



MCA (Master of Computer Applications)
MCA (Master of Computer Applications) Semester II

Course Code	PS02CMCA51	Title of the Course	OBJECT ORIENTED PROGRAMMING USING JAVA
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">1. To learn computer programming using the Java programming language and the Java Platform, Standard Edition (Java SE).2. To learn the fundamentals of object-oriented programming.3. Learning to write object-oriented programs in Java.4. Knowledge of important features of the Java SE platform.5. Learning to develop graphical and database programs using Java.
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Course Content		
Unit	Description	Weightage* (%)
1.	Introduction to Java <ul style="list-style-type: none">- The Java programming language: history, evolution, features- Introduction to the Java programming environment, JDK, JRE- Introduction to the IDE- Data types and wrapper classes, operators- Control structures- String handling- Basic Input-output	25
2.	Introduction to Object-oriented Programming <ul style="list-style-type: none">- Basic concepts of object-oriented programming- Classes, instances, methods- Static and non-static members- Packages- Inheritance and polymorphism, method overriding- Final and abstract classes, abstract methods- Interfaces- Generics, enumeration- Inner classes and anonymous classes- Class loaders, class path	25





3.	More Features of the Java Platform <ul style="list-style-type: none">- Exception handling- Input-output and file handling- The collections framework and handling classes in it- Introduction to the java.util package- Multithreading- Introduction to network programming- Introduction to lambda expressions and serialization	25
4.	Developing Graphical Programs and Database Access <ul style="list-style-type: none">- An introduction to graphics in Java- Brief introduction to AWT- The Swing library- Writing graphical programs using Swing- Using various Swing components- Managing layout using Swing- Event handling using Swing- Introduction to JDBC- Different types of JDBC drivers- Programming database applications using JDBC	25

Teaching-Learning Methodology	Blended learning approach incorporating traditional classroom teaching as well as online / ICT-based teaching practices
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%





Course Outcomes: Having completed this course, the learner will be able to

1.	develop computer programs using the Java programming language and the Java SE platform.
2.	gain an understanding of fundamental object-oriented programming concepts.
3.	develop object-oriented software in Java.
4.	display knowledge of multithreading, file handling and network programming in Java.
5.	develop GUI programs in Java.
6.	have knowledge of database access in Java using JDBC.

Suggested References:

Sr. No.	References
1.	Schildt H. : Java: The Complete Reference, 9th Edition, McGraw-Hill Education, 2017.
2.	Deitel P., Deitel, H. : Java: How to Program: Early Objects, 11 th Edition, Pearson Education, 2018.
3.	Rao, R. N.: Core Java: An Integrated Approach, New Edition, Dreamtech Press, 2008.
4.	Horstmann C. : Core Java Volume I – Fundamentals, 11 th Edition, Prentice Hall, 2018.
5.	Horstmann C. : Core Java, Volume II – Advanced Features, 11 th Edition, Prentice Hall, 2018.

On-line resources to be used if available as reference material

1.	Java SE API Documentation.
2.	The Java™ Tutorials.

