:

- Python Extension Pack
- Jupyter
- GitHub CoPilot (AI-assisted coding)
- Sign up for free GitHub Education Student account to get "Pro" access to this extension: https://github.com/education/students

> **Tip**
>
> You will need a document to verify your student status that includes your dates of enrollment, which your DukeCard does not contain. Instead, you can get an Enrollment Verification document through DukeHub (Academics Tab) and convert the downloaded PDF to a JPG or PNG file to upload to GitHub.

Technical Report Preparation (Jupyter Notebook)

Each lab exercise will have an associated technical report submitted. These reports will be prepared and submitted using Python-based Jupyter notebooks that will be converted to PDF files and uploaded to Gradescope.

If you need to install a Python environment on your laptop, then this is a good starting point: Getting Started with Python in VS Code.

This is a good tutorial on getting started with Jupyter notebooks in VS Code: Jupyter Notebooks in Visual Studio Code.

You can also choose to edit your Jupyter notebooks with a cloud-based tool, like Google CoLab, but that approach will not receive help / troubleshooting from Dr. Palmeri or the teaching team.

Gradescope

Please complete the Gradescope quiz when you are done installing all of these tools.