GLS UNIVERSITY
Bachelor of Computer Applications (BCA)
(Core Course)
Semester-IV
0301406 PRACTICAL ON XML

1. Course Objective:

- To provide practical knowledge for validating data in XML.
- To acquire knowledge of functional programming based on XSLT
- Practical knowledge to transform XML format into other format.

2. Course Duration:

The course will have sessions which are divided into five modules. Each module consists of nine sessions of 60 minutes each and carries a weightage of 20%.

3. Course Contents:

Module No.	Topics	No. of Sessions	Weightage
I	**Practical's related to XML Basic Structure.**	09	20%
	• Create XML document for Student where it contains the following data: Student Name, Personal Info (Address, Birthdate, Gender, Mobile No, Address) ,Result(Total, Percentage, Grade)		
	• Create XML document for storing personal information about student where it contains the following data: Personal Info(Roll no, Name, Address, Mobile, DOB, Age, Qualification)		
	• Create XML document Book where it contains the following data: Order Detail(Order Number, Order Date, Order Amount, Item Price, Item Name, Quantity)		
II	**Practical's related to XML and DTD**	09	20%
	• Create an XML document email where it contain the following data: Email(message) as an element and Message(from, to, subject)as an attribute. Create a DTD for the following XML document.		
	• Create XML document for Student where it contains the following data: Student Name, Personal Info (Address, Birthdate, Gender, Mobile No, Address) , Result(Total, Percentage, Grade) Capture this information in an XML format. Create External DTD declaration for Student where		

	Grade element should have only one grade(Pass, First, Dist., Second, Fail)		
	• Create XML document for Student where it contains the following data: Student Name, Personal Info (Address, Birthdate, Gender, Mobile No, Address) ,Result(Total, Percentage, Grade) Capture this information in an XML format. Create External DTD declaration for Student where Gender element there is only two choices (Male or Female)		
	• Create XML document Book where it contains the following data: Order Detail(Order Number, Order Date, Order Amount, Item Price, Item Name, Quantity) Capture this information in an XML format. (Use Order Number as an attribute to Order Detail) Create DTD such that Order Date & Order Amount will come only once and Item Name, Item Price and Quantity should come at least one.		
	• Create XML document for storing personal information about student where it contains the following data: Personal Info(Roll no, Name, Address, Mobile, DOB, Age, Qualification) Capture this information in an XML format. (Use Roll no as an attribute to Personal Info) Create DTD such that Name, DOB, Age, will come only once and Qualification should come at least one.		
III	**Practical's related to XML and SCHEMA**	09	20%
	• Write an XML schema and show the corresponding XML document for the following: It should contain information about a credit card so that the credit card can be validated.		
	• Create XML document for storing personal information about Lunch where it contains the following data: Starter (juicer/soup), Main Course(Veg Lunch/non veg lunch) , Dessert(Ice-cream/Fruit Salad) Capture this information in an XML format. Write an XML schema where There should be options in each of the categories. There should be sequence with element		
	• Create XML document for Student where it contains the following data: Student Name, Personal Info (Address, Birthdate, Gender, Mobile No, Address) , Result(Total, Percentage, Grade)		

	Capture this information in an XML format. Write a schema that defines that size of Mobile No should not be greater than 10.		
	• Write a schema for a case where we want to keep the information about the children of employees. One employee can have at the most five children. A child can be a boy or a girl.		
	• Create an XML document template to capture information about salesperson where it contains the following data: Name, Business Info (Company, Department, Manager, Phone no, Email) Personal Info (Phone no, Address). Capture this information in an XML format. Write a schema that defines that Department value should be restricted by the following values only (Sales, Financial, Operation, Database)		
	• Write an XML document and corresponding XML schema for maintaining the employee number, name, designation, and salary.		
IV	**Practical's related to XML and XSLT**	09	20%
	• Write an XSL transformation for and XML document that displays the employee ID, name, salary of only those employee whose salary is greater than 5000. Create both XML and transformation document.		
	• Write an XSL transformation that sorts the name of Students in ascending order (Roll no, name, College Name, Birthdate, Mobile No and Gender. Create both XML and transformation document.		
	• Write an XSLT for XML document that captures information of a batsman name, runs, and wickets and display the player details only if a player has scored more than 1000 runs and has also taken more than 100 wickets. Create both XML and transformation document.		
	• Write an XSLT which would display the stock (name, price) followed by the price in the sorted order from highest to lowest Create both XML and transformation document.		
	• Write an XSL transformation for XML document that captures information of a badminton player as name, score, no_of_matches etc. Only those name should be displayed whose no_of_matches is greater than or equal to create both XML and transformation document.		

	• Write an XSL transformation that sorts the name of Customer in descending order. (name, age, address, state, phone) Create both XML and transformation document.		
	• Write an XSL transformation that displays the roll no, name, marks and grade of students. Grades must be assigned as per below criteria: above 80- Distinction, 70 to 80 First, 60 o 70 Second, 50 to 60 Third, below 50 Fail Create both XML and transformation document.		
V	**Practical's related to XML, XSLT, SCHEMA and DTD**	09	20%
	• Create XML document for Student where it contains the following data: roll no , Name, Class, Personal Info (Address, Birthdate, Gender, Mobile No, Address), Result(Total, Percentage, Grade) Capture this information in an XML format. Create External DTD declaration for Student where o Gender element can have only two sub element (Male or Female). o Mobile No element could come any number of times. o Make Birthdate as an attribute of Personal Info. o roll no , name element should come only once		
	• Create XML document Order where it contains the following data: Order Detail (Order Number, Order Date (Day, Month, Year), Item Price, Item Name, Quantity) Total Order (No of items, Total Amount) Capture this information in an XML format. Create External DTD declaration for Order where o Use Order Number as an attribute to Order Detail o Order number attribute there would only two choice (1 or 2). o Item Name, Item Price and Quantity should come at least one. o Use Entity in any of the element.		
	• Create an XML document template to capture information about salesperson where it contains the following data: Name, Business Info (Company, Department, Manager, Phone no, Email) Personal Info (Phone no, Address). Capture this information in an XML		

	format. Write a schema that defines that o Name element should appear more than once. o Every sub-element of Personal Info elements should be written.		
	• Create XML document for storing personal information about Employee where it contains the following data: Personal Info(Name, Address, Mobile, DOB, Age, Qualification) Employee Info (emp_id, designation, salary, DOJ) Capture this information in an XML format. Write a schema that defines that o Name element should appear only once. o Sub-element of Personal Info elements can be in different order. o Only two choices should be there in designation either manager or branch manager.		
	• Create XML document Employee where it contains the following data: Employee info(name, DOB, address, mobile no, emp id, salary, DOJ) Capture this information in an XML format. Write an XSL transformation for and XML document that displays o emp_id in a sorted order o emp_id, name, salary of only those employee whose salary is greater than 5000.		
	• Create XML document for storing personal information about batsman where it contains the following data: Cricket (name, runs, wickets, average, performance, no_of_matches) Capture this information in an XML format. Write an XSL transformation for XML document that captures o Only those name should be displayed whose no_of_matches is greater than or equal to 15 o Name should be in ascending order.		

4. Teaching Methods:

The following pedagogical tools will be used to teach this course:

1. Lectures and Discussions
2. Assignments and Presentations
3. Videos and e-learning

5. Evaluation:

The students will be evaluated on a continuous basis and broadly follow the scheme given below:

1.	Assignments / Presentations/ Quizzes, etc.	20% (Internal Assessment)
2.	Internal Examination	30%(Internal Assessment)
3.	External Examination	50% (External Assessment)

6. Basic Text Books:

Sr. No	Author/s	Name of the book	Publisher	Edition
T1	Atul Kahate	XML & Related Technologies	Pearson	2009

7. Reference Books:

Sr. No	Author/s	Name of the book	Publisher	Edition
R1	Fabio Arciniegas	XML Developer's Guide	Tata McGraw Hill	Latest

8. List of Journals / Periodicals / Magazines / Newspapers etc.:

Sr. No	Link
1	http://nptel.ac.in/courses/106106093/39
2	http://nptel.ac.in/courses/106106093/40
3	http://nptel.ac.in/courses/106106093/41
4	http://www.nptelvideos.com/video.php?id=723
5	https://www.mooc-list.com/course/introducci%C3%B3n-xml-unimooc?static=true
6	https://www.youtube.com/watch?v=-oLlHA0Uy-s
7	https://www.youtube.com/watch?v=itRkLa2kq6w.
8	https://www.youtube.com/watch?v=hVu9ztO4qvs
9	https://www.youtube.com/watch?v=nyk8QO08grM

9. Session Plan:

Session No.	Topics/Chapters
1-9	Practical’s related to XML Basic Structure.
10-18	Practical’s related to XML and DTD: Types of DTD, Comments, Element Type Declaration, Attribute Declaration and Conditional Sections
19-27	Practical’s related to XML and SCHEMA: XML Schema Type System, Grouping of Data, Deriving Types and Attributes
28-36	Practical’s related to XML and XSLT: XML-to -HTML Transformation, Looping, Conditional Processing, Numbers and Sorting
37-45	Practical’s related to XML, XSLT, SCHEMA and DTD

10. Learning Outcomes:

Upon successful completion of the course, students will be able to:

- Describe structure of XML document
- Create well-formed and valid XML documents.
- Validate the data using DTD and Schema.
- Plan and implement XML based applications, and to apply functional programming in document conversion.