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Binghamton Codes! Program: the development of Python programming courses to increase computational literacy skills in the humanities



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SUNY Digital Pedagogy in the Humanities

Spring 2021

The What and the Why

The **Binghamton Codes! Program** is an innovative learning initiative sponsored by a Binghamton alumnus, in collaboration with the Harpur College of Arts and Sciences at Binghamton University

The goal of this program is to give **undergraduate students** the opportunity to **learn coding skills** even if they are not majoring in computer science

Build students' **computational confidence** and **self efficacy**

Began with a **two-course sequence** pilot focused on **Python programming**, launched in Spring and Fall 2020

Why Python

- it is a high-level programming language, making it easier for new learners
- it is a free to use, open source language
- the syntax is clear and simple to read and understand
- it is a versatile language, offering a variety of uses across fields and learning paths
- large number of free resources and tutorials available
- considered a top choice for beginners



HARP 150 and HARP 151 - What they Learn

HARP 150 - Coding in Action I

- Fundamental skill-building
- Command line
- Environments
 - Microsoft Visual Studio Code, Jupyter Notebook, Google Colab
- Intro to open data
- Python data packages
- Other packages and libraries
- Python / Excel

HARP 151 - Coding in Action II

- Project-based course
- Group projects and individual projects
- Incorporate an intro to project management lifecycle
- Intro to HTML / CSS
- Webscraping and APIs
- Game development
- Other applications, depending on interest of the class

Both Courses include

- ★ Guest lecturers from the field
- ★ Open educational resources (OERs)
- ★ Pre- and post-assessment surveys
- ★ Exit tickets attached to each lab submission
- ★ A mix of learning media (readings, videos, activities, audio, tutorials, projects)

Recommendations for getting started

- Environmental scan to see if courses like these already exist in humanities programs at your campus
- If learning Python for your first time, check out online tutorials (A LOT of free ones for Python)
- Learn to be comfortable with not knowing all of the answers
- Rather than teaching a full class on Python, see if there is a way to incorporate a particular use for Python in the course(s) you already teach (Remember, Python is very versatile)
- Reach out to other instructors who have already done this or those who use Python - it is a very friendly community

Just a few examples of how you could use Python in your class

Python can be used for:

- Accessing, Cleaning, visualizing, and analyzing data
- Analyzing a corpus of texts
- Creating interactive games
- Write plain language summaries and other writing projects
- Critical thinking and problem solving activities
- Mapping geographic data
- Working with multiple file types
- How to automate an everyday process

Thank you!

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