Uka Tarsadia University

<<BCA>>

eXtensible Markup Language(030010505)

5th Semester

EFFECTIVE FROM JUNE-2013

UKA TARSADIA UNIVERSITY		
BCA (5th Semester) Syllabus, 2014-2015		
Course Code: 0300100505		Course Title: eXtensible Markup Language
Course Credits: 04	Total Hours: 48	[Lectures: 04, Tutorial: 00, Practical: 00]
Prerequisites:	030010106-Web Design and Internet Based Application, 030010102- Database Management System, 030010301 – Java Programming	
Prerequisites By Topics:	030010106:- HTML, and CSS. 030010102:- Schemas, Attribute, Entity 30010301:- Data type, class	
Objectives:	To provide the skill of implementation, validation, parsing, formatting, transformation and linking the well formatted XML document and to integrate XML with database.	
1	XML	[08 Hours]
	1.1. XML: Introduction	
	1.2. History Of Markup Language	
	1.3. Advantages Of XML Over Other Markup Language	
	1.4. Application Of XML Heading	
	1.5. XML Syntax: Introduction	
	1.6. XML Document Structure	
	1.7. Rules Of XML Structure	
	1.8. Well formed and valid document	
	1.9. Namespace in XML	
2	Create and Validate XML Document	[10 Hours]
	2.1. DTD: Introduction	
	2.2. Structure ofDTD: Declaration, Attributes, Entities, DTD Directives	
	2.3. DTD Drawback And Alternatives	
	2.4. XML Schema: Introduction	
	2.5. Declaring Schema: Attributes, Elements, Complex Elements, Simple Types	
	2.6. Refining Simple Type Using Facets	
	2.7. Anonymous Type Declaring	
	2.8. Specifying Mixed Content For Elements	
	2.9. Annotating Schemas	
	2.10. Model Group	
	2.11. Attribute Group	
	2.12. Targeting Namespace	
3	Linking XML Document	[06 Hours]
	3.1. Xpath: Operators, Special Character, and Xpath Syntax	
	3.2. Xpointer: Points, Ranges, Abbreviating Xpointer Notation	
	3.3. Xlink: Simple Links, Extended Links	
4	Parsing XML using Document Object Model	[08 Hours]
	4.1. DOM: Introduction, DOM Levels	
	4.2. DOM Core : Parents, Children, Siblings, DOM Interface, Java Binding	
	4.3. DOM Traversal and Range	
	4.4. DOM Implementation: JDOM	
5	Transforming and Formatting XML Document	[10 Hours]
	5.1. XSL: technologies	
	5.2. XSLT for Document Publishing : Introduction, Features	
	5.3. XSL for Business-to-Business Communication	
	5.4. XSL Formatting Objects (XSL-FO)	
	5.5. CSS: Introduction	
	5.6. XML Presentation using CSS	
6	Integrating XML with Databases	[06 Hours]
	6.1. XML Database Solution	
	6.2. Modelling Database in XML	
	6.3. JAXB Solution	

	6.4.	Reviewing Database Schema	
	6.5.	Constructing the desire XML Document	
	6.6.	Defining Schema for XML document	
	6.7.	Creating the JAXB Binding Schema	
	6.8.	Generating the JAXB Classes Based on Schema	
	6.9.	Developing a DAO	

Course Outcomes:

	CO1:	Determine When to Use XML.
	CO2:	Create XML document.
	CO3:	Validate XML document
	CO4:	Find XML element and link XML document
	CO5:	Parse XML Documents with APIs i.e. the Document Object Model (DOM)
	CO6:	Format and transform XML documents
	CO7:	Integrate XML with Database

Course Objectives and Course Outcomes Mapping:

Provide the skill of well formatted XML document implementation: CO1, CO2
Provide a skill to validate, link, parse, format, and transform the XML document: CO2, CO3, CO4, CO5
Integrate XML with database: CO6

Course Units and Course Outcomes Mapping:

Unit No.	Unit	Course Outcome						
		CO1	CO2	CO3	CO4	CO5	CO6	CO7
1	Introduction to XML	✓						
2	Create and validate XML document		✓	✓				
3	Linking XML Document		✓		✓			
4	Parsing XML using Document Object Model		✓			✓		
5	Transforming and Formatting XML Document		✓				✓	
6	Integrating XML with Databases		✓			✓		✓

Resource Material:

	http://www.w3schools.com/xml/

Computing Environment:

A student shall have the following computing environment on personal laptop/computer:	
❖	A text editor and browser

Modes of Transaction (Delivery): Appropriate methods of teaching shall be decided depending on the objectives of the content taught

❖	**Lecture method** is generally used but along with it, as and when required, discussion method shall be fruitful. It shall be supplemented with various appropriate audio-visual aids.

Activities/Practicum:

	The following activities shall be carried out by the students.
	❖ Implement practical unit 2, 3, 4, 5, and 6
	❖ Understand and use of Java architecture to bind XML
	The following activities shall be carried out by the teacher.
	❖ Demonstrate of practical topics from units i.e. 2, 3, 4, 5, and 6

Text Book:

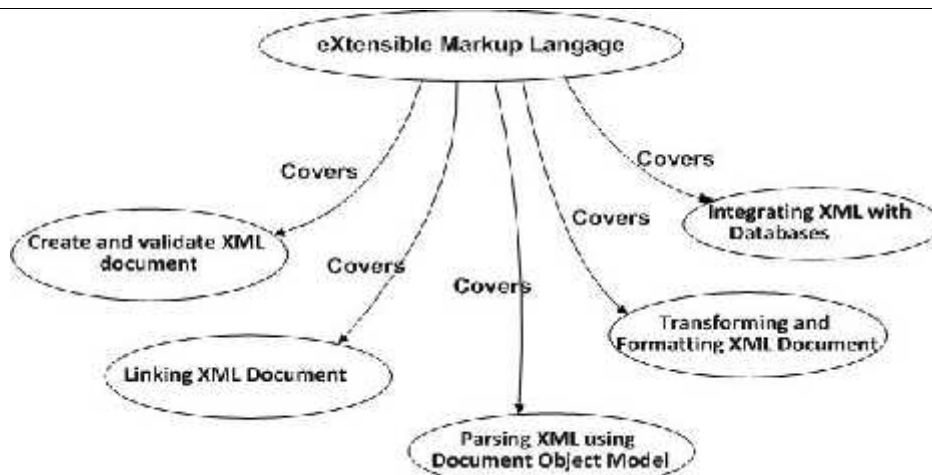| 1.	Schmelzer, R., Vandersypen, T., Bloomberg, J., Siddalingaiah, M., Hunting, S., Qualls, M., Houlding, D., Darby, C., Kennedy. D. - XML and Web Services Unleashed - Pearson

Reference Books:

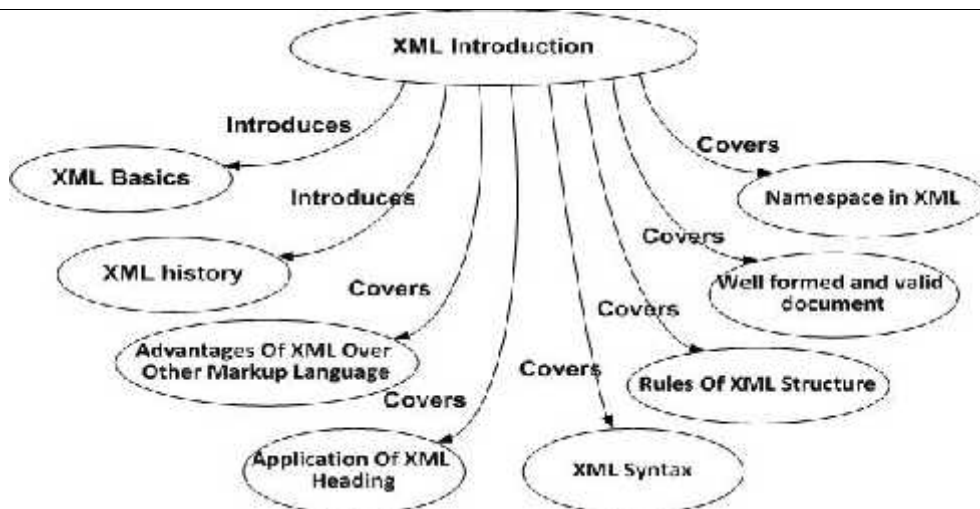| 1.	Williamson, H. - Xml: The Complete Reference - Tata McGraw Hill
2.	Holzner, S. - A Beginer's guide: XML - Tata McGraw Hill
3.	Goldberg, K. - XML: Visual QuickStart Guide - Peachpit Press
4.	Harold, E. and W. Scott Means - XML in a nutshell - O'Reilly

Concept Map:

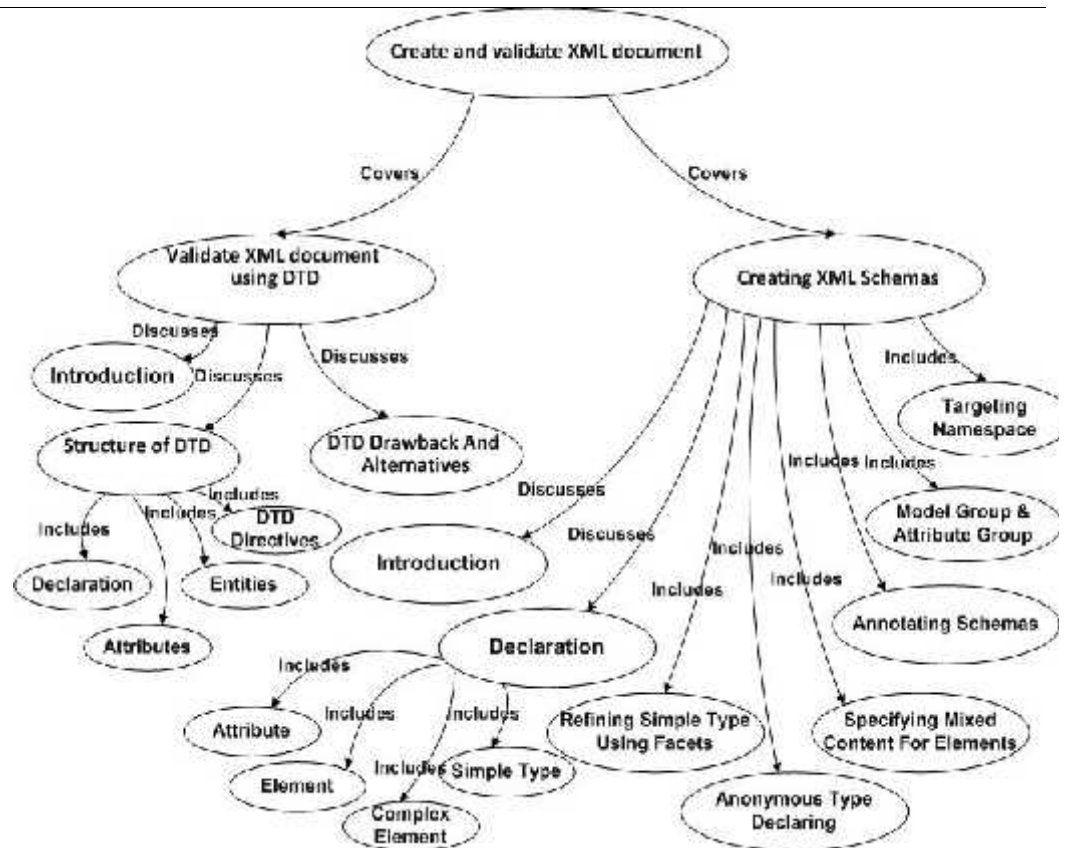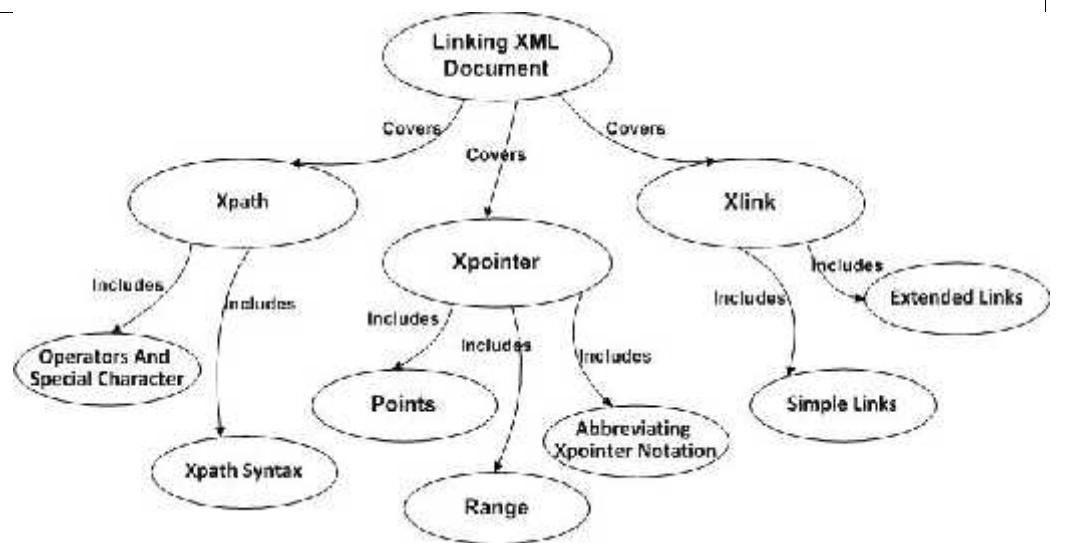|	It is a hierarchical / tree based representation of all topics covered under the course. This gives direct / indirect relationship /association among topics as well as subtopics.
	Course : Xtensible Markup Language
	Unit-1:
	Unit-2: <Title>

Diagram 1 (Unit-3):

Create and validate XML document

- Covers → Validate XML document using DTD
- Covers → Creating XML Schemas

Validate XML document using DTD:
- Discusses → Introduction
- Discusses → Structure of DTD
- Discusses → DTD Drawback And Alternatives

Structure of DTD:
- Includes → Declaration
- Includes → Attributes
- Includes → DTD Directives
- Includes → Entities

Creating XML Schemas:
- Discusses → Introduction
- Discusses → Declaration
- Includes → Targeting Namespace
- Includes → Model Group & Attribute Group
- Includes → Annotating Schemas
- Includes → Refining Simple Type Using Facets
- Includes → Specifying Mixed Content For Elements
- Includes → Anonymous Type Declaring

Declaration:
- Includes → Attribute
- Includes → Element
- Includes → Complex Element
- Includes → Simple Type

Unit-3: <Title>

Diagram 2 (Unit-4):

Linking XML Document

- Covers → Xpath
- Covers → Xpointer
- Covers → Xlink

Xpath:
- Includes → Operators And Special Character
- Includes → Xpath Syntax

Xpointer:
- Includes → Points
- Includes → Range
- Includes → Abbreviating Xpointer Notation

Xlink:
- Includes → Extended Links
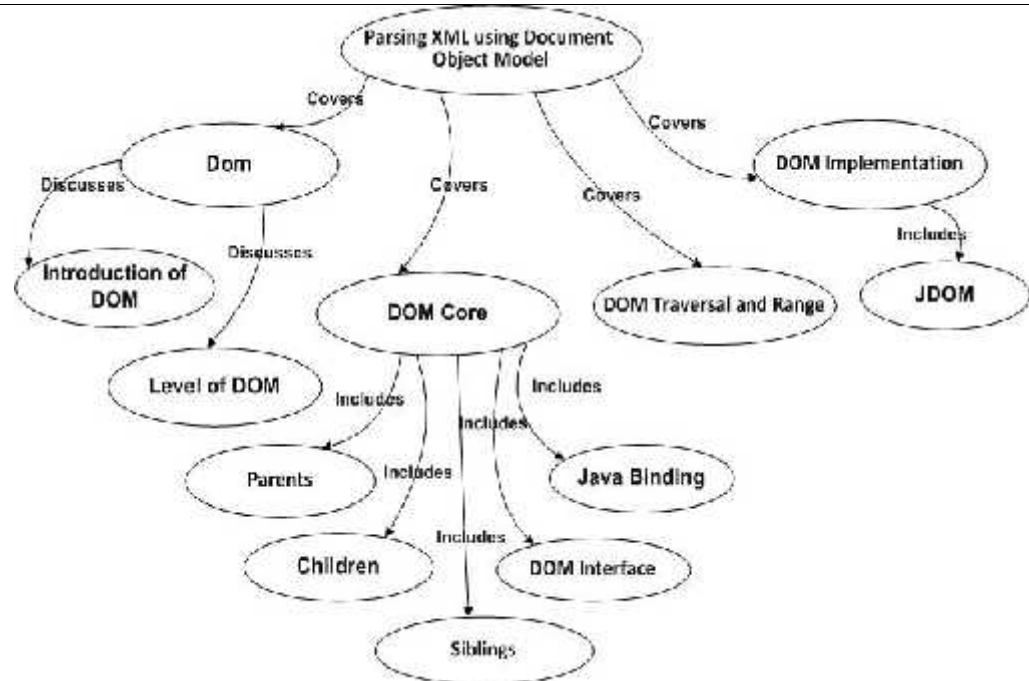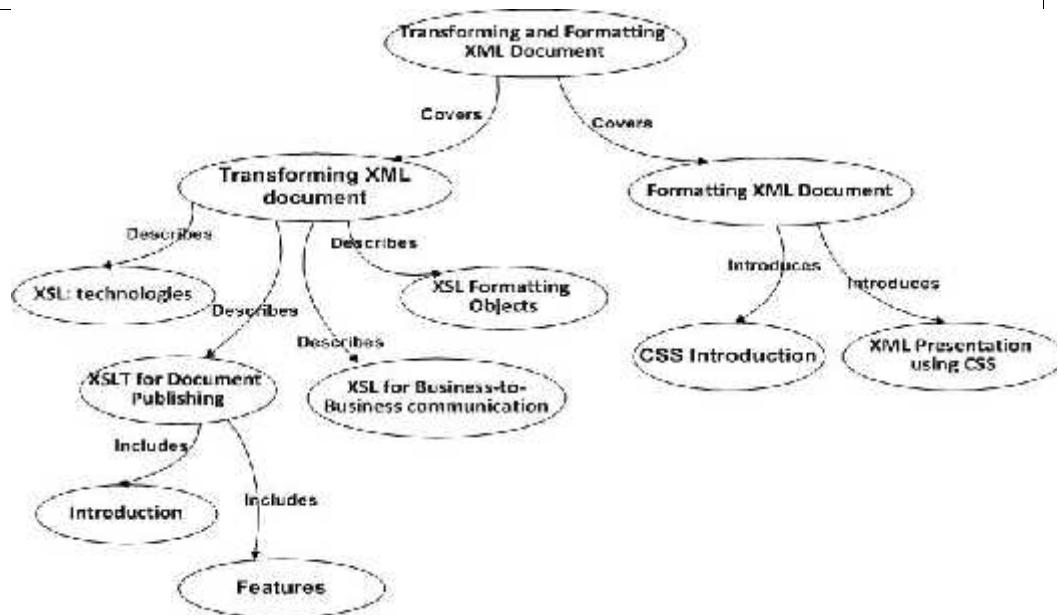- Includes → Simple Links
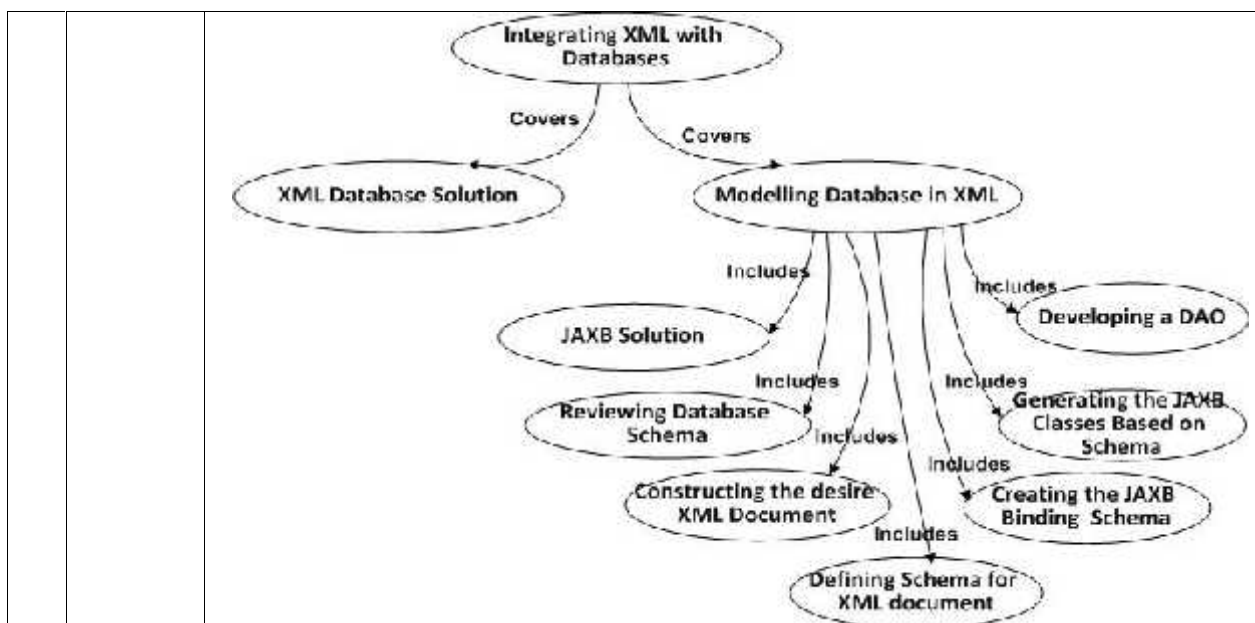
Unit-4: <Title>

Unit-5: <Title>

Unit-6: <Title>

Assessment:

The weightage of CIE and University examination shall be as per the University regulations.

Composition of CIE shall be

Assessment Code	Assessment Type	Duration of each	Occurrence	Each of marks	Weightage in CIE of 40 marks	Remarks
A1	Quiz	45 mins	2	20	4X2=8	Taken at the end of unit 2, and 5.
A2	Unit Test	45 mins.	3	25	4X3=12	Taken at the end of unit 3, and 6.
A3	Internal Examination	3 hours	1	50	15X1=15	-
A4	Programming Assignment	5 weeks	1	50	5X1=5	Based on unit 4, 5, and 6.

A4 Guideline	
❖	A teacher shall provide the programming assignment by the end of 8 weeks of semester.
❖	To do the assignment a team shall comprise of 2-4 members. For that 5 weeks shall be given. Then a team shall give presentation of typically 10-15 minutes followed by Question – Answer session of typically 10 minutes.
❖	Student shall receive up to 10% bonus marks of full marks based on best presentation and relevant extra features of app.
❖	Student shall receive up to 10% penalty of full marks on 2 days late submission, and zero marks if no submission

Course Assessment with Course Outcomes Mapping

Assessment	Course Outcomes						
	CO1	CO2	CO3	CO4	CO5	CO6	CO7
A1	✓	✓	✓		✓	✓	
A2		✓	✓	✓		✓	✓
A3	✓	✓	✓	✓	✓	✓	✓
A4				✓	✓	✓	✓

Question Bank:
Question Bank shall be prepared which consists of several types of questions like MCQ, Fill in the blanks, short type questions, long type questions, and practical assignment.

Academic Honesty:
Coursework is assumed to be accomplished individually (otherwise stated). Any portion of submission taken directly from anywhere (like statements in assignment/report etc.) without modification must be accompanied with the properly formatted reference giving credit to the author and to the source.

UFM:
❖ If two or more submitted answer papers are too similar for coincidence, a penalty shall be imposed that shall usually be the same for the student who did the original as for the one copying from it. ❖ Any ascertained fact of breaking institute policy shall be associated with one or all of the following: (i) zero marks for the work; (ii) report to the Course coordinator; (iii) report to the Director.

Discussion Group:
Students are welcome to post on the Course Discussion Board available on Department of comp View Course Webpage. It is responsibility of the concern subject teacher to maintain Discussion Board.

Attendance:
❖ Attendance means being present for the entire class session. Those arriving significant late or leaving significantly early without prior permission shall be counted as ABSENT for the entire class session. ❖ Concern teacher shall clearly state his/her attendance policies at the first class meeting.