

Python Programming Essentials

by Rice University

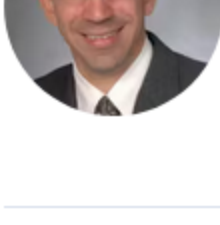
About this Course

This course will introduce you to the wonderful world of Python programming! We'll learn about the essential elements of programming and how to construct basic Python programs. We will cover expressions, variables, functions, logic, and conditionals, which are foundational concepts in computer programming. We will also teach you how to use Python modules, which enable you to benefit from the vast array of functionality that is already a part of the Python language. These concepts and skills will help you to begin to think like a computer programmer and to understand how to go about writing Python programs.

By the end of the course, you will be able to write short Python programs that are able to accomplish real, practical tasks. This course is the foundation for building expertise in Python programming. As the first course in a specialization, it provides the necessary building blocks for you to succeed at learning to write more complex Python programs.

This course uses Python 3. While many Python programs continue to use Python 2, Python 3 is the future of the Python programming language. This first course will use a Python 3 version of the CodeSkulptor development environment, which is specifically designed to help beginning programmers learn quickly. CodeSkulptor runs within any modern web browser and does not require you to install any software, allowing you to start writing and running small programs immediately. In the later courses in this specialization, we will help you to move to more sophisticated desktop development environments.

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Taught by:
[Scott Rixner](#), Professor
Computer Science



Taught by:
[Joe Warren](#), Professor
Computer Science

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| Basic Info | Course 1 of 4 in the Introduction to Scripting in Python Specialization |
| Level | Beginner |
| Commitment | This is a four week class with an expected workload of 5-7 hours per week. |
| Language | English, Subtitles: Arabic, French, Bengali, Ukrainian, Chinese (Simplified), Greek, Italian, Portuguese (Brazil), Vietnamese, Dutch, Korean, German, Pashto, Urdu, Russian, Thai, Indonesian, Swedish, Turkish, Azerbaijani, Spanish, Dari, Hindi, Japanese, Kazakh, Hungarian, Polish |
| How To Pass | Pass all graded assignments to complete the course. |
| User Ratings | Average User Rating 4.8 |

Syllabus

| Module 1 |
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| <p>Python as a Calculator</p> <p>This module will expose you to Python so that you can run your first simple programs. You will use Python to compute the results of arithmetic expressions, as you would when using a calculator.</p> <p> 9 videos, 4 readings</p> <ol style="list-style-type: none">1. Video: Welcome!2. Video: Course Overview3. Video: Hello, world!4. Video: Python Development Environments5. Reading: Using CodeSkulptor36. Video: Numbers7. Video: Simple Expressions8. Video: Compound Expressions9. Video: Variables and Assignment10. Video: Handling Errors in Python11. Reading: A Short Guide to Common Errors in Python12. Reading: Practice Exercise for Expressions13. Reading: Practice Exercises for Variables and Assignments <p>Show less</p> <p> Graded: Basic Python Syntax</p> |
| Module 2 |
| <p>Functions</p> <p>This module will teach you how to define and call functions. Functions allow you to write code once that you can execute repeatedly with different inputs.</p> <p> 6 videos, 2 readings</p> <ol style="list-style-type: none">1. Video: What is a Function?2. Video: Calling Functions3. Video: Defining Functions4. Video: Local Variables5. Reading: Functions6. Video: Understanding Function Evaluation7. Video: Using Print and Return in Functions8. Reading: Practice Exercises for Functions <p>Show less</p> <p> Graded: Functions</p> |
| Module 3 |
| <p>Logic and Conditionals</p> <p>This module will teach you how to use logic and conditionals to change the behavior of the program based upon values within the program.</p> <p> 7 videos, 3 readings</p> <ol style="list-style-type: none">1. Video: Boolean Logic2. Video: Logical Expressions3. Video: Comparisons4. Video: Conditionals5. Video: More Conditionals6. Reading: Conditionals in Python7. Video: Using Python Documentation8. Video: Following Coding Standards9. Reading: Coding Standards and Style10. Reading: Practice Exercises for Logic and Conditionals <p>Show less</p> <p> Graded: Logic and Conditionals</p> |
| Module 4 |
| <p>Python Modules</p> <p>This module will introduce you to the concept of modules. Python modules allow code to be divided up into different files and reused in different programs. Python provides many modules that you can use within your programs.</p> <p> 6 videos, 6 readings</p> <ol style="list-style-type: none">1. Video: Python Modules2. Reading: Python Modules3. Video: The Datetime Module4. Reading: Datetime Module Quick Reference5. Video: Coding the Practice Project - Part 16. Video: Coding the Practice Project - Part 27. Reading: Practice Project: Rock-Paper-Scissors-Lizard-Spock8. Video: RPSLS Video9. Reading: Tips for RPSLS10. Video: Project Video11. Reading: Project Description: Working with Dates12. Reading: OwlTest: Automated Feedback and Assessment13. App Item: Project Submission History <p>Show less</p> <p> Graded: Project: Working with Dates</p> |

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How It Works

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| <p>General</p> <p>What do start dates and end dates mean?</p> <p>Once you enroll,</p> <p>More</p> |
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Course 1 of Specialization

Launch Your Career in Python Programming

Master the core concepts of scripting in Python to enable you to solve practical problems.

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| | <p>Introduction to Scripting in Python</p> <p>Rice University</p> | Learn More |
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[View the course in catalog](#)

| Related Courses | | |
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| | <p>Python Data Representations</p> <p>Rice University</p> | |
| | <p>Python Data Analysis</p> <p>Rice University</p> | |
| | <p>Python Data Visualization</p> <p>Rice University</p> | |