

Summary Information

Module Code	7501COMP
Formal Module Title	Software Development with Java
Owning School	Computer Science and Mathematics
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Bo Zhou	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Denis Reilly	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Unicaf

Learning Methods

Learning Method Type	Hours
Online	33

Module Offering(s)

Offering Code	Location	Start Month	Duration
SEP-PAR	PAR	September	12 Weeks

Aims and Outcomes

Aims	The course will develop the necessary skills for the development of object-oriented applications using the Java programming language. Students will learn from formative assessments and demonstrate the skills required to engineer Java-based software applications from initial specification, through to implementation, testing and documentation.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Explain the use of object-oriented principles in the design of software applications.
MLO2	Use advanced object-oriented principles to specify and design software applications.
MLO3	Implement object-oriented designs using the Java programming language.
MLO4	Test and document Java-based applications.
MLO5	Critically evaluate the use of object-oriented development techniques.

Module Content

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, class design, documentation, group cooperation.

Case Study design of a chosen application.

Java-based user-interfaces AWT and Swing APIs

Module Overview

Additional Information

The module lectures, tutorials and labs will use the BLUEJ development tool, which is a GUI-based development aid loosely based on UML.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Technology	Coursework 1	50	0	MLO1, MLO2
Technology	Coursework 2	50	0	MLO4, MLO5, MLO3