RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

Credit Based Grading System

Computer Science and Engineering VII-Semester

CS-7003 Web Engineering

UNIT-1

Web Engineering: Introduction, History, Evolution and Need, Time line, Motivation, Categories & Characteristics of Web Applications, Web Engineering Models, Software Engineering v/s Web Engineering. World Wide Web: Introduction to TCP/IP and WAP, DNS, Email, TelNet, HTTP and FTP.

Browser and search engines: Introduction, Search fundamentals, Search strategies, Directories search engines and Meta search engines, Working of the search engines.

Web Servers: Introduction, Features, caching, case study-IIS, Apache.

UNIT- 2

Information Architecture: Role, Collaboration and Communication, Organizing Information, Organizational Challenges, Organizing Web sites parameters and Intranets

Website Design: Development, Development phases, Design issues, Conceptual Design, High-Level Design, Indexing the Right Stuff, Grouping Content. Architectural Page Mockups, Design Sketches, Navigation Systems. Searching Systems, Good & bad web design, Process of Web Publishing. Web-site enhancement, submission of website to search engines.

Web security: issues, security audit. Web effort estimation, Productivity Measurement, Quality usability and reliability. **Requirements Engineering for Web Applications:** Introduction, Fundamentals, Requirement Source, Type, ,Notations Tools. Principles Requirements Engineering Activities, Adapting RE Methods to Web Application.

UNIT- 3

Technologies for Web Applications I:

HTML and DHTML: Introduction, Structure of documents, Elements, Linking, Anchor Attributes, Image Maps, Meta Information, Image Preliminaries, Layouts, Backgrounds, Colors and Text, Fonts, Tables, Frames and layers, Audio and Video Support with HTML Database integration, CSS, Positioning with Style sheets, Forms Control, Form Elements.

Introduction to CGI, PERL, JAVA SCRIPT, JSP, PHP, ASP & AJAX.

Cookies: Creating and Reading

UNIT-4

Technologies for Web Applications II:

XML: Introduction, HTML Vs XML, Validation of documents, DTD, Ways to use, XML for data files, Embedding XML into HTML documents, Converting XML to HTML for Display, Displaying

XML using CSS and XSL, Rewriting HTML as XML, Relationship between HTML, SGML and XML, web personalization , Semantic web, Semantic Web Services, Ontology.

UNIT- 5

E- Commerce: Business Models, Infrastructure, Creating an E-commerce Web Site, Environment and Opportunities. Modes & Approaches, Marketing & Advertising Concepts. Electronic Publishing issues, approaches, legalities and technologies,

Secure Web document, Digital Signatures and Firewalls, Cyber crime and laws, IT Act. Electronic Cash, **Electronic Payment Systems:** RTGS, NEFT, Internet Banking, Credit/Debit Card. **Security:** Digital Certificates & Signatures, SSL, SET, 3D Secure Protocol.

Suggested Experiments:

At least ten practical experiments based on above syllabus and a mini project is desirable to be completed by a group of three that cover following.

1. HTML/ DHTML
2. PHP
3. XML
4. Java Script, CGI, PERL
5. ASP
6. Configuration of Web Servers.

Recommended Books:

1. Roger S.Pressman, David Lowe, “Web Engineering”, Tata Mc Graw Hill Publication, 2007
2. Achyut S Godbole and Atul Kahate, “Web Technologies”, Tata McGraw Hill
3. Gopalan N P , Akilandeswari, “Web Technology: A Developer s Perspective” , PHI
4. Neil Gray, “Web server Programming” Wiley
5. Chris Bates, “Web Programming: Building Internet applications” Wiley
6. Moller, “An Introduction to XML and Web Technologies”, Pearson Education New Delhi, 2009
7. “Web Technologies: Black Book”, Kogent, Dreamtech
8. Internet & World Wide Web How to Program, Pearson education, 3rd edition, by: H.M. Deitel, P.J. Deitel, A.B. Goldberg.
9. C. Xavier, “Web Technology & Design ”, Tata McGraw Hill.
10. 10 Ivan Bay Ross, “HTML,DHTML,Java script,Perl CGI” , BPB