

Python 102 – Applied Programming & Data Systems

OEM: Galvanize • Code: PYTHON_102_APPLIED_PROGRAMMING_DATA_SYST

COURSE DESCRIPTION

Python 102 takes learners beyond scripting and introduces the capabilities needed for applied automation, data engineering tasks, and contributing to real software projects.

AUDIENCE PROFILE

- Active duty service members
- Government civilians
- Reservists and national guard service members (must be on orders to attend)

PREREQUISITES

- A personal computer that is reasonably new (within the last 4-5 years)
- 16 GB RAM (8 GB acceptable, but not recommended)
- Mac or Windows OS
- Video/audio capable webcam (can be a separate webcam device)
- A reliable, strong internet connection

COURSE OBJECTIVES

By the end of this course, participants will be able to:

- Build reliability into Python code via testing
- Write programs that connect to public APIs
- Understand and work with larger programs using modules and packages
- Model real-world problems with advanced data structures

COURSE OUTLINE

Module 1: Build reliability into Python code via testing

- Testing ensures programs behave as expected, which is critical for mission environments where code accuracy cannot be left to chance.

Module 2: Write programs that connect to public APIs

- Many modern systems expose data through APIs. Learn to pull, send, and integrate live data to automate workflows and build powerful data-driven tools.

Module 3: Understand and work with larger programs using modules and packages

- Real-world software isn't a single file. Learn to contribute to multi-file codebases, understand architecture, and collaborate with engineering teams.

Module 4: Model real-world problems with advanced data structures

- Learn how to map real mission scenarios to code, unlocking the ability to prototype solutions for scheduling, resource allocation, data pipeline steps, and more.

Module 5: Resulting Capability

- Participants complete the course ready to build small applications, automate multi-step processes, integrate external data sources, and work within a larger software ecosystem. These are foundations for future work in analytics, automation, and software roles.