**CT 725 05**

**Course Objectives:**   
The Web is undoubtedly the most successful application on the Internet and has brought revolutionary changes. The course attempts to cover the key foundations of the Web, essential technologies and knowledge needed for web application development. The course also highlights recent developments on the dynamic area of the Web.

1. **Introduction (3 hours)**
   1. History
   2. Internet and the Web
   3. Client/server computing paradigm

1. **Web basics (5 hours)**
   1. Web documents and browsers
   2. HTML, XHTML, forms, CSS
   3. Crawling and information retrieval on the web

1. **Server-side programming(7 hours)**
   1. Server-side scripting languages- PHP, JSP, Java servlets, ASP.NET etc.
   2. Backend database programming
   3. Multi-tier architecture

1. **Client-side scripting(4 hours)**
   1. JavaScript basics
   2. JavaScript DOM

1. **Web applications(6 hours)**
   1. Content management systems
   2. Web application frameworks
   3. Online information systems and solutions

1. **Web 2.0(6 hours)**
   1. Introduction
   2. Blogs, wikis, social networking and collective intelligence
   3. Tagging - folksonomies
   4. AJAX

1. **Information representation and sharing – XML(5 hours)**
   1. XML documents, DTD
   2. Stylesheets and transformation - XSLT
   3. Information syndication - RSS

1. **Web services(4 hours)**
   1. Service-oriented architecture
   2. SOAP, WSDL, REST

1. **The Semantic Web(5 hours)**
   1. Introduction
   2. RDF and Ontologies
   3. Linked Open Data
   4. Applications and Web 3.0

**Practical:**  
Regular lab sessions can be conducted related to web design, server-side programming, client-side scripting, working with application frameworks and tools, etc.  
A number of practical assignments can be given for hands-on experience on web application development.

**References:**

1. Slides and handouts
2. Jeffrey C. Jackson. *Web technologies: a computer science perspective*.
3. P. J. Deitel and H. M. Deitel. *Internet and World Wide Web: How to Program.*
4. G. McComb. *Web Programming Languages*, John Wiley & Sons, Inc., 1997.
5. Marty Hall. *Core Web Programming*, Prentice Hall PTR, Upper Saddle River, NJ 07458, 1998.

**Evaluation Scheme:**  
The questions will cover all the chapters of the syllabus. The evaluation scheme will be as indicated in the table below:

|  |  |  |
| --- | --- | --- |
| **Chapters** | **Hours** | **Marks Distribution\*** |
| 1 | 3 | 5 |
| 2 | 5 | 9 |
| 3 | 7 | 12 |
| 4 | 4 | 7 |
| 5 | 6 | 11 |
| 6 | 6 | 11 |
| 7 | 5 | 9 |
| 8 | 4 | 7 |
| 9 | 5 | 9 |
| **Total** | **45** | **80** |

\*There could be a minor deviation in Marks distribution