Course: Bachelors in Information Technology

Module: Java Programming

Module Code Number: JPO402

Learning Hours and Tutorials

Lectures: 25 lecture Hours

Tutorials: 25 Tutorial Hours

Expected learning outcomes:

❖ To expose students to practical examples of Java.

❖ To acquaint students with the proper procedures to write Java codes, suitable for coursework, professional purposes, and personal use.

❖ Be able to Develop object-oriented applications using Java

Curricular Content:

#	Topic	Subject in Detail	Lecture Hours	Tutorial Hours
1	An Introduction to Java	➢ Java as a Programming Tool ➢ Advantages of Java ➢ The Java "White Paper" Buzzwords ➢ Java and the Internet ➢ A Short History of Java ➢ Common Misconceptions About Java	3	3
2	The Java Programming Environment	➢ Installing the Java Software Development Kit ➢ Development Environments ➢ Using the Command Line Tools ➢ Using an Integrated Development Environment ➢ Compiling and Running Programs from a Text Editor	3	3
3	Fundamental Programming Structures in Java	➢ Explain the usage of variables, data types and operators in Java programs ➢ Explain operators and their implementation in Java programs.	3	3

		➢ Describe decision-making statements and iteration constructs. ➢ Describe arrays and their implementation.		
4	**Objects and Classes**	➢ Introduction to Object-Oriented Programming ➢ Using Existing Classes ➢ Building Your Own Classes ➢ Static Fields and Methods ➢ Method Parameters ➢ Object Construction ➢ Packages ➢ Documentation Comments ➢ Class Design Hints	3	3
5	Inheritance	➢ Extending Classes ➢ Object: The Cosmic Superclass ➢ The Class Class ➢ Reflection ➢ Design Hints for Inheritance	3	3
6	**Interfaces and Inner Classes**	➢ Interfaces ➢ Object Cloning ➢ Inner Classes ➢ Proxies	3	3
7	**Exceptions and Debugging**	➢ Dealing with Errors ➢ Catching Exceptions ➢ Some Tips on Using Exceptions ➢ Debugging Techniques ➢ Using a Debugger	3	3
8	**Multithreading**	➢ What Are Threads? ➢ Interrupting Threads ➢ Thread Properties ➢ Thread Priorities ➢ Selfish Threads ➢ Synchronization ➢ Deadlocks ➢ User Interface Programming with Threads ➢ Using Pipes for Communication between Threads	4	4
		Total	25	25

Assessment Methods and Grading Criteria

Grading criteria

Grade	Description	Mark
HD	High Distinction	85-100
DI	Distinction	75-84
CR	Credit	65-74
PA	Pass	50-64
SA	Satisfactory	Pass where no grade is given
RS	Re-sit	45-49
RD	Re-do	00-44
US	Unsatisfactory	Fail where no grade is given

Assessment Type	Task Type	Weight	
Internal Assessment			30%
Class Assignment	Individual	30 %	
Final Examination			70 %
Practical Exam	Individual	40 %	
Theory Exam	Individual	30 %	

Assessment Details

Class Assignment   30%
It will be assessed by lecturer during lectures and will be based on student activity, speed and skill shown during class assignments.

Practical Exam   40%
The exam is expected to test the candidates' skill and how they demonstrate the range of logical and programming skills they have acquired and possess.

Theory Exam   30%
Final examination paper will be assessed out of 100 marks.
The paper will be set for 3 hours plus 10 minutes reading time.
The examination paper will consist of three sections.

- Section A: 10 multiple-choice questions carrying 1 mark each

- Section B: 10 short answer questions carrying 4 marks each

- Section C: 5 structured questions carrying 10 marks each

4.6.11 *List of reference materials, if relevant:*
- ❖ Java: Classes in Java Applications : David Etheridge
- ❖ Core Java Fundamentals. Volume 1-Prentice Hall (2007) : Cay S. Horstmann, Gary Cornell
- ❖ Java 2 Core Language Little Black Book-Paraglyph Press (2002) : Alain Trottier