



Concepts of Software Development

CSD-1-CSD

[www.lsbu.ac.uk/bb](http://www.lsbu.ac.uk/bb) and  
[www.scism.lsbu.ac.uk/jfl/sd](http://www.scism.lsbu.ac.uk/jfl/sd)

Faculty of Business, Computing and  
Information Management

2006/7

**become what you want to be**

# Table of Contents

1. Unit Details .....	3
2. Short Description .....	3
3. Aims of the Unit .....	4
4. Learning Outcomes .....	4
Knowledge and Understanding .....	4
Intellectual Skills .....	4
Practical Skills .....	4
Transferable Skills .....	4
5. Assessment of the Unit .....	5
6. Feedback .....	5
7. Introduction to Studying the Unit .....	5
Overview of the Main Content .....	5
Overview of Types of Classes .....	5
Importance of Student Self-Managed Learning Time .....	6
Employability .....	6
8. The Programme of Teaching, Learning and Assessment .....	7
9. Learning Resources .....	8
Core Materials .....	8
Optional Materials .....	8

## 1. UNIT DETAILS

<b>Unit Title:</b>	Concepts Of Software Development
<b>Unit Level:</b>	1
<b>Unit Reference Number:</b>	CSD_1_CSD
<b>Credit Value:</b>	1
<b>Student Study Hours:</b>	180
<b>Contact Hours:</b>	52
<b>Private Study Hours:</b>	128
<b>Pre-requisite Learning (If applicable):</b>	none
<b>Co-requisite Units (If applicable):</b>	none
<b>Course(s):</b>	FdSc, HND, HNC, BSc CH in Computing, Internet Computing, Multimedia Computing and B.I.T
<b>Year and Semester</b>	Yr 1 Semester 1
<b>Unit Coordinator:</b>	Phil Campbell
<b>UC Contact Details (Tel, Email, Room)</b>	Tel 7449, Email : <a href="mailto:campbep@lsbu.ac.uk">campbep@lsbu.ac.uk</a> Room: N110
<b>Teaching Team &amp; Contact Details (If applicable):</b>	See below
<b>Subject Area:</b>	Software Development
<b>Summary of Assessment Method:</b>	In-class and autonomous program development + multiple choice test

## 2. SHORT DESCRIPTION

A knowledge of Software Development is crucial in most areas of IT. If you are not doing it yourself, you will be working with colleagues who are. Software is the product that defines the computer industry and an understanding of the processes by which software is developed is an essential requirement for anyone who hopes to work in the computer industry

Software Development is a difficult and complex process and learning how to develop software can be equally difficult and complex.

The Software Development in this unit is both an academic body of knowledge and a practical skill. Just like other practical skills, such as riding a bicycle or driving a car, it is not possible to learn the skill by reading how to do it.

**The only way to learn  
Software Development  
is to  
Develop Software!!!**

The skills and knowledge involved in software development are fundamental to your later studies. When you qualify at the end of your course, you may never be required to actually develop a software artefact, but every employer will expect that you have a practical understanding and minimal skills in the process. This unit will provide you with an opportunity to acquire that understanding and skills.

You are responsible for your own learning in this unit. If you do not understand, you must ask. If you do not attend or you do not engage with the learning material then you must also be prepared to fail. You own this process, we also hope you enjoy it!

### 3. AIMS OF THE UNIT

The principle aim of this course is to introduce elementary software development concepts, practice and techniques.

The unit will present an interactive approach to learning about the development of software. Within this context, many of the fundamental considerations that underpin Object Oriented Software Development will be introduced.

### 4. LEARNING OUTCOMES

#### Knowledge and Understanding

- Recognise an Object as a combination of identity, data attributes and associated methods.
- Invoke an Object's methods, passing appropriate attributes.
- Describe a software artefact using appropriate technical language
- Understand and use elementary program structures for selection and iteration.

#### Intellectual Skills

- Use pseudocode to describe a process.
- Use UML object and class diagrams to model real entities.
- Develop a process, involving appropriate flow of control constructs, to perform a specified task.
- Provide a description of a process in pseudocode and describe the differences between sequential, selective and iterative flow of control.

#### Practical Skills

- Use a simple software development environment.
- Demonstrate that artefacts appear to be implemented correctly.
- Construct, use and discard Objects as required
- Be able to read and produce designs for simple programs.

#### Transferable Skills

- log and reflect upon individual learning progress.
- ☐ use appropriate graphical notations to describe and design software.
- ☐ operate a networked workstation effectively.
- use appropriate program structures to implement the design

## 5. ASSESSMENT OF THE UNIT

Assessment is made up of a number of different parts. Most of these will be delivered on the Blackboard web site. The centre around the exercises in the core book and the development of your notebook. Assessments will be on line or developing a collection of Java classes. These will be made up of the following:

1. Weekly record of the contents of the lecture.
2. On line assessment of the chapters from the core book. In these assessments you will be allowed to use your notebook but not your course book or any internet links. These will be in:

week 3 Chapter 1

week 5 Chapter 2

week 7 Chapter 3

week 9 Chapter 4

The best 3 out of 4 will be recorded for these assessments.  
(15 marks each)

3. A design, build and construct exercise handed out in week 6 and handed in in week 12.  
(worth 55 marks).

The above assessments form the first component of the coursework. The second part is

4. A 50 question multiple choice test in week 12, done in-lab for a total of 100 marks.

To pass this unit,

Calculate the overall score =  $0.6 \times (\text{part 1 mark}) + 0.4 \times (\text{part 2 mark})$

***You need to have at least***

- ***30% in part 1,***
- ***30% in part 2 and***
- ***40% in the overall mark***

## 6. FEEDBACK

Feedback will normally be given to students 15 working days after the submission of an assignment. Often feedback will be put on the Blackboard website.

## 7. INTRODUCTION TO STUDYING THE UNIT

### Overview of the Main Content

Software Development is a complex skill that can only be perfected by practical activity. To this end you will be expected to spend much of your time designing and implementing software. Two hours per week will be used for lectures, the remaining two hours contact time will be devoted to lab-based workshops. You will be also expected to spend at least another four hours a week practising these skills.

There is more information on the introduction page of the course material

### Overview of Types of Classes

As well as the lectures, you need to attend laboratory sessions where your tutor will be available to help you. Please note that this help will only be in the form of guidance and not simply give you answers. You will not learn if you are given the solution to the exercises. The work is very practical. Most of the material is in the core book but some materials delivered in the lecture only and are not in the book but may appear on the examination.

### Importance of Student Self-Managed Learning Time

You will have to devote additional time outside of the lab-sessions and the lectures. Later on in the unit the amount of time required can be substantial, especially when doing the final practical assessment.

### Employability

The skills and knowledge delivered in this unit provide fundamental underpinning for many of your later units and in a wide range of contexts after university.

## 8. THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

### Details of assessment for the unit

100% Coursework made up of 2 coursework component marks

These will be

#### **Part 1**

A weekly report to be entered into Blackboard including the contents of the lecture for that week.

On line assessment of the chapters from the core book at the following times.

week 3	Chapter 1
week 5	Chapter 2
week 7	Chapter 3
week 9	Chapter 4

The best 3 out of 4 will be recorded for these assessments. (15 marks each)

A design, build and construct exercise (worth 55 marks)

hand out	week 6
hand in	week 12. .

The above assessments form the first part of the coursework. The second part is

#### **Part 2**

A 50 question in-lab multiple choice test in week 12, done in-lab for a total of 100 marks.

A practice web page will be made available on the web site some weeks before the Multiple choice itself.

### **notebooks**

Do not waste time making it neat (as long as it is readable)

Your notebook is a detailed document that you will have to rely on in your in-lab assessments. You will need to separate your answers to the exercises from your lecture notes and from notes you make from the book, definitions and general ideas.

The notebook must be a live document that records your own work - as you do it!

You should make an entry in the notebook every time you do a significant activity connected with the unit, not just during the weekly practical classes. You should bring your notebook to every practical class. notebooks are the only reference you will be allowed to bring to the in-lab assessments. You will not be allowed to use photocopies of someone else's notebook!!

### **Presentation**

Details of the order of presentation can be found on the unit study guide.

## 9. LEARNING RESOURCES

### Core Materials

The study guide will be found on Blackboard at [www.lsbu.ac.uk/bb](http://www.lsbu.ac.uk/bb)

The core book is essential to successfully study this unit. The book is

### **Objects First with Java (3rd Edition)**

– A practical introduction with BlueJ

By David Barnes and Michael Kolling,

Prentice Hall 2006

ISBN 013-197629-X

Note that there is a big difference between the 2<sup>nd</sup> and 3<sup>rd</sup> editions and you must get the correct one. Most of this unit is based upon work done with this book. It will be extremely difficult to complete this unit without the book!

You will also find Java 5 and the BlueJ environment that we will be using all semester in the back of the book so that you can install it at home.

### Optional Materials

If you feel you need another book on Java, you may find one of the following of use. If you do decide to buy another book, make sure it is an edition that uses Java 5 (also known as Java 1.5).

Ivor Horton.	Beginning Java 2 WROX press (2005)	<i>A heavy book with quite good coverage, not presented in the same order as the course material but useful as a reference especially if you intend to do units using Java in the future.</i>
Herbert Schildt.	Java 2 a Beginners Guide Osborne McGraw Hill (2005)	<i>Again, not in the order used in the course but well presented.</i>
Cay Horstmann	Big Java Wiley 2006	<i>A heavy tome with very complete coverage. Do not to expect to read it all in this semester</i>

There is also the Java Documentation which can be found on the Sun web site

All the software you need is also on the CD you were supplied with when you enrolled for this course.

### NOTES

There are many web sites that support the beginner in Java but you should only really need the core book to succeed in this unit. Further information will be found on the Blackboard site