

DETAILED SYLLABUS

Week	Content
Week 1	Introduction: About the Course, A Brief History, Computer Career Research, Setting up Java, The Software Development Process, What is my Program Doing?, Introduction to Object-Oriented Programming Concepts, Software Development, What is a Variable?, Numeric Data, Number Systems, Textual Data, Converting Between Data Types, Keyboard Input
Week 2	Swing UI: Packages, Components and Containers, Layouts and Absolute, Components Class Hierarchy, Event Handling and Listeners, Action, Window, Mouse, Key, Item, Adjustment, ListSelection, Adapter Classes, Data Types What is a Method?, Methods and Library Classes (Using GUI), Recursion, The import Declaration and Packages, Java API Documentation, The String Class, The Random Class, The Math Class
Week 3	Decision Statements (Using GUI): Boolean Expressions and if/else Constructs, Understanding Conditional Execution, Relational Operators, Truth Tables, and De Morgan's Law, switch Statement Loops: For Loop Constructs (Using GUI), while and do-while Loops, Tracing Java Loops, Using break and continue Statements
Week 4	Creating Classes (Using GUI): Creating a Class, Instantiating Objects, Constructors, Overloading Methods, Java String Project, Object Interaction and Encapsulation, static Variables and Methods, Inheritance, Polymorphism, Inheritance and Polymorphism Project
Week 5	Arrays and Exceptions (Using GUI): One-dimensional Arrays, ArrayLists, Two-dimensional Arrays, Arrays Projects, Sorting and Searching, Exception Handling, Debugging Concepts and Techniques JavaFX:

	Introduction to Java FX, Colors and Shapes, Graphics, Audio and MouseEvents
Week 6	<p>Java Database Connectivity: JDBC Concept, Libraries, Classes and Interfaces</p> <p>Web Contents: Java Servlets, JavaServer Pages (JSP), Model-View-Controller (MVC) Architecture, Session Management</p> <p>Introducing: Spring Framework, Hibernate, RESTful Web Services, Java Message Service (JMS), Design Patterns in Java, Microservices</p>
Weet 7 (O)	<p>Project: Online Bookstore Management System</p> <p>Description: The Online Bookstore Management System is an advanced Java project with a Graphical User Interface (GUI) designed to manage the operations of an online bookstore efficiently. The system includes various modules and functionalities to handle different aspects of the bookstore operations seamlessly.</p>
Week 8 (O)	

Unraveling Tomorrow's Technology