

## NIRMA UNIVERSITY

<b>Institute:</b>	Institute of Technology
<b>Name of Programme:</b>	Integrated B.Tech.(CSE)-MBA
<b>Course Code:</b>	CSI0403
<b>Course Title:</b>	Object Oriented Application Development
<b>Course Type:</b>	Core
<b>Year of Introduction:</b>	2021-22

### Credit Scheme

L	T	Practical Component				C
		LPW	PW	W	S	
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### Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

1. summarize the core concepts of object-oriented approach for application development
2. implement multi-threaded applications with basic input-output operations and exception handling
3. apply the concepts of java technologies to design interactive applications
4. develop applications using JDBC connectivity to access data from database and execute different queries to get required result

**Syllabus: Total Teaching hours: 20**

Unit	Syllabus	Teaching hours
Unit-I	<p><b>Exception Handling:</b> Exception types, uncaught exceptions, try, catch, throw, throws, finally, multiple catch clauses, nested try statements, built-in exceptions, custom exceptions</p> <p><b>Multithreaded Programming:</b> Java thread model, Thread class, Runnable interfaces, Creating a thread(s), Thread class methods</p> <p><b>Managing I/O:</b> Streams, Byte Streams and Character Streams, Predefined Streams, reading console Input, Writing Console Output</p>	05
Unit-II	<p><b>Event Handling:</b> various event handling mechanisms, Delegation Event Model, Events, Event Sources, Event Listeners, various classes related to event sources and event listeners</p> <p><b>AWT:</b> window fundamentals, creating frames, working with graphics, working with colors, working with fonts, Adding removing various controls, Layout managers, menu bars and menus</p>	07
Unit-III	<p><b>Introduction to Swing:</b> MVC Architecture, Swing AWT and JFC, Writing Swing Application, Swing Components, Changing Look and Feel of Application, Enhancing Application Using Clipboard, Drag and Drop, I/O Stream Enhancement, Printing, Internationalization</p>	06
Unit-IV	<p><b>Java Database Programming:</b> Java SQL Package Study, JDBC, Different Types of Drivers of JDBC, creating connection using JDBC, DML and DDL queries for application development</p>	02

Self-Study: The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents

- Suggested Readings/References:
1. Herbert Schildt, Herbert Schildt, Java – The Complete Reference, Tata McGraw Hill
  2. Herbert Schildt and Dale Skrien, Java Programming: A Comprehensive Introduction, Tata McGraw Hill
  3. Java 8 Programming Black Book, Wiley
  4. Balaguruswamy, Programming with Java – A primer, Tata McGraw Hill
  5. John Zukowski, Java AWT reference, O'Reilly Media, Inc.

Suggested List of Experiments:	Sr. No.	Title	Hours
	1	To create console-based applications applying the concepts of exception handling and multithreaded programming.	02
	2	To create console-based applications applying the concepts of file management.	04
	3	To create a GUI program that implements concepts of event handling such as keyboard press, mouse click etc.	04
	4	To create a menu-based GUI program using AWT class along with frames and various AWT controls that uses concepts of file management.	04
	5	To create a basic swing program and learn concepts frame and event handling.	04
	6	To exemplify Swing concepts layout designing through stop watch.	06
	7	To implement Swing programs that demonstrate JList and JTree controls.	04
	8	To create a Swing application of your choice that includes following necessary functionalities: <ul style="list-style-type: none"> <li>● Home Frame with Menu</li> <li>● Various Dialogs</li> <li>● Use JTable control for display operation</li> <li>● Database operations: add, edit, delete and display.</li> </ul>	06
	9	To create a database table using Java, perform insert, delete, update, delete and select operation.	04
	10	Java program to write and execute the SQL query.	02

Suggested Case List: -NA-

