

Introduction to Python

Student Course Guide

Prerequisite: None

INSTRUCTIONAL MATERIAL

There are no required texts for this course. Access to a desktop or preferably a laptop is required. Any examinations will be based solely on lectures, presentations, and notes provided throughout the course. References that may be useful as study aids will be provided throughout the course.

COURSE DESCRIPTION

The course is designed to provide an introduction to the Python programming language. The focus of the course is to provide students with an introduction to programming, I/O, and visualization using the Python programming language.

COURSE OBJECTIVES

Upon the successful completion of this course, the student will be able to:

- Install and run the Python interpreter
- Create and execute Python programs
- Understand the concepts of file I/O
- Be able to read data from a text file using Python
- Plot data using appropriate Python visualization libraries

COURSE INTRODUCTION

The goal of this course is to provide an introduction to Python. The course will discuss topics necessary for the participant to be able to create and execute Python programs. The lectures and presentations are designed to provide knowledge and experiences to students that serve as a foundation for continued learning of presented areas.

COURSE SCHEDULE

The weekly schedule below describes the learning activities that will help you achieve the course objectives listed above and the assessments that will be used to measure your mastery of the outcomes. This schedule is subject to change.

WEEK 1 - Course introduction

Resources:

Laptop or Desktop PC

Course objective in focus:

- Instructor and students introductions
- Introduction to the Python programming language
- Obtaining and installing Python
- Writing your first 'Hello World!' program

Assignment(s)

- Assignment 1 (obtain and install Python, create and execute 'Hello World!' program)

WEEK 2 - Introduction to Python

Resource:

Laptop or Desktop PC

Course objective in focus:

- Gain knowledge of Python syntax
- Learn variable declarations in Python
- Learn control structures
- Learn loop constructs
- Understand modules

Assignment(s)

- Assignment 2 - Scripting exercise

WEEK 3 - Input/Output

Resource:

Laptop or Desktop PC

Course objective in focus:

- Learn about file processing concepts
- Learn how to read data from a file
- Learn techniques for storing data in variables
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Assignments

- Assignment 3 - File I/O

WEEK 4 – Visualization of Data

Resource:

Laptop or Desktop PC

Course objective in focus:

- Gain knowledge of Python visualization libraries
- Create a plot of retrieved data

Assignment(s)

- Assignment 4 – Plot dataset