

## MODULE DESCRIPTOR

### Module Title

Software Architecture And Software Engineering

Reference	CM2027	Version	3
Created	October 2017	SCQF Level	SCQF 8
Approved	July 2014	SCQF Points	15
Amended	October 2017	ECTS Points	7.5

### Aims of Module

To provide a broad range of knowledge and skills in software engineering.

### Learning Outcomes for Module

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

- 1 Identify selected classes of software system.
- 2 Create appropriate models for the structure and behaviour of software products from their requirements specifications.
- 3 Implement simple examples of selected software system classes.
- 4 Describe and distinguish between the different types and levels of testing.

### Indicative Module Content

A brief review of software lifecycles, contrasting the activities performed in each phase. An introduction to selected software tools used in software engineering as well as the use of project plans and an overview of agile software development. Classes of software system might include: embedded systems, information systems, control systems, intelligent systems. This module will describe selected types of system architecture including MVC, structural, behavioural, and creational design patterns.

### Module Delivery

Key concepts are introduced and illustrated through the medium of lectures. Lab exercises will be used to explore simple architectural styles (such as pipe and filter, user interface call-back and layered objects).

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	46	N/A
Non-Contact Hours	104	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	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:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4
Description:	A piece of coursework.				

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

The calculation of the overall grade for this module is based on 100% weighting for C1. An overall minimum grade D is required to pass the module.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	An A in C1
<b>B</b>	A B in C1
<b>C</b>	A C in C1
<b>D</b>	A D in C1
<b>E</b>	An E in C1
<b>F</b>	An F in C1
<b>NS</b>	Non-submission of work by published deadline or non-attendance for examination

**Module Requirements**

Prerequisites for Module	Successful completion of CM1014 Problem Solving and Modelling in Computing.
Corequisites for module	None.
Precluded Modules	None.

**INDICATIVE BIBLIOGRAPHY**

- 1 SOMMERVILLE, I., 2015. Software Engineering. 10th edition. Pearson
- 2 PRESSMAN, R.S., 2014. Software Engineering: A Practitioner's Approach. 8th edition. McGraw-Hill Higher Education.
- 3 BASS, L., CLEMENTS, P. and KAZMAN, R., 2012. Software Architecture in Practice. Addison Wesley.
- 4 FREEMAN, E., and FREEMAN, E., 2004. Head First Design Patterns, O'Reilly
- 5 KAK, A. C. 2014. Designing with Objects: Object-Oriented Design Patterns Explained with Stories from Harry Potter. John Wiley & Sons.