Anglia Ruskin University

Module Definition Form (MDF)

Module code: MOD005430	**Version:** 1 **Date Amended:** 04/May/2016

1. Module Title

Design Patterns for Software Engineering

2a. Module Leader

Hugh Chadwick

2b. Department

Department of Computing and Technology

2c. Faculty

Faculty of Science and Technology

3a. Level

5

3b. Module Type

Standard (fine graded)

4a. Credits

15

4b. Study Hours

150

5. Restrictions			
Type	**Module Code**	**Module Name**	**Condition**
Pre-requisites:	None		
Co-requisite:	MOD005437	Object-Oriented Programming Development	Compulsory
Exclusions:	None		
Courses to which this module is restricted:			

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

Design patterns are commonly defined as time-tested solutions to recurring design problems. The term refers to both the description of a solution that you can read, and an instance of that solution as used to solve a particular problem.

Students will be introduced to not only what design patterns are but how and why their use facilitates creation of robust code.

The knowledge of modern design patterns has become a key requirement for the employment of software engineering graduates, therefore real-world scenarios will be utilised throughout the module ensuring currency of knowledge.

This module provides students with a broad range of accepted design solutions for everyday software problems. Students will select and implement the appropriate design patterns for given scenarios. Key design patterns will be appraised such as Singleton, Factory, Observer and Decorator.

Implementation will be via an appropriate object-oriented programming language such as C#.

Assessment is through in-class tasks and a final report which might analyse a body of code, identifying the patterns in use and explaining the value of each one.

Delivery will be supported using the Virtual Learning Environment and students will be expected to undertake interactive online activities on a weekly basis to support understanding and to share knowledge.

6b. Outline Content

What is a design pattern?

Why use design patterns?

History of design patterns

Implementation of selected design patterns for given scenario

Identification of uses of design patterns within given scenarios

Implementing SOLID using design patterns

6c. Key Texts/Literature

The reading list to support this module is available at: http://readinglists.anglia.ac.uk/modules/mod005430

6d. Specialist Learning Resources
Computer suite with Visual Studio IDE

7. Learning Outcomes (threshold standards)		
No.	**Type**	**On successful completion of this module the student will be expected to be able to:**
1	Knowledge and Understanding	Select and apply design patterns to solve given scenarios
2	Knowledge and Understanding	Identify common design patterns and their uses
3	Intellectual, practical, affective and transferrable skills	Develop design patterns for given scenarios in appropriate OO language
4	Intellectual, practical, affective and transferrable skills	Implement SOLID techniques using design patterns

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2017/8	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	12	1,2,3,4	Lecture 1 hr x 12 weeks
Other teacher managed learning	24	1,2,3,4	Seminar 2 hr x 12 weeks
Student managed learning	114	1,2,3,4	reading, research, skills practice, assignment
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Practical	1,2	30 (%)	Fine Grade	30 (%)
Class based activities (1,000 words equivalent)					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
011	Coursework	3,4	70 (%)	Fine Grade	30 (%)
Report 2,000 words					

In order to pass this module, students are required to achieve an overall mark of 40%.
In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment of as specified above
(b) pass any pass/fail elements