

MODULE DESCRIPTOR

Module Title

Software Design and Development

Reference	CM1015	Version	4
Created	September 2017	SCQF Level	SCQF 7
Approved	July 2007	SCQF Points	30
Amended	September 2017	ECTS Points	15

Aims of Module

To provide the student with an introduction to the skills needed to design, develop and evaluate solutions to simple programming problems and to develop the student's proficiency in implementing and testing programs in a modern object oriented programming environment.

Learning Outcomes for Module

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

- 1 Use systematic and structured approaches to design, develop and implement algorithms.
- 2 Recognise and discuss key concepts in object oriented programming.
- 3 Analyse simple requirements in order to identify the basis for an object oriented design.
- 4 Select and apply effective strategies for testing programs.
- 5 Write documentation to describe the design, testing and use of software.

Indicative Module Content

The module provides an introduction to the design and implementation of object oriented programs. Design techniques will follow structured programming principles using stepwise refinement to develop more complex algorithmic solutions. Implementation of designs will be in an appropriate development environment. Language syntax will cover fundamental data types, declarations and expressions, object concepts such as classes and instances (including visibility rules for instance and class members), methods, parameter passing mechanisms and arrays. Class construction from existing classes by composition and association will also be discussed. Indicative languages for programs are Java and Javascript. The module content will also emphasise appropriate coding style, testing techniques and strategies, and documentation standards.

Module Delivery

This module is lab-based and is delivered throughout the teaching session.

Indicative Student Workload	Full Time	Part Time
Contact Hours	120	N/A
Non-Contact Hours	180	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	N/A
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:	Practical Exam	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4, 5
Description:	A series of practical exams.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The calculation of the overall grade for this module is based on 100% weighting of Component 1. An overall minimum grade D is required to pass the module.

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

Module Requirements

Prerequisites for Module	None, in addition to course entry requirements.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1	HAVERBEKE, MARIJN 2014 "Eloquent JavaScript: A Modern Introduction to Programming" No Starch Press, 2nd edition, 978-1-593-27584-6
2	DIONISIO, JOHN DAVID and TOAL, RAY 2011 "Programming With Javascript: Algorithms And Applications For Desktop And Mobile Browsers" Jones and Bartlett Learning, 978-0-763-78060-9
3	LIANG, Y. DANIEL 2013 "Introduction to Java Programming" Pearson, 978-0-273-77138-8
4	HORSTMANN, CAY (2013) "Big Java: Late Objects" Wiley, 978-1-118-08788-6