

WEB TECHNOLOGIES

Course Code		Year	III	Semester	II
Course Category	Minor	Branch		Course Type	Integrated
Credits	4	L-T-P	3-0-2	Prerequisites	Programming with Java
Continuous Internal Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes

Upon successful completion of the course, the student will be able to		
CO1	Understand the fundamental concepts of web application development.	L2
CO2	Apply basic Front-End Technologies to create static and dynamic web pages.	L3
CO3	Apply JDBC Driver to design application and manipulate databases	L3
CO4	Apply the concepts of server side technologies for creating dynamic web applications.	L3
CO5	Analyze static and dynamic web pages using Front-End Technologies and server side technologies for posting and retrieving data	L4

Syllabus

Unit No.	Contents	Mapped CO
I	<p>HTML: Understanding 3-tier Web Architecture, Overview of HTTP, Introducing HTML document structure, Creating Headings on a web page, Working with links, Creating a Paragraph, Working with images, Working with tables, working with frames, Introduction to Forms and HTML controls.</p> <p>Cascading Style Sheets: Inline, Internal and External Style Sheets, Style class, Multiple styles.</p>	CO1,CO2, CO5
II	<p>JavaScript: Introducing DHTML, Introducing JavaScript, Client Side benefits of using JavaScript, Embedding JavaScript in an HTML page, Using Variables, Using Operators, Working with Control Flow statements, Working with functions, Handling Events, Using Arrays, Creating objects in JavaScript.</p> <p>XML: Introduction to XML: Syntax of XML, document structure, and document type definition.</p>	CO1, CO2, CO5

III	JDBC: Java Database Connectivity: JDBC Connectivity, Types of JDBC drivers, Steps to write a JDBC application, JDBC Statements, Manipulations on the database.	C01, C03, C05
IV	Servlets : Introduction to Servlets: Lifecycle of a servlet, the servlet api, the javax.servlet package, the javax.servlet.http package, handling http request & responses, Servlets with database connectivity. Introduction to Model View Controller (MVC): Architecture.	C01, C04, C05
V	JSP: Introduction to JSP: The problem with servlet, the anatomy of a JSP page, JSP processing, JSP applications, JSP components, comments, expressions, scriptlets, JSP database connectivity	C01, C04, C05

Learning Resources

Text Book

1. Web Technologies, Black Book, Kogent Learning Solutions Inc, Dreamtech Press.
2. Java Servlet Programming, Jason Hunter, William Crawford, Second edition, 2003, O'Reilly, 2003
3. Programming the World Wide Web, Robert W. Sebesta, Fourth edition, 2007, Pearson.

References

1. Internet and World Wide Web - How to program, Dietel and Nieto, 2006, PHI/Pearson Education.
2. JAVA The Complete References, Herbert Schildt, Eighth edition, 2014, McGraw Hill.
3. Web Technologies, UttamK.Roy, 2004, Oxford Higher Education publication.
4. Web Warrior Guide to Web Programming, Bai Ekedaw, 2012, Thompson Publications.

e-Resources and other Digital Material

1. www.w3schools.com
2. Prof. I. Sengupta. (14th, May, 2017), Department of Computer Science & Engineering, I.I.T., Kharagpur, "Internet Technologies", NPTEL videos.

Experiments:

Syllabus		
Expt. No.	Contents	Mapped CO
1	Design static web sites with html tags by taking different examples.	CO1, CO2, CO3, CO4, CO5
2	Design web pages using different types of CSS.	CO1, CO2, CO3, CO4, CO5
3	Apply Client side validations using JavaScript	CO1, CO2, CO3, CO4, CO5
4	Create an XML file for student/employee/book data and validate against DTD	CO1, CO2, CO3, CO4, CO5
5	Develop different JDBC applications to interact with database.	CO1, CO2, CO3, CO4, CO5
6	Create different web applications using servlets	CO1, CO2, CO3, CO4, CO5
7	Develop different web applications using JSP	CO1, CO2, CO3, CO4, CO5
8	Build web applications (case studies) based on the choice of student/faculty	CO1, CO2, CO3, CO4, CO5

Learning Resources

Text Books

1. Web Technologies, Black Book, Kogent Learning Solutions Inc, Dreamtech Press, 2009
2. JavaServer Pages, Hans Bergsten, Third Edition, 2017, O'Reilly Media

Reference Books:

1. The Complete reference to J2EE, Jim Keogh, 2017, Tata McGrawHill.
2. Advanced Java 2 Platform How to Program, H. M. Deitel, P.J. Deitel, S.E. Santry, Third Edition, 2016, Prentice Hall Publications.
3. Java Servlet Programming, Jason Hunter, William Crawford, Second edition, 2003 O'Reilly.

e- Resources & other digital material

1. www.w3schools.com
2. Prof. I. Sengupta. (14th , May, 2017), Department of Computer Science & Engineering, I.I.T., Kharagpur, "Internet Technologies", NPTEL videos.