**Winter Working Connections 2023**

**Title:** Introduction to Python

**Description:** A virtual hot toddy to warm up your Winter Break!

We will provide a brief introduction to programming with Python with some exciting Hot Topics in Python. You’ll finish warmly with lots of code examples and slides and notebooks to use in your own courses!

**Pre-reqs:**

Some knowledge of programming concepts, e.g. variables, loops, and selection structures

Textbook:

Python Crash Course: A Hands-On, Project-Based Introduction to Programming

3rd Edition

Eric Matthes  
No Starch Press   
978-1718502703

**Home System Requirements** :

GitHub and Google accounts recommended (we will use Google Colab)

Python 3.12 installed on your system (python.org)

Bios

A person with flowers on her head

Description automatically generated with medium confidence

Pamela Brauda is a faculty member in the School of Technology at Florida State College at Jacksonville, where she teaches courses in programming, networking, database, and data science. Pamela is a co-designer of the A.S. in Data Science Technology program at FSCJ, co-principal investigator for the DataTEC project (NSF Grant #1902524 “Meeting Industry Needs through a Two-Year Data Science Technician Education Program”), a faculty co-advisor for the FSCJ STARS Computing Corps, and the proud owner of an autographed copy of "R for Data Science" by Hadley Wickham. Before teaching at FSCJ, Pamela worked as a Metadata Analyst with the Florida Department of Law Enforcement, taught programming and software development at the University of North Florida, created and operated several small businesses, and taught high school mathematics. She graduated from the University of Georgia with a B.S. and from the University of North Florida with an M.S. in Computer Science.

A person smiling for the camera

Description automatically generated with medium confidence

David Singletary is a faculty member in the School of Technology at Florida State College at Jacksonville. David is the principal investigator for the DataTEC project (NSF Grant #1902524 “Meeting Industry Needs through a Two-Year Data Science Technician Education Program”), co-designer of the A.S. in Data Science Technology program at the college, and a faculty co-advisor for the FSCJ STARS Computing Corps. He teaches courses in software development, data science, and FinTech. Although David teaches R at FSCJ, he **does** **not** own an autographed copy of "R for Data Science" by Hadley Wickham and is extremely envious of Pamela Brauda's copy. In a previous life David was employed as a software engineer at Cisco and various startup companies in Silicon Valley. David graduated from the University of Central Florida with a B.S. and from the University of Colorado with an M.S. in Computer Science.

**Objectives**

1. Recall basic Python syntax and common programming terminologies such as variables, data types, and loops
2. Demonstrate an understanding of fundamental programming concepts, such as variables, data types, and control structures in Python
3. Apply fundamental programming concepts to write simple Python programs, such as calculations, data manipulations, and basic algorithms

**Day 1 (Dec 11) Introductory Topics**

* Python History, Data Types, Variables, Input/Output, If Statements, and Loops

**Day 2 (Dec 12) Intermediate Topics**

* Lists, Tuples, Dictionaries, Functions, Modules, and Exceptions

**Day 3 (Dec 13)  Hot! Topics (Data Science, AI)**

* Numpy, Pandas, and Matplotlib for Data Science
* Scikit-learn for AI