

Python 1 Course Syllabus

Objectives

This course provides students with the fundamental programming skills needed to create their own Python applications. These skills are also the building blocks used across all programming languages, so the concepts students learn in this course can be applied universally. We break down the major topics into "Modules" that focus on each topic one at a time.

Module Topics

1. Programming Basics - Store and manipulate fundamental data types, generate random data, output information to program users, and build text interfaces to handle user input
2. If Conditionals - Control the decisions and actions of a program through data comparisons
3. While loops - Create programs that can perform actions indefinitely or until specific conditions are met
4. For loops - Improve program and coding efficiency by simplifying actions with repetition
5. Function Basics - Define reusable code that can be applied throughout your program or used in your own code libraries

Topics and Schedule

Module 1	Topic - Programming Basics
1-1	Print and Strings
1-2	Import and Time Library
1-2 Project	Story Telling
1-3	Integer and Float Arithmetic
1-4	Variables and Strings
1-5	Counting

Module 1	Topic - Programming Basics
1-6	Random Number Generators
1-6 Project	Lottery
1-7	Data Types and Conversions
1-8	Input
1-8 Project	Math Quiz - Basic
1-9	Turtle Library
1-9 Project	Turtle Letters

Module 2	Topic - If Conditionals
2-1	Booleans
2-2	Boolean Expressions
2-3	Logical Operators
2-4	If Statements
2-5	Else Statements
2-5 Project	Math Quiz - Automatic Grading
2-6	Elif Statements
2-6 Project	RPG - Decision Tree

Module 3	Topic - While Loops
3-1	Forever and Never Loops
3-2	While Loop Conditions
3-3	Counting with While Loops
3-4	While Loop Constructs

Module 3	Topic - While Loops
3-4 Project	Turtle Loops
3-5	Continuous Input Checking
3-5 Project	Riddle Game

Module 4	Topic - For Loops
4-1	Turtle Methods
4-2	For Loops vs. While Loops
4-3	Counting with For Loops
4-4	For Loop Constructs
4-5	Turtle Shapes
4-5 Project	Advanced Turtle Loops

Module 5	Topic - Function Basics
5-1	Defining Functions
5-2	Functions as Blueprints
5-3	Functions with Turtle
5-3 Project	Turtle Art Functions
5-4	Function Parameters
5-5	Parameters with Turtle Functions
5-6	Input Arguments
5-6 Project	Turtle Text Interface