Institute of Coding Skills Bootcamp

Python Programming 2

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 beginner programmers and experienced software developers. This module teaches the object oriented approach that can be utilised within the Python programming language, along with methods of data manipulation and visualisation. Learners will develop skills to use classes, methods and objects within Python to solve problems. They will also learn to manipulate data and form valid conclusions from a range of data sets.

Notes:
This module is aimed at professional learners who have a basic understanding of Python, in line with our Python programming 1 Skills Bootcamps.

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 programs in a high-level language, specifically Python, utilising an object-oriented approach. Learners will understand the fundamental principles of object-oriented programming, and will be able to apply those principles utilising Python to solve a variety of problems. This module also aims to teach students how to manipulate and analyse data sets using Python to draw conclusions and produce a number of data visualisations.

Learning Outcomes:
Learners will be able to:
- Understand and explain object oriented principles, including when it is appropriate to use such an approach
- Analyse and solve problems demonstrating their ability to use the object oriented approach in Python
- Analyse data sets using Python, to draw conclusions and produce data visualisations

Syllabus:
Basic Python recap; Object oriented principles; Applying object oriented principles in Python; The purpose of data visualisation; Importing and manipulating data sets; Drawing conclusions from data; Producing data visualisations