

Branch Name:	MCA
Program Code:	CS201
Course Title:	Fundamentals of Java Programming
Course Code:	3CS2010203T
Pre-requisite Course:	Programming Skills

Course Objective:

The objectives of the course are to:

1. Get a better understanding of the concepts of Object-Oriented Programming Language and use of Java.
2. Develop proficiency in creating console based and GUI based applications using the Java Programming Language.
3. Gets a good understanding of developing multithreaded applications using Java Programming Language.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				Total (Marks)
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	-	-	3	60	40	-	-	100

Course Contents:

Unit No	Topic	Total Hours	Weightage (%)
1	<p>Object Oriented Programming & Introduction to Java: Basics of Object-Oriented Programming, Features of the Java Language, Creating an simple java application, Compiling and executing Java Application</p> <p>Data Types, Variables, Arrays and String Handling: Simple data types, Literals & Variables, Type conversion and casting, Arrays, String class, Operations on String.</p> <p>Operators: Arithmetic, Bitwise, Relational, Boolean Logical, Assignment, Conditional Operators, Operator Precedence</p> <p>Control Statements: Selection Statements, Iteration Statements, Jump Statements</p>	10	25
2	<p>Defining a class: Various members within a class, instance variables, Methods and their overloading, Constructors and their overloading, Garbage Collection and finalize method, static variables and methods, Initialize and Class Initialize Block.</p> <p>Inheritance and subclassing: Defining subclasses, Use of super, Methods and variable binding, Using final with variables, methods and classes</p> <p>Abstract Classes and Interfaces: Abstract classes and abstract methods, Single inheritance of classes, Interfaces</p> <p>Packages and use of access specifiers: Uses of package and import statements, use of static imports, use of CLASSPATH for class loading, Access specifiers</p> <p>java.util package: Date, TimeZone and Calendar classes.</p>	10	25
3	<p>Exception Handling: Exception Handling Fundamentals, Types of Exceptions, Dealing with Exceptions Java's Built-in Exceptions, Defining Your Own Exceptions, Chained Exceptions.</p> <p>Multi-threading:</p>	10	25

	Understanding Java Thread Model, Creating a Threads, Thread Priorities, Synchronization, Inter thread Communication		
4	Input and Output: I/O Basics, Reading Console Input, Writing Console Output. GUI Programming: Overview of the Components, Component Properties and Graphics Context, GUI Containers and Layout Managers, Event Handling	10	25

Text Books:

- Herbert Schildt, "The Complete Reference Java2", Fifth Edition, Tata McGRAW-Hill

Reference Books:

- Pravin Jain, "The class of Java" Pearson Education, (2010).
- Ivor Horton, "Beginning Java 2", JDK 5 Edition, Wiley Computer Publishing, (2007)

List of Open Source Software/learning website:

<https://www.geeksforgeeks.org>

<https://www.w3schools.com>

<https://www.codecademy.com>

<https://www.tutorialspoint.com>

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Create appropriate classes using the Java Programming Language for solving real world problems.	6. Creating, 5. Evaluate 3. Applying 4. Analyze
CLO2	Develop console based and GUI based applications using the Java Programming Language.	1 Remembering 2. Understanding 6. Creating
CLO3	Develop multi-threaded applications using the Java Programming Language	1 Remembering 2. Understanding 6. Creating
CLO4	Create Applets for simple web based applications.	6. Creating, 5. Evaluate 3. Applying 4. Analyze
CLO5	Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.	3. Applying, 6. Creating
CLO6	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.	1 Remembering 2. Understanding 6. Creating

Mapping of CLOs with POs & PSOs

Course Learning Outcome s	Program Outcomes (POs)												Program Specific Outcomes(P SOs)	
	P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O1 0	P O1 1	P O1 2	PS O1	PSO 2
CLO1		H	H				L				M	M	H	M
CLO2		H	H			M		M		H	M	M	H	M
CLO3					M	H		M					H	M
CLO4		M	M	M		M		M	M					M
CLO5				M	H	M	H	M	H					
CLO6										L		M		H

H:High, M:Medium, L:Low