

IST120C : Programming Essentials in Python

Covers all the basics of programming in Python, as well as general computer programming concepts and techniques. The course also familiarizes the student with the object-oriented approach. Students have access to hands-on practice materials, quizzes, and assessments to learn how to utilize the skills and knowledge gained on the course and interact with some real-life programming tasks and situations. The aim of the course is to familiarize students with general computer programming concepts like conditional execution, loops, Python programming language syntax, semantics, and the runtime environment, as well as with general coding techniques and object-oriented programming. This course is aligned towards the PCAP industry certification and once students complete this course they will be ready to take the PCAP –Certified Associate in Python programming. The Python Institute offers students who successfully complete the PCAP | Programming Essentials in Python course a 51% discount on the list price for the PCAP | Python Certified Associate Programmer Certification exam taken at Pearson VUE Testing Centers.

Credits 3

Lab/Practicum/Clinical Hours 2

Lecture Hours 2

Learning Outcomes

- Use variables and variable naming conventions.
- Use operator, along with the rules governing the building of expressions.
- Perform loops (while and for) and how to control their behavior using the break and continue.
- Describe the difference between logical and bitwise operations.
- Create code that passes arguments in different ways and sets default values, along with the mechanisms of returning the function's results.
- Implement try-except instruction, with its applications, and the raise instruction. Demonstrate the use of strings and their specific methods, together with their similarities and differences compared to lists.
- Demonstrate the difference between OOP and the classical, procedural approach.
- Use standard objective features such as: inheritance, abstraction, encapsulation, and polymorphism, along with Python-specific issues like instance vs. class variables, and Python's implementation of inheritance.