

XM1000 – Fundamentals of XML

Course Synopsis	Duration: Three (3) days		
	Audience: Anyone needing an introduction to concepts and technologies associated with XML and its related recommendations.		
	Prerequisites: None. Previous experience or knowledge of HTML is helpful but not essential.		
	Delivery Method: Instructor led, Hands-on workshops		
Brief Description	<i>This course is an intensive, hands-on introduction to XML, DTDs, Schemas, XPath, and XSLT. It is a balanced mixture of theory and practical labs designed to take students through the basic fundamentals of XML. Beginning with the basics of XML, this course then moves into coverage of both DTDs and XML Schemas, and also covers how to use XPath and XSLT to transform XML documents into other documents such as HTML documents or other XML documents.</i>		
Course Objectives What You'll Learn	<p>Upon successful completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> • Create well-formed XML documents • Create Data Type Definitions (DTDs) • Validate an XML document with a DTD • Create XML Schemas • Validate an XML document with a Schema • Create XSLT templates to transform XML Documents into HTML • Use XML Path to retrieve parts of or the whole content of XML Documents. 		
Topics Covered	<table border="0"> <tr> <td style="vertical-align: top;"> <p>I. INTRODUCTION</p> <ul style="list-style-type: none"> • What is XML? • Sample XML Document <p>II. WELL FORMED XML</p> <ul style="list-style-type: none"> • Characters and markup • The XML Declaration • Comments • Elements • The Hierarchical Structure • Start-tag and end-tag • CDATA section • Whitespace • Attributes • Namespaces </td> <td style="vertical-align: top;"> <p>III. DOCUMENT TYPE DEFINITIONS</p> <ul style="list-style-type: none"> • Validating an XML Documents • Internal DTD • Element Declaration • Child Elements List • Cardinality • Child element subsequences • External DTD • Attribute Declaration • Entities: built-in, character, general, parameter <p>IV. INTRODUCTION TO SCHEMA</p> <ul style="list-style-type: none"> • The Schema Element • Element Declarations • Complex Type and Sequence </td> </tr> </table>	<p>I. INTRODUCTION</p> <ul style="list-style-type: none"> • What is XML? • Sample XML Document <p>II. WELL FORMED XML</p> <ul style="list-style-type: none"> • Characters and markup • The XML Declaration • Comments • Elements • The Hierarchical Structure • Start-tag and end-tag • CDATA section • Whitespace • Attributes • Namespaces 	<p>III. DOCUMENT TYPE DEFINITIONS</p> <ul style="list-style-type: none"> • Validating an XML Documents • Internal DTD • Element Declaration • Child Elements List • Cardinality • Child element subsequences • External DTD • Attribute Declaration • Entities: built-in, character, general, parameter <p>IV. INTRODUCTION TO SCHEMA</p> <ul style="list-style-type: none"> • The Schema Element • Element Declarations • Complex Type and Sequence
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XM1000 – Fundamentals of XMLTopics
Covered Continued**V. SCHEMAS: SIMPLE DECLARATIONS**

- Element Declaration
- Attribute Declarations
- Built-in and primitive data types

VI. SCHEMAS: SIMPLE TYPE DEFINITIONS

- Simple Type Declaration
- Restriction Declaration
- Fundamental Facets
- Constraining Facets
- Pattern
- Primitive Datatypes and Facets
- List Declaration
- Union Declaration

VII. SCHEMAS: COMPLEX TYPE DEFINITIONS

- Complex Type Declaration
- Sequence Declaration
- All Declaration
- Choice Declaration
- Simple Declaration
- Group Declaration
- Simple Content Declaration
- Complex Content Declaration
- Annotation Declaration

VIII. INTRODUCTION TO XSLT

- What is XSLT?
- The XSLT Elements

IX. XPath

- The Tree Model
- Retrieving Nodes
- Location Path and Location Step
- Element Axes: Child, Parent, Descendant, Ancestor, Preceding, Following, and others
- Attribute axis
- Namespace axis
- Predicate purpose, structure and operators
- XPath Built-In Functions overview

X. XSLT BASICS

- The Document Declaration
- The Template Declaration
- XSLT instructions:
 - `xsl:apply-template`
 - `xsl:if`
 - `xsl:for-each`
 - `xsl:value-of`
 - `xsl:sort`
 - `xsl:copy-of`