



**GOVERNMENT OF TAMILNADU
DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI
CANADA INDIA INSTITUTIONAL COOPERATION PROJECT
STATE PROJECT COORDINATION UNIT**

CURRICULUM

Course Name	Advance Java (J2EE)
Course Code	CSE/2020/013
Course Duration	80 Hours
Minimum Eligibility Criteria and Pre-requisites(if any)	ITI/10 th +2/Diploma/Graduates Basics concepts of java
Course Objectives	<p>The important objectives of the course is to:</p> <ul style="list-style-type: none"> • Create Web Applications using Java Servlet • Manage Web Session using Servlet and JSP • Use JavaBeans in JSP • Develop Custom Tags in JSP • Handle Errors and Exceptions in Web Applications • Use NetBeans IDE for creating J2EE Application
Course Outcomes	<p>After completion of the course, students will be able to use the features of</p> <ul style="list-style-type: none"> • Metadata of J2EE • Collections, Framework And String Handling Of J2EE • Tomcat For Servlet Development • Concept Of JDBC
Expected Job Roles	Advance Java (J2EE) Application Developer

TEACHING AND SCHEME OF EXAMINATION

Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
CSE/2020/013	Advance Java (J2EE)	Theory	30	10	20	3 Hours
		Practical	50	40	80	
		Total	80	50	100	

CSE/2020/013 - ADVANCE JAVA (J2EE)
DETAILED SYLLABUS

UNIT NO	MODULES	NO.OF.HOURS THEORY
I	ENUMERATIONS AND ANNOTATIONS (METADATA)	
1.1	Enumerations, Enumeration fundamentals.	6
1.2	Annotations, Annotation basics, ,	
1.3	Annotated element Interface	
1.4	Using Default values, Marker Annotations	
1.5	Single Member annotations.	
II	THE COLLECTIONS AND FRAMEWORK	
2.1	Collections Overview, Recent Changes to Collections, The Collection Interfaces,	6
2.2	The Collection Classes, Accessing a collection Via an Iterator,	
2.3	Storing User Defined Classes in Collections,	
2.4	The Random Access Interface	
2.5	The legacy Classes and Interfaces.	
III	STRING HANDLING	
3.1	String Handling :The String Constructors, Special String Operations	6
3.2	String Concatenation, String Concatenation with Other Data Types	
3.3	String Conversion and Methods, String Buffer ,set Length(), charAt()	
3.4	setCharAt(), getChars(),append(), insert()	
3.5	reverse(), delete()&deleteCharAt()	
IV	TOMCAT FOR SERVLET DEVELOPMENT	
4.1	Background; The Life Cycle of a Servlet;	6
4.2	Using Tomcat for Servlet Development; A simple Servlet;	
4.3	The Servlet API; The Javax.servlet Package;	
4.4	Handling HTTP Requests and Responses; Using Cookies; Session Tracking.	
4.5	Java Server Pages (JSP), JSP, JSP Tags, Tomcat, Request String.	
V	THE CONCEPT OF JDBC	
5.1	The Concept of JDBC; JDBC Driver Types; JDBC Packages;	6
5.2	Database Connection; Associating the JDBC/ODBC Bridge with the Database;	
5.3	Statement Objects	
5.4	Transaction Processing; Metadata, Data types; Exceptions.	
Total Theory Hours		30
Total Practical Hours		50
Total Hours		80

PRACTICAL (50 HOURS)

1. Write a program for method over loading and Method overriding with examples
2. Write a program for Exception handling with examples
3. Write a program for auto boxing and unboxing with samples.
4. Write a program for create, Read and delete a file in Buffered Input stream
5. Write a program to find largest of three numbers using ternary operator
6. Write a Java Program to Reverse an input number
7. To create a frame by extending Frame class using AWT
8. To create fame by creating instance of Frame using AWT
9. Write a program for Thread creation by extending Thread class
10. To create Student Table with RollNo, Name, and Address field and insert \
- few records.
11. To create JDBC program using Statement Object Insert Two Record.
12. To create JDBC program using Statement Object Update One Record.
13. To create JDBC program using Statement Object Delete One Record.
14. To create JDBC program using Statement Object display the content of
- Record
15. Write down the Program to print a “Hello World” servlet

HARDWARE REQUIREMENT

S.NO	LIST OF TOOLS /EQUIPMENTS
1	Desktop computer
2	Printer

SOFTWARE REQUIREMENT

S.NO	LIST OF SOFTWARE
1	Redhat Enterprise Linux 3.0 U1, 4.0
2	Java EE 7 Software Development Kit
3	NetBeans IDE

REFERENCE BOOKS

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1.	Java EE 8 Design Patterns and Best Practices	Rhuan Rocha, Joao Purificacao	Paperback – August 10, 2018
2.	Beginning EJB in Java EE 8	Jonathan Wetherbee, Massimo Nardone, <u>Chirag Rathod</u> , <u>Raghu Kodali</u>	APress Publication , May2018
3.	J2EE: The complete Reference	Jim Keogh	McGraw Hill Education (16 September 2002)
4.	Java - The Complete Reference	Herbert Schildt	Paperback – 1
5.	Java EE 6 for Beginners	Sharanam Shah	Shroff Publishers and Distributors Pvt. Ltd.
6.	Core and Advanced Java, Black Book, Recommended by CDAC	<u>Dreamtech Press</u>	Revised and Upgraded Paperback – 1 January 2018

ASSESSMENT AND CERTIFICATION

S.No	Criteria for assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 word/objective type questions)
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The criteria for successful completion of training is every trainee should score 50% of marks in theory and practical examination.
6.	On successful completion of training , Certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnic.

END EXAMINATION

ALLOCATION OF MARKS

S.No	Description	Max.Marks
1.	Theory Examination	20
2.	Practical Examination	
	a)Procedure	10
	b)Execution	30
	c)Output	20
	d)Record	20
Total Marks		100

THEORY MODEL QUESTION PAPER

CSE/2020/013 - ADVANCE JAVA (J2EE)

(Maximum Marks : 20)

(N.B: Answer any **twenty** questions)

20 x 1 = 20 Marks

1. What is the order of variables in Enum?
2. Which class does all the Enums extend?
3. Which method returns the elements of Enum class?
4. What is Annotation?
5. What Object Types Can Be Returned from an Annotation Method Declaration?
6. Distinguish between ArrayList and Vector in the Java collection framework.
7. Differentiate between Iterator and ListIterator
8. Define emptySet() in the Java collections framework
9. Define EnumSet?
10. How can a Servlet call a JSP error page?
11. Which method is called first each time a servlet is called?
12. Which of the following is not an implicit object in JSP?
13. Java interface can contain _____
14. What type of variable can be defined in an interface?
15. The java _____ method removes the leading and trailing spaces.
16. What is the media type of jsp?
17. JSTL stands for _____.
18. A JSP page consists of _____ tags?
19. JDBC is a _____ interface, which means that it is used to invoke SQL commands directly.
20. What are the major components of the JDBC?
21. The keyword used to create a new object in Java is?
22. What is the difference between load() and get()?
23. Define servlet?
24. What are the different types of JSP directive?
25. The Java _____ method combines a specific string at the end of another string and ultimately returns a combined string.