University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Introduction to Programming			
Code: COMP07027	**SCQF Level: 7** (Scottish Credit and Qualifications Framework)	**Credit Points: 20**	**ECTS: 10** (European Credit Transfer Scheme)
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Gerry Creechan		

Summary of Module

Introduction to Programming serves as an entry level programming module, and aims to introduce the skills required to write simple structured programs in a high-level language and assess these skills in practical situations. Future modules in the technical computing programmes assume knowledge of basic programming principles and an ability to create simple structured programs.

The core principles considered key in this module are those which underpin a practical ability to write code: data and data structures, structured code, subroutines, parameters, loops, input/output and files. The emphasis however, is on the creation of simple programs based on common patterns found in software – data items, collections of items, iteration over collections and persistence.

An introduction to encapsulation and object-based programming is also covered.

Different deliveries of the module, to students on different degree programmes, use different programming languages, as is appropriate for the degree in question, and different delivery modes including, for the majority of full-time undergraduate students, a long thin delivery over two trimesters.

This module embeds the key "I am UWS" graduate attributes, particularly the following: Critical Thinker, Analytical, Problem-solver, Motivated, Creative/imaginative, Collaborative and Driven.

Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
✓	✓	✓			

If this module is delivered within the BSc (Hons) IT Software Development Programme the 'Blended' module delivery method applies.

Face-To-Face
Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

Blended
A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

Fully Online
Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

HybridC
Online with mandatory face-to-face learning on Campus

HybridO
Online with optional face-to-face learning on Campus

Work-based Learning
Learning activities where the main location for the learning experience is in the workplace.

Campus(es) for Module Delivery						
The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
✓		✓	✓		✓	✓

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	✓	Term 2	✓	Term 3	

Learning Outcomes: (maximum of 5 statements)

On successful completion of this module the student will be able to:

L1. write small structured programs in a high level programming language

L2. demonstrate use of standard programming constructs for iteration, selection and data structures such as arrays

L3. create a simple console-based user-interface for a program and use this to create interactive software

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)	SCQF Level 7. A broad knowledge of the following programming concepts and principles: Code and data in programs, simple data types and operators, simple expressions and statements, derived data types and collections, structured code, loops, iterating over a collection, functions and parameters, user-interactions, types of error, error handling, files and streams

Practice: Applied Knowledge and Understanding	SCQF Level 7. Use the following basic computing skills, practices, techniques and materials: Selecting an appropriate data type, developing simple algorithms using expressions and statements, use of selection and repetition constructs, defining more complex data types involving records and arrays, managing a collection, iterating through a collection, creating functions, calling functions, passing parameters into and out of functions, creating a simple user-interface, interactivity in code, persisting data in files. Algorithm design, writing and correcting code, using development tools to build programs, finding errors in programs.
Generic Cognitive skills	SCQF Level 7. Use structured programming as an approach to solving routine programming problems.
Communication, ICT and Numeracy Skills	SCQF Level 7. Use an integrated development environment in developing a software application.
Autonomy, Accountability and Working with others	SCQF Level 7. Employ the principles of pair programming to develop a simple computer application with a partner.

Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	**Module Title:**
	Other:	
Co-requisites	**Module Code:**	**Module Title:**

* Indicates that module descriptor is not published.

Learning and Teaching	
Lectures will be used for exposition of topics, provide context and suggest appropriate background material. Lab sessions, using pair programming, will provide practical experience in developing small software systems.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	20
Laboratory/Practical Demonstration/Workshop	30
Tutorial/Synchronous Support Activity	10
Asynchronous Class Activity	40
Independent Study	100
	200 Hours Total

****Indicative Resources: (eg. Core text, journals, internet access)**

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

McMonnies, A. (2016) Introduction to Programming Module Notes (Python)

Recommended reading:

Mike Dawson (2010) Python Programming for the Absolute Beginner. 3rd Edition. Course Technology PTR

Shaw, Z.A. (2013) Learn Python the Hard Way: A Very Simple Introduction to the Terrifyingly Beautiful World of Computers and Code (Zed Shaw's Hard Way). 3rd Edition. Addison-Wesley

(**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)

Engagement Requirements

In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: Academic engagement procedure

Supplemental Information

Programme Board	Computing
Assessment Results (Pass/Fail)	No
Subject Panel	Business & Applied Computing

Moderator	Frances McCormick
External Examiner	A Jindal
Accreditation Details	This module is accredited by BCS as part of a number of specified programmes. It is also accredited by Skillset as part of BSc (Hons) Computer Games Technology
Version Number	2.09

Assessment: (also refer to Assessment Outcomes Grids below)

his module has a single category of assessment which comprises the following elements:

Laboratory work, some of which is submitted for formative feedback. Class tests (some purely formative) 20%. 1 major project involving creation of a console-based application program which manages a collection of data records – 80%.

(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 Handbook.)

Assessment Outcome Grids (Footnote A.)

Component 1

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (written)	✓	✓	✓	20	0
Creative output/ Audiotapes/ Videotapes/ Games/ Simulations	✓		✓	80	0
Combined Total For All Components				100%	0 hours

Footnotes
A. Referred to within Assessment Section above
B. Identified in the Learning Outcome Section above

Note(s):
1. More than one assessment method can be used to assess individual learning outcomes.
2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note).
   This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

Equality and Diversity

This module is suitable for any student. The assessment regime will be applied flexibly so that a student who can attain the practical outcomes of the module will not be disadvantaged. When a student discloses a disability, or if a tutor is concerned about a student, the tutor in consultation with the School Enabling Support co-ordinator will agree the appropriate adjustments to be made.
UWS Equality and Diversity Policy

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)