Module Title **Software Design And Development** **Keywords** Object Oriented Programming, Algorithm Design, Stepwise Refinement, Testing Strategies, Documentation, Object Oriented Design.	Reference CM1015 SCQF Level SCQF 7 SCQF Points 30 ECTS Points 15 Created March 2007 Approved July 2007 Amended Version No. 1

This Version is No Longer Current

The latest version of this module is available here

Prerequisites for Module

None, in addition to course entry requirements.

Corequisite Modules

None.

Precluded Modules

None.

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

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 Visual Basic, Java and Alice.

The module content will also emphasise appropriate coding style, testing techniques and strategies, and documentation standards.

Indicative Student Workload

Contact Hours	Full Time
Lecture/Lab/Tutorial	120

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 an 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

Assessment	10
Directed Study	
Directed Study	30
Private Study	
Private Study	140

Mode of Delivery

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

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,2,3,4,5

Component 1 - Coursework

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

be in an appropriate development environment.

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