Institute of Coding Skills Bootcamp

Python Programming

Location: Hybrid - Swansea University and online | **Professional Learner Credits:** 10 | **Cost:** Free
Contact Hours: 30 (2 hours of tutorials every fortnight + 4 hours of labs every fortnight

Synopsis:

Python has been steadily growing in popularity over the past decade as the programming language of choice for both beginning programmers and experienced software developers. This is due to its clear syntax and ease in code development and maintenance. This module teaches the fundamentals of programming in Python and is suited to those with no prior experience in programming. Learners will develop skills for writing and debugging simple programs using basic programming concepts (assignments, if statements, loops, functions) and data types (integers, floating-point numbers, strings, lists). They will also gain an understanding of algorithms and algorithm development.

Notes:

This module is aimed at professional learners who are looking to develop their computational thinking and problem-solving skills.

Assessment:

Learners will be assessed on their understanding of the content through weekly quizzes, a programming assignment (developed through the fortnightly programming labs), and a 2-hour exam at the end of the 10 weeks.

Aim:

The aim of this module is to teach learners to solve computational problems by writing simple programs in a high- level language, specifically Python. Learners will understand the fundamental principles underlying imperative programming languages, will be able to apply those principles in practice to program development, and have the ability and confidence to write programs in Python to solve a variety of simple problems.

Learning Outcomes:

Learners will be able to design, write and debug programs to solve specific problems based on procedural programming concepts.

Syllabus:

Introduction to Programming in Python; Declaring and Using Variables and Assignments; Primitive data types: integers, floating point numbers, strings, booleans; Input/Output; Conditional statements; Looping structures; Functions; Lists; Common algorithms on lists.