



GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING SYLLABUS

5th Semester, Subject Code : 3154204

Subject Name : Internet and Web Programming

Type of Course : Professional Elective

Prerequisite : Knowledge of basic HTML and object oriented programming with JAVA is required.

Rationale : The demand of Internet based applications is increasing day by day. To make students comfortable in developing various web based applications is quit important. This course is focusing on front-end and Back-end web application development.

Teaching and Examination Scheme :

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE(E)	PA(M)	ESE(V)	PA(I)		
3	0	2	4	70	30	30	20	150

Syllabus :

Sr. No.	Content	Hours	% Weightage
1	Java Networking Network Basics and Socket overview, TCP/IP client sockets, URL, TCP/IP server sockets, Datagrams, java.net package Socket, Server Socket, InetAddress, URL, URL Connection	05	10%



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2	<p>JDBC Programming The JDBC Connectivity Model, Database Programming: Connecting to the Database, Creating a SQL Query, Getting the Results, Updating Database Data, Error Checking and the SQL Exception Class, The SQLWarning Class, The Statement Interface, Prepared Statement, Callable Statement The Result Set Interface, Updatable Result Sets, JDBC Types, Executing SQL Queries, Result Set Meta Data, Executing SQL Updates, Transaction Management.</p>	06	15%
3	<p>Servlet Programming API Servlet Model: Overview of Servlet, Servlet Life Cycle, HTTP Methods Structure and Deployment descriptor ServletContext and ServletConfig interface, Attributes in Servlet, Request Dispatcher interface, Filter, FilterChain, Filter Config Cookies and Session Management: Understanding state and session, Understanding Session Timeout and Session Tracking, URL Rewriting</p>	12	25%
4	<p>Java Server Pages JSP Overview: The Problem with Servlets, Life Cycle of JSP Page, JSP Processing, JSP Application Design with MVC, Setting Up the JSP Environment, JSP Directives, JSP Action, JSP Implicit Objects JSP Form Processing, JSP Session and Cookies Handling, JSP Session Tracking JSP Database Access, JSP Standard Tag Libraries, JSP Custom Tag, JSP Expression Language, JSP Exception Handling, JSP XML Processing</p>	12	25%
5	<p>Java Server Faces2.0 Introduction to JSF, JSF request processing Life cycle, JSF Expression Language, JSF Standard Component, JSF Facelets Tag, JSF Converter Tag, JSF Validation Tag, JSF Event Handling and Database Access, JSF Libraries: PrimeFaces</p>	05	5%
6	<p>Hibernate 4.0 Overview of Hibernate, Hibernate Architecture, Hibernate Mapping Types, Hibernate O/R Mapping, Hibernate Annotation, Hibernate Query Language</p>	06	10%



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7	Java Web Frameworks: Spring MVC Overview of Spring, Spring Architecture, bean life cycle, XML Configuration on Spring, Aspect – oriented Spring, Managing Database, Managing Transaction	06	10%
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Suggested Specification table with Marks (Theory) :

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	30	20	10	-	-

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Course outcomes : Students will be able to

Sr. No.	CO statement	Marks % Weightage
1	Learn and use Networking and Data base connectivity in Java.	10%
2	Create web pages with dynamic content and server side web application using Servlet and JSP.	50%
3	Use web application framework JSF to build user interfaces.	10%
4	Use Object Relation Mapping using Hibernate to build database dependent applications.	15%
5	Apply Model-View-Controller architecture to build complex client-server applications.	15%



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Reference Books :

1. Implement TCP Server for transferring files using Socket and Server Socket.
2. Implement cookies to store first name and last name using Java server pages.
3. Implement the shopping cart for users for the online shopping. Apply the concept of session.
4. Implement student registration form with enrollment number, first name, last name, semester, contact number. Store the details in database. Also implement search, delete and modify facility for student records.
5. Write a Servlet program to print system date and time.
6. Design a web page that takes the Username from user and if it is a valid username prints “Welcome Username”. Use JSF to implement.
7. Write Hibernate application to store customer records and retrieve the customer record including name, contact number, address.
8. Write an application to keep record and retrieve record of student. The record includes student id, enrollment number, semester, SPI. Use MVC architecture

List of Experiments :

Practical list should be prepared based on the content of the subject with following guidelines in mind.

1. Implement TCP Server for transferring files using Socket and Server Socket.
2. Implement cookies to store first name and last name using Java server pages.
3. Implement the shopping cart for users for the online shopping. Apply the concept of session.
4. Implement student registration form with enrollment number, first name, last name, semester, contact number. Store the details in database. Also implement search, delete and modify facility for student records.
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List of e-Learning Resources :

1. <https://www.tutorialspoint.com/>
2. <https://www.geeksforgeeks.org/introduction-java-servlets/>