MODULE DESCRIPTOR

Module Title

Programming Concepts for Business Analytics

Reference	CMM201	Version	3
Created	June 2022	SCQF Level	SCQF 11
Approved	July 2018	SCQF Points	15
Amended	July 2022	ECTS Points	7.5

Aims of Module

This module will introduce students to fundamental programming principles and concepts within the context of creating solutions for business analytics.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Critically appraise the use of Python, Jupyter, and appropriate packages in the context of data analytics.
2	Demonstrate a critical understand of core programming techniques and concepts.
3	Use existing libraries and coding techniques to perform data management, data analysis and data visualization tasks.
4	Apply programming skills to business decision making problems.

Indicative Module Content

1. An overview of programming languages and tools typically used for developing Data Analytics and Visualisation solutions. 2. Introduction to Programming Logic and Design: The programming environment; object-oriented programming concepts; Variables and Simple Data Types; control structures (if, while); working with lists; working with strings; decision structures; dictionaries; input and output; functions; classes; files; interpreting errors and exceptions; testing and simple debugging of code 3. Reusing existing functionality: libraries and APIs: developing and/ or extending existing solutions within a business analytics context. 4. Tools and techniques for sharing software solutions.

Module Delivery

Concepts and examples will be introduced in lectures. Practical skills will be developed through structured lab exercises and coursework exercises.

Indicative Student Workload	Full Time	Part Time
Contact Hours	36	36
Non-Contact Hours	114	114
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
Actual Placement hours for professional, statutory or regulatory body		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4

Description: A coursework demonstrating the ability to use Python to solve simple coding tasks, and to use Jupyter notebooks and third party-packages to solve data analytics problems.

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

Component 1 (coursework) comprises 100% of the module grade. To pass the module, a D grade is required.

Module Grade	Minimum Requirements to achieve Module Grade:
A	A in Component 1
B	B in Component 1
C	C in Component 1
D	D in Component 1
E	E in Component 1
F	F in Component 1
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1 McKinney, W. (2013). *Python for Data Analysis.* (2th Ed.): O'Reilly

2 HARRISON M., PETROU T. (2020) Pandas 1.x Cookbook: Practical recipes for scientific computing, time series analysis, and exploratory data analysis using Python, (2nd Edition)

3 LUTZ, M. (2013). *Learning Python.* (5th Ed.): O'Reilly

4 PADMANBHAN T.R. (2016)*Programming with Python.* ELECTRONIC BOOK

5 HETLAND, M.L.,(2017) *Beginning Python : From Novice To Professional.* 3rd Ed, ELECTRONIC BOOK

6 PARKER J.(2017. *Python : An Introduction To Programming* ELECTRONIC BOOK

7 *Python Language Specification*: https://www.python.org/