



## FSD-601: Introduction to Python

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### Description:

3 credits/126 hours

Prerequisite: None

Introduction to Python will help students develop a strong understanding of the Python platform. In this course, students will be taught to work with all the tools in Python to design and implement software. Students are introduced to graphics and frameworks for image processing and GUI application development. This course will cover five major aspects of computing: programming basics, object-oriented programming (OOP), data and information processing, software development life cycle, and contemporary applications of computing.

**Textbook:** Fundamentals of Python: First Programs, 2<sup>nd</sup> Ed., Lambert & Osborne – ISBN: 978-1-337-56009-2

### Course objectives:

Throughout the course, you will meet the following goals:

- Understand how hardware and software collaborate in a computer architecture
- Learn about the basic phases of software development: analysis, design, coding, and testing
- Develop a strong understanding of Python and how to use the various functions and tools
- Learn different ways to incorporate images and graphics into software design
- Design, implement, and analyze search and sort algorithms

### Contents:

Chapter 1: Introduction

Chapter 2: Software Development, Data Types, and Expressions

Chapter 3: Loops and Selection Statements

Chapter 4: Strings and Text Files

Chapter 5: Lists and Dictionaries

Chapter 6: Design with Functions

Chapter 7: Simple Graphics and Image Processing

Chapter 8: Graphical User Interface

Chapter 9: Design with Classes

Chapter 10: Multithreading, Networks, and Client/Server Programming

Chapter 11: Searching, Sorting, and Complexity Analysis

### Grading Scale (70% required for passing)

A = 90-100%

B = 80-89.9%

C = 70-79.9%

F = Below 70%

### Grade Weighting

Chapter Quizzes..... 50%

Activities ..... 20%

Final Exam ..... 30%

100%