

## Liverpool John Moores University

Title: OBJECT ORIENTED SOFTWARE DEVELOPMENT  
Status: Definitive  
Code: **5004HCOM** (118826)  
Version Start Date: 01-08-2011

Owning School/Faculty: Computing and Mathematical Sciences  
Teaching School/Faculty: HELP College

Team	Leader
Glyn Hughes	Y

**Academic Level:** FHEQ5  
**Credit Value:** 24.00  
**Total Delivered Hours:** 72.00  
**Total Learning Hours:** 240  
**Private Study:** 168

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24.000
Practical	24.000
Tutorial	24.000

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Technology	AS2	Group Data Driven Object Oriented application implementation.	50.0	
Report	AS1	Individual Object Oriented Design exercise and report using UML.	50.0	

### Aims

*To enable students to gain familiarity with a modern API (Application Programming Interface). Students will learn the principles of OO (Object Orientation) through the UML (Unified Modelling Language), how to design OO applications with a modern IDE (Integrated Development Environment), create data driven applications that*

connect to a DBMS (Database Management System) to utilize OO data modelling.

## Learning Outcomes

After completing the module the student should be able to:

- 1 Describe the key features and purpose of a modern API.
- 2 Explain and apply the concepts of OOD (Object Oriented Design).
- 3 Specify and design OO applications using the UML.
- 4 Develop OO program code using visual designers and programming language features.
- 5 Create, deploy and test data driven applications.

## Learning Outcomes of Assessments

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

Application implementation	1	4	5
Exercise and report	2	3	

## Outline Syllabus

*Introduction to Object Oriented principles and concepts.*  
*Intro to the UML and the OOAD (Object Oriented Analysis & Design) process.*  
*Use Case, Class, State, Activity, Communication & Sequence UML diagrams.*  
*Intro to .NET components and the component based development model.*  
*C#.NET Fundamentals.*  
*Understanding Classes in C# .NET.*  
*Working with Data Types, Structures and Conversion/Casting.*  
*Intro to ADO.NET database access model.*  
*Data manipulation with ADO.NET.*  
*Data presentation and manipulation with LINQ.*

## Learning Activities

Learning activities will be through lectures and tutorials where students will be encouraged to ask questions and discuss case studies and supported labs where students will be encouraged to put theory gained in lectures and tutorials into practice.

## References

<b>Course Material</b>	Book
<b>Author</b>	Miles, R.

<b>Publishing Year</b>	2006
<b>Title</b>	Learning UML 2.0
<b>Subtitle</b>	
<b>Edition</b>	1st Edition
<b>Publisher</b>	Pragma
<b>ISBN</b>	0596009828

<b>Course Material</b>	Book
<b>Author</b>	Priestley, M.
<b>Publishing Year</b>	2003
<b>Title</b>	Practical Object Oriented Design with UML
<b>Subtitle</b>	
<b>Edition</b>	2nd Edition
<b>Publisher</b>	McGraw-Hill
<b>ISBN</b>	0077103939

<b>Course Material</b>	Book
<b>Author</b>	Mackey, A.
<b>Publishing Year</b>	2010
<b>Title</b>	Introducing .NET 4.0
<b>Subtitle</b>	With Visual Studio 2010
<b>Edition</b>	5th Edition
<b>Publisher</b>	APRESS
<b>ISBN</b>	143022455X

<b>Course Material</b>	Book
<b>Author</b>	Albahari, J.
<b>Publishing Year</b>	2010
<b>Title</b>	C# 4.0 in a Nutshell
<b>Subtitle</b>	The Definitive Reference
<b>Edition</b>	4th Edition
<b>Publisher</b>	Pragma
<b>ISBN</b>	0596800959

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## Notes

This module is designed as an introduction to OOP (Object Oriented Programming). In so doing, students will learn about the core principles of object orientation, data structures and modelling and data driven application development.