**CT 785 05**

**Course objectives:**  
To provide knowledge of the Extensible Markup Language (XML), a standard for self-describing data, knowledge interchange, and information integration. Since representation, interchange and integration of information are fundamental to all information systems, there is a wide range of possible applications of XML.

1. **XML Foundations(10 hours)**
   1. History and background
   2. XML syntax
   3. Document Type Definition (DTD)
   4. XML Schema
   5. XML Stylesheet Language Transformation (XSLT)
2. **XML Models(4 hours)**
   1. XML conceptual models
   2. XML and logic

1. **XML and Databases(10 hours)**
   1. XML as a database model
   2. XML query languages – Xpath, XSLT, XQuery
   3. XML native databases

1. **XML and Semantics(6 hours)**
   1. RDF(Resource Description Framework) syntax and semantics
   2. RDF schema
   3. Web Ontology Language (OWL)
   4. The Semantic Web

1. **Web Services (8 hours)**
   1. SOAP
   2. WSDL
   3. UDDI
   4. Semantic Web Services

1. **XML Applications(7 hours)**
   1. XBRL
   2. Case studies of real XML applications

**Practical:**  
A number of lab sessions can be conducted using XML Spy which is an XML editor and development environment.

**References:**

1. *E.R. Harold:*XML Bible, 2nd ed., IDG Books Worldwide, 2002.
2. *S. Holzner and S. Holzner:*Real World XML, 2nd ed., Peachpit Press, 2003.
3. *S. Holzner:*Inside XML, 1st ed., New Riders Publishing, 2001.
4. *S. Abiteboul, P. Buneman, and J. Gray:*Data on the Web: From Relations to Semistructured Data and XML (Morgan Kaufmann Series in Data Management Systems, Morgan Kaufmann Publishers, 1999.
5. XML W3C Recommendation. http://www.w3.org/TR/2008/REC-xml-20081126

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

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| --- | --- | --- |
| **Chapters** | **Hours** | **Marks Distribution\*** |
| 1 | 10 | 17 |
| 2 | 4 | 7 |
| 3 | 10 | 18 |
| 4 | 6 | 11 |
| 5 | 8 | 14 |
| 6 | 7 | 13 |
| **Total** | **45** | **80** |

\*There could be a minor deviation in Marks distribution