

ANL251 Python Programming

Level: 2

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JULY

Synopsis:

ANL251 Python Programming aims to equip students with the knowledge and skills to use the Python programming language to write programs for problem solving. At the end of this course, students will be competent in using Python to perform tasks such as data acquiring, manipulation, visualisation and analysis. Since this course is designed to help students with little prior exposure to programming, it will focus on breadth rather than depth.

Topics:

- Setting Up the Python Programming Environment
- Variables and Data Types
- Operators
- Strings
- Control Flow
- Lists and Tuples
- Dictionaries
- Functions, Methods and Modules
- Reading and Writing Files
- Acquiring Data
- Plotting with Matplotlib
- Data Analysis Using NumPy and Pandas

Textbooks:

Zed A. Shaw: Learn Python 3 the Hard Way 1 Pearson
ISBN-13: 9780134692883-AA

Zed A. Shaw: Learn Python 3 the Hard Way 1 Pearson
ISBN-13: 9780134692883

Learning Outcome:

- Describe and compare the basic data types, operators, strings, lists, tuples and dictionaries in Python.
- Analyse control flows in Python programs.
- Explain and compare the built-in functions and the standard libraries in Python.
- Apply fundamental programming concepts, Python built-in functions and standard libraries to write programs for problem solving.
- Manipulate and analyse datasets using NumPy and Pandas.
- Visualise results using Matplotlib.

Assessment Strategies:

Continuous Assessment Component	Weightage (%)
PRE-COURSE QUIZ	2
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
PARTICIPATION	6
GROUP BASED ASSIGNMENT	19
TUTOR-MARKED ASSIGNMENT	19
Sub-Total	50

Examinable Component	Weightage (%)
ECA-REPORT	40
ECA-POWERPOINT	10
Sub-Total	50

Weightage Total **100**