Module Descriptor

Title	Python for Accounting		
Session	2025/26	**Status**	Existing
Code	ACCT10019	**SCQF Level**	10
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**School of Business and Creative Industries**		
Module Co-ordinator	Dr Michael Guo		

Summary of Module

This module is designed for accounting students with no prior knowledge of Python. It aims to introduce students to Python's application within the accounting field. The module covers several key areas:

- Python Basics: Teaching the fundamental concepts of Python programming.
- Data Analysis and Visualisation: Teaching how to analyse and visualise accounting data using Python.
- Automation: Demonstrating how to automate repetitive accounting tasks with Python scripts.
- Introduction to Machine Learning: Providing an understanding of how machine learning can be applied in accounting.

The module employs a hybrid learning approach, combining face-to-face lab sessions, online clinics, and additional resources such as pre- and post-lecture podcasts. This method is designed to accommodate students from diverse backgrounds, including those with no prior coding experience.

For assessment, the module uses a digital portfolio approach, which includes video submissions of the coding process accompanied by personal commentary and reflection, as well as online Google Colab notebooks presenting the codes. Mandatory video topics cover the Python Basics, ensuring a foundational understanding for all students. Beyond the compulsory topics, students are encouraged to select from Data Analysis and Visualization, Automation, or Introduction to Machine Learning for their subsequent submissions. This choice is based on their individual comprehension and areas of strength within these topics, allowing them to showcase their proficiency in areas where they feel most confident.

The digital portfolio serves as a tangible showcase of students' skills and understanding, providing an asset for job hunting. It offers potential employers evidence of the student's coding abilities, problem-solving skills, and capacity for reflective learning.

Module Delivery Method	On-Campus[1] ☒	Hybrid[2] ☐	Online[3] ☐	Work -Based Learning[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☒ Lanarkshire ☐ London ☒ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Master the fundamental concepts of Python programming
L2	Employ Python to conduct data analysis and visualisation for accounting purposes
L3	Use Python scripts to automate routine accounting tasks
L4	Acquire an understanding of how machine learning can be integrated into accounting practices using Python

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	Students will develop a deep understanding of Python programming fundamentals, data analysis, automation, and machine learning within an accounting context. They will learn to: • Apply Python basics to solve accounting-related problems, enhancing their technical toolkit. • Use data analysis and visualisation techniques in Python to interpret and present accounting data effectively. • Implement automation to optimise accounting tasks, increasing efficiency and accuracy. • Explore the potential of machine learning in transforming accounting practices and decision-making processes.

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

Practice: Applied Knowledge and Understanding	Through practical exercises, students will apply their knowledge by: • Designing and executing Python scripts to analyse accounting datasets. • Developing automation solutions to common accounting tasks. • Experimenting with basic machine learning models to predict financial outcomes or identify trends in accounting data.
Generic Cognitive skills	Students will enhance their cognitive abilities by: • Analysing accounting problems and devising Python-based solutions. • Evaluating the results of data analyses and the implications of machine learning models in accounting.
Communication, ICT and Numeracy Skills	The module will strengthen students' competencies in key areas: • Communicating technical information clearly and effectively through digital portfolios, including video presentations and Google Colab notebooks. • Using Python for coding, data analysis, and visual representation of financial information. • Applying numeracy skills in the context of data analysis.
Autonomy, Accountability and Working with Others	Students will be encouraged to work independently and collaboratively: • Demonstrating autonomy in learning by managing their projects, seeking resources, and solving problems independently. • Being accountable for their work, including adhering to ethical guidelines in data handling and presenting honest analyses. • Collaborating with peers during lab sessions, fostering a cooperative learning environment and enhancing team-working skills.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)

Lab sessions	30
Online clinics	6
Independent Study	164
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Recommended Text Core Text: Sweigart, A. (2019). Automate the boring stuff with Python: practical programming for total beginners. No Starch Press. Vast Online Supporting Materials on Python: Resources available from FreeCodeCamp, Harvard's CS50, and other reputable sources provide extensive learning materials and tutorials.
(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** Attending timetabled teaching sessions and accessing course-related learning resources via VLE. For the purposes of this module, students should also reference the 'BCI Guidance on Implementation of the Revised Student Attendance and Engagement Procedure' which details the School attendance and engagement requirements and how this will be monitored for attendance.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. In line with current legislation (Equality Act, 2010) and the UWS Equality, Diversity, and Human Rights Code, our modules are accessible and inclusive, with reasonable adjustment for different needs where appropriate. Module materials comply with University guidance on inclusive learning and teaching, and specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations. Where modules require practical and/or laboratory based learning or assessment required to meet accrediting body requirements the University will make

reasonable adjustment such as adjustable height benches or assistance of a 'buddy' or helper.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Accounting, Finance and Law
Moderator	Chaman Shrestha
External Examiner	Kasun Dissanayake
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Digital Portfolio (100%): Online Video Submission and Google Colab notebooks The module uses a digital portfolio approach, which includes video submissions of the coding process accompanied by personal commentary and reflection, as well as online Google Colab notebooks presenting the codes. Mandatory video topics cover the Python Basics, ensuring a foundational understanding for all students. Beyond the compulsory topics, students are encouraged to select from Data Analysis and Visualization, Automation, or Introduction to Machine Learning for their subsequent submissions. This choice is based on their individual comprehension and areas of strength within these topics, allowing them to showcase their proficiency in areas where they feel most confident.
Assessment 2
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
Digital Portfolio	☒	☒	☒	☒	☐	100	n/a

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	hours

Change Control

What	When	Who