

**Course description:**

This course provides an introduction and overview of XML, including writing well formed and valid XML, XML schemas such as DTD and DOM, and some advance topics in XML like XPath, LinQ to XML and others.

Aims of the course:

The main objective of this course is to enrich the web development skills and tools for web students, with the appropriate web data representation and processing language, i.e. XML.

Intended Learning Outcomes: (ILOs)

Upon successful completion of this course, students will:

- A. have an understanding of extensible markup language (XML), its functionality and use.
- B. be able to identify basic concepts of XML be able to create, manipulate, parse, and use style sheets.
- C. to format well-formed XML documents as well as validate them using DTDs and XML schemas.
- D. be able to transform XML documents using XSLT
- E. be able to parse XML with database libraries such as LINQ

Course structures:

| Week | Credit Hours | ILOs | Topics | Teaching Procedure | Assessment methods |
|------|--------------|------|--|--|--|
| 1 | 3 | A | WHAT IS XML? An introduction to XML | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |
| 2, 3 | 3 | B | WELL-FORMED XML Creating XML in a Text Editor Advanced XML Parsing The XML Infoset | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |
| 4 | 3 | B | XML NAMESPACES Defining Namespaces How Do You Choose a Namespace When to use Namespaces Common Namespaces | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |

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| 5 | 3 | C | Document Type Definitions Working with DTDs Anatomy of a DTDs DTD Limitations | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |
| 6,7 | 3 | C | XML SCHEMAS Benefits of XML Schemas Defining XML Schemas Creating a Schema from Multiple Documents Documenting XML Schemas | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |
| 8,9 | 6 | C | Extracting Data from XML Document Models: Representing XML in Memory The XPath Language | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |
| 10,11 | 3 | D | XSLT XSLT as a Declarative Language Foundational XSLT Elements | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |
| 12 | 3 | E | XML AND DATABASES Analyzing which XML Features are Needed in a Database | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |
| 13,14 | 3 | E | LINQ TO XML EXTRACTING DATA FROM AN XML DOCUMENT | Presentation methods and techniques, Sources of information and Instructional Aids | Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file |

References:

A. Main Textbooks:

Beginning XML, Joe Fawcett, Liam R.E. Quin, Danny Ayers, 2012, 5th Edition, John Wiley & Sons, Inc.



Assessment Methods:

| Methods | Grade | Date |
|--|--------------|-------------|
| first Exam | 20% | |
| Second Exam | 20% | |
| Assignments (Reports /Quizzes/ Seminar / Tutorials) | 10% | |
| Final Examination | 50% | |
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