London South Bank University

Module Guide

Object-Oriented Programming

CSI-5-OOP

https://my.lsbu.ac.uk

School of Engineering

Level 5

Table of Contents

1. MODULE DETAILS

Module Title:	Object-Oriented Programming
Module Level:	5
Module Reference Number:	CSI-5-OOP
Credit Value:	20
Student Study Hours:	200
Contact Hours:	65
Private Study Hours:	135
Pre-requisite Learning (If applicable):	Software Development 2: Data structures and algorithms.
Co-requisite Modules (If applicable):	none
Course(s):	BSc (Hons) Computer Science
Year and Semester	Year 2 Semester 1
Module Coordinator:	Mike Child
MC Contact Details (Tel, Email, Room)	020-7815-7483, childm@lsbu.ac.uk, FW112
Teaching Team & Contact Details (If applicable):	
Subject Area:	Software Development
Summary of Assessment Method:	Coursework
External Examiner appointed for module:	TBC

2. SHORT DESCRIPTION

This module introduces the more sophisticated programming constructs associated with object-oriented programming, the dominant programming paradigm in current use. It also introduces event driven programming and how it relates to the development of graphical user interfaces. This module explores practical application development using graphical user interfaces and will cover the use of classes and objects of a kind found in many real world applications. The use of professional development tools gives a rounded picture of the development process.

3. AIMS OF THE MODULE

To provide an understanding of object-oriented programming and the basics of graphical user interface development.

4. LEARNING OUTCOMES

4.1 Knowledge and Understanding

On completion of the module you will be able to:

- Select appropriate design notations, software development environments and programming languages.

4.2 Intellectual Skills

On completion of the module you will be able to:

- Read and understand object-oriented design documentation.
- Make effective use of technical documentation.

4.3 Practical Skills

On completion of the module you will be able to:

- Develop programs using the object-oriented approach.

4.4 Transferable Skills

On completion of the module you will be able to:

- Effectively plan the development of a practical project from design to implementation.

5. ASSESSMENT OF THE MODULE

Coursework 100%

The coursework is expected to consist of a practical development assignment submitted in two parts. The assignment will involve the design and development of an application program to a given specification. The first part is expected to be submitted in week 7 and will represent basic functionality for the application together with design documentation. The second part will be submitted in week 13 and will consist of the completed application and associated documentation.

6. FEEDBACK

Students will receive ongoing feedback on their coursework during the lab sessions, and will normally receive written feedback on coursework submissions within 15 days.

7. INTRODUCTION TO STUDYING THE MODULE

7.1 Overview of the Main Content

This module emphasises learning through practical exercises and the development of actual software artefacts. Short lectures will be used to inform the laboratory activities and provide a forum for discussion of issues students have encountered in the practical work. The lab sessions will occupy the majority of the contact time and will involve much independent working. Students are required to keep a clear record of the work they have done and are encouraged to experiment and investigate beyond the basic material being taught.

The areas which will be covered include:

- Classes and objects
- Subtyping, overloading, inheritance and type compatibility
- Generic typing
- Object-oriented design and UML notation
- Closures
- Basic GUI Development
- Event-driven programming

7.2 Overview of Types of Classes

There will be a combination of lectures delivering technical, theoretical and contextual information, and lab sessions in which students will work through practical exercises.

7.3 Importance of Student Self-Managed Learning Time

Although much laboratory time will be dedicated to practical exercises, students will need to spend more time in independent study on this. In addition, the theoretical material delivered in lectures will require independent reading and study in order to grasp it fully.

7.4 Employability

This module delivers an increasingly sought after set of skills that are greatly valued in the job market. There are a number of organisations such as Google campaigning for Programming and Software Development to be taught more widely. They need these skills. Programmers who can re-use components rather than re-write them are much more productive.

The skills developed here are applicable to many different languages and development platforms and are commonly sought after. All Information Technology professionals need to understand the process of software development even if they do not directly develop software.

8. THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

The following outline is only indicative, the order and exact content of the lectures may vary according to unavoidable factors.

Week	Content
1	Classes and Objects
2	Extension and Inheritance
3	Abstract classes and Interfaces
4	UML Class Diagrams
5	GUI Development Basics
6	Lambda Expressions
7	GUI Development MVC
8	UML Sequence Diagrams
9	OO Design Patterns
10	Modelling Systems
11	*tba*
12	*tba*
13	Revision/review and Second assessment

9. STUDENT EVALUATION

Unfortunately there was a very low response rate to the module evaluation questionnaire last year and therefore no meaningful previous student evaluation is available. For what it is worth, two students responded both expressing satisfaction with the module.

10. LEARNING RESOURCES

10.1 Core Materials

- Lliang, Y. (2014) *Intro to Java Programming, Comprehensive Version*. Pearson; ISBN 1292070013
- Baesens, B. et al (2015) *Beginning Java Programming: The Object Oriented Approach*. Wrox. ISBN 1118739493
- Weisfeld, M. (2013) *The Object-Oriented Thought Process (Developer's Library)*. Addison Wesley. ISBN 0321861272

10.2 Optional Materials

NOTES

none