

COURSE HANDOUT

OBJECT ORIENTED PROGRAMMING USING JAVA (PSCSCATC-223)

MCA-2nd SEMESTER

ACADEMIC YEAR (2023-24)

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Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Sessional	Final Exam	Total
PSCSATC-223	Object Oriented Programming using Java	Core	4	4	0	0	40	60	100

COURSE OUTCOMES

At the end of the course the student will be able to:	
CO1	To gain knowledge about Java language.
CO2	To understand the fundamentals of object-oriented programming in Java.
CO3	To understand the basic principles of web application programming
CO4	Students will be able to design dynamic web application using database connectivity

Unit-I

Java Language Basics: Features, Object Oriented concepts, Java Virtual Machine Concepts, Primitive Data Type and Variables, Java Keywords, Java Operators, Expressions, Control Statements and Arrays. Class and Objects, Static methods, Constructors, Method Overloading

(10 Hours)

Unit-II

Inheritance, Packages and Interfaces: Inheritance, Access Control, Method Overriding, Garbage Collection, Abstract Classes, Polymorphism Packages, Interfaces, Exceptions Handling, Types of Exceptions, Writing Exception Subclasses, Multithreading, Synchronization in Java

(10 Hours)

Unit-III

I/O, Files & Applets Programming: I/O in Java, Byte Stream Classes, Character Stream Classes, Reading and Writing to Console, Reading and Writing Files, The Transient and Volatile Modifiers, The String and String Buffer Class. The Applet Class, An Applet Skeleton, adding images & sound, passing parameters to an applet

(10 Hours)

Unit- IV

AWT & Networking: AWT Components, Building User Interface with AWT, Handling Events of Mouse and Keyboards, Event Delegation Model (Events, Listeners, interfaces), Layouts and Layout Manager

(10 Hours)

Unit-V

Database Connectivity: JDBC Overview, JDBC implementation, Connection class, Statements, Types of statement objects (Statement, prepared Statement and Callable Statement), Types of result set, Result Set Meta Data, Catching Database Results, Handling database Queries, JDBC and AWT.

(10 Hours)

Textbooks

S.No	Name of the Books	Name of the Author	Publisher Name	Edition (Pub.Yr.)
1	JAVA: THE COMPLETE REFERENCE	Herbert Schildt	McGraw Hill Education	12th (2022)
2.	Object Oriented Programming in Java	Rick Halterman	Southern Adventist University	1st (2008)



Reference Books

S.No	Name of the Books	Name of the Author	Publisher Name	Edition (Pub.Yr.)
1	Java 8 Programming Black Book	D.T. Editorial Services	Dreamtech Press	6th (2015)

COURSE PLAN		
Unit-I Java Language Basics		
S.No	Topics	Recommended Books
1	Features, Object oriented concepts, Java Virtual Machine Concepts	Book 1, Ch.1
2	Primitive Data Type and Variables, Java Keywords, Java Operators	Book 1, Ch.1
3	Expressions, Control Statements	Book 1, Ch.1
4	Arrays	Book 2, Ch.2
5	Class and Objects, Static methods	Book 2, Ch.2
6	Constructors, Method Overloading	Book 2, Ch.2
Unit-II Inheritance, Packages and Interfaces		
7	Inheritance, Access Control	Book 1, Ch.2
8	Method Overriding, Garbage Collection	Book 1, Ch.2
9	Abstract Classes, Polymorphism	Book 1, Ch.1
10	Packages	Book 2, Ch.2
11	Interfaces, Exceptions Handling Types of Exceptions, Writing Exception Subclasses	Book 2, Ch.2
12	Multithreading, Synchronization in Java	Book 2, Ch.2
Unit-III I/O, Files & Applets Programming		
13	I/O in Java, Byte Stream Classes, Character Stream Classes	Book 2, Ch.2
14	Reading and Writing to Console, Reading and Writing Files	Book 2, Ch.2
15	The Transient and Volatile Modifiers	Book 2, Ch.2
16	The String and String Buffer Class. The Applet Class	Book 2, Ch.2
18	An Applet Skeleton, adding images & sound	Book 2, Ch.2
19	Passing parameters to an applet.	Book 2, Ch.2
Unit-IV AWT & Networking		
20	AWT Components,	Book 2, Ch.3
21	Building User Interface with AWT	Book 1, Ch.4
22	Handling Events of Mouse and Keyboards	Book 1, Ch.4
23	Handling Events, Event Delegation Model	Book 2, Ch.3
24	Layouts and Layout Manager	Book 1, Ch.3
Unit-V Database Connectivity		
25	JDBC Overview, JDBC implementation, Connection class, Statements	Book 2, Ch.8
26	Types of statement objects	Book 1, Ch.8
27	Types of resultset, ResultSetMetaData	Book 2, Ch.8
28	Catching Database Results	Book 1, Ch.8
29	Handling database Queries	Book 2, Ch.8



30	JDBC and AWT	Book2, Ch. 8
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ADDITIONAL WEB RESOURCES

1.	MOOC: Object Oriented Programming Using Java https://www.coursera.org/learn/fundamentals-of-java-programming
2.	NPTEL: Video lectures on Java Programming series by Prof. Debasis Samanta Department of Computer Science & Engineering, IIT Kharagpur https://archive.nptel.ac.in/courses/106/105/106105191/

GRADING AND ASSESSMENT

- **Sessional Test:** 20 marks
- **Assignment:** 10 marks
- **Attendance:** 10 marks
- **Final Examination:** 60 marks

COURSE POLICIES

- **Attendance:** Minimum 75% attendance is mandatory to appear in the final examination of the course.
- **Academic Integrity:** MIET's academic integrity policies apply. Plagiarism will not be tolerated.
- **Late Submissions:** Assignments and projects must be submitted by the specified timelines.

FACULTY INFORMATION

- **Office Hours**
Monday (12:05 PM - 12:55 PM)
Friday (12:05 PM - 12:55 PM)
- **Contact Information**
vishal.mca@mietjammu.in