

# Course Outline



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## XML Fundamentals

### Course Description:

In this course students will learn fundamentals necessary to use XML on the Web or in data processing applications. Through lecture and hands-on lab exercises, you will learn the essentials of data interoperability using XML, write well-formed XML documents, enforce document validity, use XSLT and stylesheets to transform XML documents, and get an introduction to XML programming APIs in languages such as Java and Perl. This course is suitable for anyone who needs an introduction to XML, including application developers, Web developers, XML document authors, and webmasters.

### Pre-requisites:

Students enrolling in this course should understand Internet basics and level 1 HTML skills.

### Course Content:

- **Getting Started with XML**
  - Data and Document Structure
  - XML
  - Well-Formed XML
  - Valid vs. Well-Formed XML
  - Enforcing Valid Documents: DTDs
  - Presentation Style
  - XSL and XSLT
  - Using XML

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- **XML Syntax**
  - XML Fundamentals
  - Tag Attributes
  - Naming Rules
  - Empty and Non-Empty Elements
  - Nesting and Hierarchy of Tags
  - Processing Instructions and the XML Declaration
  - Other XML Constructs
  - Entity and Character References
  
- **Writing DTDs**
  - XML DTDs
  - DOCTYPE
  - Element Conditions and Quantifiers
  - Attributes
  - Attribute Default
  - Parsed General Entities
  - Parsed Parameterized Entities
  
- **Namespaces**
  - Why Namespaces?
  - Namespace Prefixes and Declaration
  - Multiple Namespace Declarations
  - Declaring Namespaces in the Root Element
  - Default Namespaces
  - DTDs and Namespaces
  
- **Basic XML Schemas**
  - Schema Overview
  - A Minimal Schema
  - Associating Unqualified XML with a Schema
  - Simple and Built-in Types
  - Complex Types
  - Element Declarations
  - Attribute Declarations

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- **Basic XML Schemas**
  - Choices
  - Named Types and Anonymous Types
  
- **Transforming XML using XSLT**
  - Transformations
  - Templates
  - XPath: Selecting a Node
  - XPath: Navigating the Tree
  - Extracting Element Values
  - Choosing Specific Cases
  - Multiple Element Transformation
  - Sorting Elements
  
- **XML in Applications**
  - Reasons and Places for Using XML
  - DOM Parsers
  - SAX Parsers
  - Web Services
  
- **Appendix A Namespaces and XML Schema**
  - Associating Qualified XML with a Schema
  
- **Appendix B Presenting XML for the Web - CSS**
  - Stylesheet Languages
  - Formatting with Rules
  - Defining Elements as Blocks
  - Colors and Fonts
  - Page Layout with CSS
  - Lists

**Course Duration:**

**2 Days**

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