


AMOU UNIVERSITY
“A Vehicle for Peace and Development”
AMOU UNIVERSITY



FACULTY OF COMPUTING AND ICT

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY PROGRAMME

ACADEMIC YEAR 2015/ 2016

COURSE DESCRIPTION

BIT 322	JAVA PROGRAMMING
Contact Hours	52
Pre-requisite	BIT 312 Object Oriented Programming
Purpose/Aim	<ul style="list-style-type: none"> The main aim of this course is to build on the concepts of OOPI but using a different programming language
Course Objective (Indicative Learning Outcomes)	<ul style="list-style-type: none"> To demonstrate an in-depth understanding of Object Oriented concepts To apply Object Oriented concepts using pure OOP Language
Course Content	<ul style="list-style-type: none"> Introduction to Java Java’s Lineage; What is Internet?; Services Provided by the Internet; WWW and Hypertext; Client Server Interaction; Limitations of the WEB; The Java Edge, Java Buzzwords; Java API and JVM, Applet versus Applications Basics of Java Data Types, Variables, Literals; Simple Data Types; Type Conversion and Casting; Automatic Type Promotion; Arrays; Operators; - Arithmetic, Bitwise, Relational, Boolean, Assignment, ?, Operator Precedence and Associativity; Control Statements – Sequence, Selection and Iteration. Object-Oriented Programming in Java The Three OOP Principles; Abstraction, Classes, Objects; Accessing the Class Members, Methods Returning Values and Methods with Parameters, Constructors, the Keywords: <i>this</i>, <i>static</i>, <i>final</i>, <i>finalize</i>() Method; Overloading Methods and Constructors, Recursion, Nested and Inner Classes; Access Control , Inheritance, the Keyword <i>super</i>, Method Overriding & Dynamic; Method Dispatch, Multilevel Hierarchy, Abstract Methods and Classes, Packages; Access Protection Matrix, Interfaces, the CLASSPATH Exception Handling & the Input/Output System Exception Types, Uncaught Exceptions; Exception Clauses: try, catch, throw, throws, finally; Java’s Built-in Exceptions; Creating Your Own Exception Classes; When to Use / Not to Use Exceptions The Java I/O System Java I/O Methods; Predefined Streams in Java: System.in, System.out, System.err; The File Class, Byte and Character Streams Hierarchy; Data



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	<p>Streams: DataInputStream and DataOutputStream Classes; The RandomAccessFile Class; The Scanner Classes: StreamTokenizer, StringTokenizer</p> <ul style="list-style-type: none"> • Threads, Applets and Event Handling The Java thread model, States of Threads, Thread Class & Runnable Interface Methods; Creating a Thread, Thread Priorities, Synchronization; Interthread Communication: wait(), notify(), notifyAll(), suspend(), resume(); Applet Basics and Architecture, Applet Initialization & Termination, Applet Restrictions; Writing a Simple Applet, Visualizing How an Applet Works, Simple Applet Display; Methods, Overriding update(), Requesting Repainting - Threads in Applets; Using the Status Window, the HTML APPLET Tag, Passing Parameters to Applets; Event Classes, Sources of Events, Event Listeners and Interfaces, Handling; Mouse Events, Handling Keyboard events Adapter Classes and Interfaces, Inner Classes • The AWT, Swing & java.util Packages (Abstract Windowing Tool Kit) The AWT Class Hierarchy; The Frame Windows, Creating Frame Windows in Applets; Working with Graphics, Colors, and Fonts; Using AWT Controls: Label, Button, CheckBox, CheckBoxGroup, Choice; list, List, TextField, TextArea; Arranging Components on a GUI: Using various Layout Managers • The Swing Designing a GUI with Swing using: Swing Applets (class JApplet); Icons (class ImageIcon & Icon Interface); Labels (class JLabel); Text Fields (class JTextField); Buttons (class JButton); Check Boxes (class JCheckBox); Radio Buttons (class JRadioButton); Choice Lists(class JComboBox) 		
Learning & Teaching Methodologies	Lectures, tutorials and planning exercises Using Java language and IDEs.		
Instructional Materials/Equipment	Classroom with audio visual aids Computer laboratory		
Course Assessment	Type		Weighting (%)
	Final Examination		60
	Mid Term Examination		20
	Assignment		10
	Attendance		10
	Total		100
Recommended Reading	Title	Author	Publisher
	JAVA 2 Programming Black Book	Holzner Steven	DreamTech (2005)
Additional Reading	JAVA programming	Wigglesworth and Lumby	NCC (2002)
	Java Programming, Second Edition	Joyce Farrel	Thompson Course Technology (2004)
Other Support Material	A variety of multimedia systems and electronic information resources as prescribed by the lecturer. Various application manuals and articles, URL search and journals.		