Liverpool John Moores University

Title:	Advanced Programming
Status:	Definitive
Code:	**6010ELE** (120121)
Version Start Date:	01-08-2018
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	Maritime and Mechanical Engineering

Team	Leader
Brahim Benbakhti	Y

Academic Level:	FHEQ6	**Credit Value:**	20	**Total Delivered Hours:**	74
Total Learning Hours:	200	**Private Study:**	126		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	48
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	60	2
Report	AS1	Report	40	

Aims

To develop the approach and skills necessary to design and implement a software solution using an object oriented approach

Learning Outcomes

After completing the module the student should be able to:

1 Use high level language constructs
2 Change a programming specification to working program
3 Produce a high level design using an object oriented approach
4 Use physical and mathematical concepts to design an Engineering application

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Examination	1	2	3
Report	4		

Outline Syllabus

Review of high level language program constructs:
Conditional Logic, Loops
Arrays, String handling, Manipulating files
Method, Structures, Generics, Sorting,
Bit handling, Exception handling, Debugging

-Object Oriented Programming:
Classes and Objects
Encapsulation, Operators, Inheritance, Polymorphism
Accessors, Method Hiding, Interfaces, Abstracts
Partial classes, Delegates, Attributes, Reflections

-Windows and Web Applications:
Operating systems interfacing, Building Windows applications, Handling Databases
Controlling external devices, Events programming
Programming web applications, Programming web services
Assemblies, versioning, Marshaling, Remoting, Streams

-Security, Late binding, threading, Synchronisation, unsafe code

Learning Activities

By a combination of lectures, tutorials and laboratories.

Notes

This module is intended to improve the student's software design, programming and implementation skills.