University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Object Orientated Programming

Code: COMP11124	**SCQF Level: 11** (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:	Graeme A. McRobbie		

Summary of Module

Object oriented programming is an industry standard programming technique and is a vital skill for employability. This module builds programming skills, focussing on the concept of object orientation.

To develop object-oriented programming skills, the module also covers the fundamental differences between object orientation and procedural programming, and how the design process differs between the two programming paradigms.

This module helps students understand and apply the techniques and tools for designing implementing, testing, and debugging object-oriented programs in applicable languages such as C# and Java

In this module, students will learn how to apply the principles and concepts of object-oriented programming to a given problem, gaining individual confidence in developing computer programs, students will be able to identify and utilise available resources to implement a solution using object-oriented programming in an applicable programming language, and students will gain an understanding of sustainable coding practices.

This module will work to develop a number of the key 'I am UWS' Graduate Attributes to make those who complete this module.
Universal: critical thinker; ethically-minded; and research-minded
Work Ready: problem-solver; effective communicator; and ambitious
Successful: autonomous; resilient; and driven

Module Delivery Method

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

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. Appraise and critically evaluate object-oriented programming compared to other programming paradigms

L2. Design and implement programs that demonstrate appropriate use of object-oriented design principles

L3. Select and use appropriate data structures for a given problem

L4. Propose object-oriented solutions using an appropriate modelling language (such as UML)

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 11. Knowledge and understanding of the scope and defining features of object-orientated programming, and an integrated knowledge of its main areas and boundaries. A critical understanding of the principles, principal theories, concepts and terminology associated with object-orientated programming.
Practice: Applied Knowledge and Understanding	SCQF Level 11. Use the principle skills, techniques and practices related to object-orientated programming. Practise routine methods of enquiry to practise in a range of contexts that include a degree of unpredictability.

Generic Cognitive skills	SCQF Level 11. Undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues in object-orientated programming. Identify and analyse routine professional problems and issues. Draw on a range of sources in making judgements
Communication, ICT and Numeracy Skills	SCQF Level 11. Use a wide range of skills in support of established practices. Present or convey, formally and informally, information about topics to informed audiences; Interpret, use and evaluate data
Autonomy, Accountability and Working with others	SCQF Level 11. Exercise autonomy and initiative in activities. Manage complex ethical and professional issues in accordance with ethical codes or practices

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	
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	12
Laboratory/Practical Demonstration/Workshop	36
Independent Study	152
	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:

Head First Design Patterns
Eric Freeman, Elisabeth Robson, Bert Bates & Kathy Sierra*

Head First Object-Oriented Analysis and Design: A Brain Friendly Guide to OOA&D
Brett McLaughlin, Gary Pollice & David West*

Object-Oriented Thought Process
Matt Weisfeld*

Elegant Objects
Yegor Bugayenko*

Clean Code: A Handbook of Agile Software Craftsmanship
Robert C. Martin*

(**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 and Applied Computing
Moderator	tbc
External Examiner	tbc
Accreditation Details	peniding
Changes/Version Number	1

Assessment: (also refer to Assessment Outcomes Grids below)
A class test (practical) under strict examination conditions. The class test (practical) is intended to assess the student's understanding of the principles underpinning the technologies and frameworks studied in the module. The class test (practical) is worth 50% of the overall mark.
A portfolio of practical work demonstrating the practical application of web development technologies and frameworks in producing a web-based solution to a problem. The portfolio of practical work is worth 50% of the overall mark
(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)	Learning Outcome (4)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (practical)	✓				50	3

Component 2

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Portfolio of practical work		✓	✓	✓	50	0
Combined Total For All Components					100%	3 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

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)