

MANGALORE UNIVERSITY

DEPARTMENT OF M.Sc. COMPUTER SCIENCE

MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

MCAS205: JAVA PROGRAMMING		
Hours/Week: 4 Credits : 4		I.A. Marks: 30 Exams. Marks: 70
<u>Course Outcomes:</u> CO1: Knowledge of the structure and model of the Java programming language, (knowledge) CO2: Use the Java programming language for various programming technologies, (understanding) CO3: Develop software in the Java programming language,(application) CO4: Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements (analysis) CO5: Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem (synthesis) CO6: Choose an engineering approach to solving problems, starting from the acquired knowledge of programming and knowledge of operating systems. (evaluation)		
	UNIT-I	12 Hours
Introduction: Java and Java Applications, Features, Byte code and Interpretation, JDK, JVM; Object-Oriented Programming, Simple Programs; Data Types, Variables, Arrays and Type Conversions; Operators and Expressions; Control Statements: Selection Statements, Iteration Statements and Jump Statements. Classes and Objects: Classes in Java, Declaring a Class, Creating Instances of Class, Members of a Class, Method Overloading; Different Types of Constructors, Inner Class; Uses of this Keyword; Garbage Collection; Recursion; Access Control; Static Members.		
	UNIT-II	12 Hours
Inheritance: Introduction; Method Overriding and Dynamic Method Dispatch; Uses of super and final Keywords; Command Line Arguments; Vardar's; Enumerations; Exception Handling: Exception Handling in Java. Packages and Interfaces: Packages, Importing Packages; Interfaces. I/O: Basics, Console I/O, Reading and Writing Files; Generics: Overview, Examples, Multiple Generic Parameters, Bounds, Wildcards, Generic Methods, Interfaces and Classes. Collections: Overview, Interfaces, Classes – Array List, Linked List, Hash Set and Map.		

	UNIT-III	12 Hours
Multi-threaded Programming: Introduction; Creating Threads: Extending Threads; Implementing Runnable; Synchronization, Priorities, Inter-Thread Communication, Thread States and Methods on Thread Objects. Event Handling: Two Event Handling Mechanisms; The Delegation Event Model; Event Classes; Sources of Events; Event Listener Interfaces; Using the Delegation Event Model; Adapter Classes; Inner Classes.		
	UNIT-IV	12 Hours
Lambda Expressions: Introduction, Block Lambda Expressions, Generic Functional Interfaces, Passing Lambda Expressions as Arguments, Exceptions, Variable Capture, Method References, Constructor References, Predefined Functional Interfaces. Swing: The Origins of Swing; Two Key Swing Features; Components and Containers; The Swing Packages; A Simple Swing Application; JLabel; ImageIcon; JTextField; The Swing Buttons; Understanding Layout Managers; JTabbedPane; JScrollPane; JList; JComboBox; JTable; Overview of Menu.		
REFERENCE BOOKS: 1. Herbert Schildt, Java - The Complete Reference – McGraw Hill Education, 2014, 9th Edition. 2. Kathy Sierra and Bert Bates, Head First Java, O'Reilly, 2005, 2nd Edition. 3. Joshua Bloch, Effective Java, Addison Wesley, 2008, 2nd Edition.		

