

**Dr. Ambedkar Institute of Technology, Bengaluru-560056**

**Department of Computer Science & Engineering**

**Scheme and Syllabus-CBCS**

**2023 -2024**

Course Title	<b>JAVA FULL STACK DEVELOPMENT</b>						
Course Code	<b>21CSTE6042</b>						
Category	Integrated Professional Core Course						
Scheme and Credits	No. of Hours/Week					Total teaching hours	Credits
	L	T	P	SS	Total		
	03	00	00	00	03	42	03
CIE Marks: 50	SEE Marks: 50	Total Max. Marks=100			Duration of SEE:03 Hours		

**COURSE OBJECTIVES:**

This course will help students to achieve the ability to:

**CO 1:** Understand the concepts of Java language and will model the real world applications using Object Oriented Programming concepts.

**CO 2:** Develop applications using collections for managing user defined types and to learn the importance of string handling.

**CO 3:** Understand and apply the concept of Object Relational Mapping using Hibernate.

**CO 4:** Apply the Spring boot concepts to create enterprise applications.

**CO 5:** Implement front end application using Angular JS.

Unit No	Syllabus Content	No of Hours
1.	<b>Core Java :</b> Declarations and Access Control, Object Orientation, Operators, Flow Control, Exceptions, Gradle Fundamentals, TDD with Junit 5, Strings, I/O, Formatting, and Parsing, Generics and Collections, Threads.	6
2.	<b>Core Java 8:</b> Concurrent Patterns in Java, Concurrent Collections, Lambda Expressions, Stream API, Introduction to Design Pattern, GitHub, Introduction to JDBC: Connection, Statement, PreparedStatement, ResultSet.	8
3.	<b>JPA using Hibernate:</b> Introduction, Entities, Managing Entities, Querying Entities, Entity Relationships.	6
4.	<b>Spring Core:</b> Spring Core Introduction / Overview, Spring Container, Dependency Injection, Metadata / Configuration. <b>Spring MVC:</b> Introduction / Developing Web applications with Spring MVC, Advanced Techniques, Spring Controllers, RESTful Web Services. <b>Spring Boot:</b> SPRING BOOT Introduction, Using Spring Boot, Spring Boot Essentials. <b>Spring Data JPA, Spring Data REST.</b>	10
5.	<b>HTML 5, CSS 3 with Bootstrap, Javascript ES6. Angular JS:</b> Introduction to HTML 5, CSS 3 with Bootstrap, Javascript ES6 Getting started with Node.js, Introduction To Angular JS, Angular JS Modules, Directives & Building Databases.	12



Course Outcomes	Description	RBT Levels
CO1	To understand the concepts of Java language and will model the real world applications using Object Oriented Programming concepts	L1
CO2	Develop applications using collections for managing user defined types and to learn the importance of string handling.	L2
CO3	To understand and apply the concept of Object Relational Mapping using Hibernate	L3
CO4	Apply the Spring boot concepts to create enterprise applications	L4
CO5	Implement front end application for spring boot using React JS	L5

#### TEXT BOOKS:

1. Herbert Schildt, "Java: The Complete Reference", 9th Edition, Oracle Press, Tata McGraw Hill.
2. "Java Server Programming Java EE6 (J2EE 1.6)", Kogent learning solution, Dreamtech press 2014.
3. Adam Freeman - ProAngularJS, Apress, First Edition, 2014.
4. ShyamSeshadri, Brad Green – "AngularJS: Up and Running: Enhanced Productivity with Structured Web Apps", Apress, O'Reilly Media, Inc.

#### REFERENCE BOOKS:

1. Y. Daniel Liang, "Introduction to JAVA Programming", 7th Edition, Pearson Education, 2007.
2. Stephanie Bodoff et al, "The J2EE Tutorial", 2nd Edition, Pearson Education, 2004.
3. Agus Kurniawan – "AngularJS Programming by Example", First Edition, PE Press, 2014.

#### SELF-STUDY REFERENCES/WEBLINKS:

1. Core Java: <https://youtu.be/Z3rliXoT8D4>
2. Core Java 8 : <https://youtu.be/UfJ0lCH7FMM>
3. JPA using Hibernate: [https://youtu.be/MaI0\\_XdpdP8](https://youtu.be/MaI0_XdpdP8)
4. Spring Core : [https://youtu.be/Ku3gsv7\\_bCc](https://youtu.be/Ku3gsv7_bCc)
5. Introduction to AngularJS : <https://www.youtube.com/watch?v=HEbphzK-0xE>
6. AngularJS Modules : <https://www.youtube.com/watch?v=gWmOKmgnQkU>
7. Directives & Building Databases: [https://www.youtube.com/watch?v=R\\_okHflzgm0](https://www.youtube.com/watch?v=R_okHflzgm0)
8. Introduction to NODE .JS: <https://www.youtube.com/watch?v=8ulo-OmOeGQ>

**COURSE  
COORDINATOR:**

**Prof. Vinutha H  
Prof. Tejaswini K**