

# BEST Coding Workshop

## Summer 2020

*Mondays, Wednesdays from 4:30 - 5:30 PM EST*

**Zoom:** <https://tufts.zoom.us/j/91006005039>

**Github:**

<https://github.com/jessllrr/BEST-summer-coding>

# Instructor

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*BEST 2022*

**Pronouns:** She, Her, Hers

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### Goals and Objectives:

- To foster students' confidence in approaching Tufts course material, such as the content in ES2 (Intro to Computing in Engineering), COMP11 (Intro to Computer Science), ES3 (Intro to Electrical Systems)...
- To explore the intersection of software and hardware components using Python and Micro:bit.
- To introduce helpful academic resources and commonly used assistive platforms.
- To learn the fundamentals of coding across all programming languages.
- To build collaboration skills through group projects.

### Participation:

This is a space for you to explore coding in a structured environment. The expectation is that you attend all Zoom sessions. If you have a scheduling conflict, please reach out to Campbell or myself. Any out of class assignments should be completed by Monday morning, 9am EST.

### Technology Use:

For this workshop, along with learning python, we will be using software and hardware supplements to support our learning. Below is a list of everything we will be using!

#### Software:

- Google Colaboratory  
"Colab" is a platform which allows anybody to write and execute arbitrary Python code through a browser. While Colab works on most major browsers, it has been thoroughly tested on Chrome, Firefox, and Safari.
- Github  
Github is a code sharing and publishing service. It serves as a place for developers to store and document different versions of their projects. Think of it as a filing system for every draft of a document; or in this case, every version of a coding project.

#### Hardware:

- Micro:bit
- Breadboard
- Jumper Wires
- Alligator Clips
- Breadboard Speaker
- LEDs/Resistors

## Weekly Schedule

\*assignments can be found at Github: <https://github.com/jesslrr/BEST-summer-coding>

Date:	Topic of the Day:	Assignment, Due Date:
Wed., July 1	<i>Variables and variable assignments; Data types and operators</i>	WEEK 1: Intro to Python, Due Monday, July 6
Mon., July 6	<i>Review of last week; flow of execution; loops and iterations</i>	WEEK 2: Functions, Due Friday, July 10
Wed., July 8	<i>If-statements and functions; debugging</i>	-
Mon., July 13	<i>Lists, input/output, and files</i>	WEEK 3: Practice Problems, Due Friday, July 17
Wed., July 15	<i>Intro to micro:bit</i>	-
Mon., July 20	<i>Building with the micro:bit</i>	-
Wed., July 22	<i>Applications of programming: Physics Simulator!</i>	-
Mon., July 27	<i>TBA</i>	-
Wed., July 29	<i>TBA</i>	-
Mon., August 3	<i>Connecting coding principles to other languages: C++</i>	

## Additional Resources:

A big part of learning how to code is learning how to look stuff up! You'd be surprised how often we use Google to solve our problems. Here is a list of some websites that have really helped me in the past:

- <https://www.geeksforgeeks.org/python-programming-language/> - My personal favorite guide
- <https://www.w3schools.com/python/> - Another useful guide
- <https://docs.python.org/3/> - Ultimate python resource, official python documentation
- <http://greenteapress.com/thinkpython/thinkpython.pdf> - a handy intro to python textbook