Liverpool John Moores University

Title:	SOFTWARE DEVELOPMENT JAVA
Status:	Definitive
Code:	**7031COMP** (103290)
Version Start Date:	01-08-2011
Owning School/Faculty:	Computing and Mathematical Sciences
Teaching School/Faculty:	Computing and Mathematical Sciences

Team	Leader
Denis Reilly	Y

Academic Level:	FHEQ7	**Credit Value:**	15.00	**Total Delivered Hours:**	30.00
Total Learning Hours:	150	**Private Study:**	120		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	12.000
Practical	12.000
Tutorial	6.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Technology	AS1	Individual Coursework – Object-oriented Analysis, Design and Implementation.	50.0	
Technology	AS2	Group Coursework – Team-based Software Development.	50.0	

Aims

The course will develop the necessary skills for the development of object-oriented applications using the Java programming language. Students will work cooperatively in groups and demonstrate the skills required to engineer Java-based software applications from initial specification, through to implementation, testing and documentation.

Learning Outcomes

After completing the module the student should be able to:

1 Explain the use of object-oriented principles in the design of software applications.
2 Use object-oriented principles to specify and design software applications
3 Implement object-oriented designs using the Java programming language.
4 Test and document Java-based applications
5 Work in small teams to distribute and manage the tasks required of points 2, 3 and 4.

Learning Outcomes of Assessments

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

Object-oriented analysis	1	2	3	
Software development	2	3	4	5

Outline Syllabus

Foundations of object-orientation.
Anatomy of Java classes – fields, constructors, methods.
Objects and classes – what is an object, object state, objects as parameters.
Object interaction – method invocation, objects calling objects.
Designing classes – responsibility-driven design.
Application structures – inheritance, subtyping, polymorphism.
Abstraction techniques – simulation, abstract classes, interfaces.
Handling errors – defensive programming, exceptions.
Designing applications – analysis and design, CRC cards, scenarios, class design, documentation, group cooperation.
Case Study – design of a chosen application.
Java-based user-interfaces – AWT and Swing APIs

Learning Activities

Lectures will be accompanied by practical lab-sessions. Students will be required to work in small groups to complete tasks, thereby encouraging communication and projects management skills.

References

Course Material	Book

Author	Barnes, D.J., Kolling, M.
Publishing Year	2008
Title	Objects First with Java: A Practical Introduction Using
Subtitle	
Edition	4th
Publisher	Prentice-Hall
ISBN	978-0-136060864

Course Material	Book
Author	Eckel, B.
Publishing Year	2006
Title	Thinking in Java
Subtitle	
Edition	4th
Publisher	Prentice-Hall
ISBN	9780131872486

Course Material	Book
Author	Arnold, K., Gosling, J.
Publishing Year	2005
Title	The Java Programming Language
Subtitle	
Edition	4th
Publisher	The Java Series
ISBN	0321349806

Course Material	Website
Author	Sun Microsystem's Java Tutorial
Publishing Year	
Title	http://java.sun.com/docs/books/tutorial
Subtitle	
Edition	
Publisher	
ISBN	

Notes

The module lectures, tutorials and labs will use the BLUEJ development tool, which is a GUI-based development aid loosely based on UML. The group coursework will be completed in groups of two students and peer assessment will be used to assess individual student effort.