



الجامعة العربية المفتوحة
Arab Open University

Module Specification

1. Factual information			
Module title	M251: Object Oriented Programming using Java	Level	2
Module tutor	TBA	Credit value	30
Module type	Taught	Notional learning hours	8

2. Rationale for the module and its links with other modules

This module is intended to provide students a good understanding of object-oriented principles, including inheritance, polymorphism, class libraries, interacting objects, and the unified modelling language (UML). It uses the JAVA language to illustrate these principles.

3. Aims of the module

The module aims to:

- Introduce all aspects of object-oriented principles
- Identifying and implementing class relationships using abstract classes, interfaces and inheritance
- Provide knowledge in using simple UML class diagrams
- Describe how these concepts are implemented in java
- Provide knowledge in how to explore the JAVA API and to develop your own
- Provide the knowledge necessary to construct java programs
- Describe a number of the advanced facilities of java including exceptions
- Show how java can be used in developing non-trivial programs
- Introduce good design and programming practice

4. Pre-requisite modules or specified entry requirements

Normally, students are expected to have completed study of their Level-1 TM105 module before they can undertake this module.

5. Intended learning outcomes	
A. Knowledge and understanding	Learning and teaching strategy
<p>After studying the module, <u>the student will be able to</u> demonstrate:</p> <p>A1. An understanding of the object-oriented principles</p> <p>A2. Some knowledge of the main constructs and mechanisms in Java</p> <p>A3. An appreciation of the implications of object oriented software analysis and design</p> <p>A4. An understanding of the techniques used in developing a large Java program</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • TMA work • Module learning booklets and support material
B. Cognitive skills	Learning and teaching strategy
<p>After studying the module, <u>the student will be able to</u>:</p> <p>B1. Describe and apply key concepts and techniques in software design and development</p> <p>B2. Analyze and abstract away from the details of a problem</p> <p>B3. Design and formulate an appropriate solution to a problem and evaluate it</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • TMA work • Module learning booklets and support material
C. Practical and professional skills	Learning and teaching strategy
<p>After studying the module, <u>the student will be able to</u>:</p> <p>C1. Assemble, program, develop, debug, test and evaluate software systems</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • TMA work • Module learning booklets and support material

C. Practical and professional skills	Learning and teaching strategy
<p>C2. Use software tools such as a Java IDE</p> <p>C3. Use good design and programming practice</p> <p>C4. Develop and implement class relationships</p>	

D Key transferable skills	Learning and teaching strategy
<p>After studying the module, the student will be able to:</p> <p>D1 Find information from a range of sources to support a task</p> <p>D2 Plan complex tasks</p> <p>D3 Use new Java libraries</p> <p>D4 Use appropriate numerical, mathematical and abstraction skills</p> <p>D5 Progress to more advanced level studies</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • TMA work • Module learning booklets and support material

6. Indicative content.
<p>Unit 1 Introduction to object orientated programming</p> <p>Unit 2 The unified modelling language (UML)</p> <p>Unit 3 Inheritance and method overriding</p> <p>Unit 4 Object roles and the importance of polymorphism</p> <p>Unit 5 Overloading</p> <p>Unit 6 Object oriented software analysis and design</p> <p>Unit 7 The collections framework</p> <p>Unit 8 Java development tools</p> <p>Unit 9 Creating and using exceptions</p> <p>Unit 10 Agile programming</p> <p>Unit 11 Case study</p>

7. Assessment strategy, assessment methods and their relative weightings
TMA Work: 20% MTA: 30% Exam: 50%

8. Mapping of assessment tasks to learning outcomes																
Assessment tasks	Learning Outcomes															
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	D1	D2	D3	D4	D5
TMA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MTA	✓	✓		✓			✓	✓		✓	✓				✓	
Final	✓	✓		✓			✓	✓		✓	✓				✓	

9. Teaching staff associated with the module	
Tutor's name and contact details	Contact hours
TBA	

10. Key reading list				
Author	Year	Title	Publisher	Location
<u>Simon Kendal</u>	2009	Object Oriented Programming using Java	Ventus	Free online: https://sunsreynat.files.wordpress.com/2014/06/object-oriented-programming-using-java.pdf

11. Other indicative text (e.g. websites)
https://lms.arabou.edu.kw

