Z603: XML Workshop

Instructor

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Office Hours: By appointment

Extensible Markup Language (XML) is a markup language used to describe the content and structure of documents. It is a device-independent and system-independent method of storing and processing texts in electronic form and is also the interchange and communication format used by many applications on the World Wide Web. XML allows users to define their own tags and attributes that can be easily processed and displayed across platforms. It incorporates ways of handling styles (Extensible StyleSheet Language, XSL), schemas (DTD or XML Schema), and search (XQuery & XPath). It has become one of the most widely adopted W3C standards and has been applied in various domains in academia and industry.

Course

XML Workshop
Time: 9:30 am - 3:45 pm
Dates: May 13, 14, & 15
Room: LI002
Session: Summer I, 2016
Number: 14780

This 1.5 credit workshop will provide you with an intensive, hands - on introduction to the use of XML to represent documents on the Web. You should also gain a conceptual understanding of the structure, strengths, and weaknesses of XML. The content of this workshop covers XML, DTD, XML Schema, XPath, XQuery, and XSLT

Upon completion of this course, students will:

- Become familiar with a range of topics related to XML, including validation schemas, transformation tools, and query methods and understand their use and limitation.
- Be able to query XML documents using XPath and XQuery,
- Be able to map XML documents using DTD or XML Schema validation,

- Be able to transform an XML document into HTML using XSLT,
- Be able to develop their own XML database.

Course Syllabus

Course Organization & Schedule

This course contains six weekly sessions, all which will include lecture, step-by-step demonstrations, and lab time. The following table outlines the schedule for this course.

Session	Topic
Session 1 (*May 13, 9:30-12:15*)	**XML Syntax (https://iu.instructure.com/courses/1543751/pages/document-type-definitions-dtds-validation)**
Session 2 (*May 13, 1-3:45*)	**DTD Validation (https://iu.instructure.com/courses/1543751/pages/document-type-definitions-dtds-validation)**
Session 3 (*May 14, 9:30-12:15*)	**XML Schema Validation (https://iu.instructure.com/courses/1543751/pages/xml-schema-validation)**
Session 4 (*May 14, 1-3:45*)	**Querying XML with XPath and XQuery (https://iu.instructure.com/courses/1543751/pages/querying-xml)**
Session 5 (*May 15, 9:30-12:15*)	**Transforming XML to HTML with XSLT (https://iu.instructure.com/courses/1543751/pages/transforming-xml)**
Session 6 (*May 15, 1-3:34*)	Final Presentations

Readings/Resources

This course does not require a text book. Sections from various XML textbooks and online videos will be made available as reference on the CANVAS site in the Modules section according to session. Students are not required to read the readings they are provided for reference only. All readings are drawn from the following resources:

- **XML in a nutshell:A desktop quick reference** 3rd Edition, by Elliotte Rusty Harold & W. Scott Means (2004)
- **Beginning XML** 5th Edition, by Joe Fawcett (2012)
- **Sams Teach Yourself XML** 2nd Edition, by Devan Shepherd (2001)
- **XQuery** by Prascilla Walmsley (2007)
- **Learning XML** by Erik T. Ray (2001)
- **Real World XML** by Steven Holzner (2003)

Students may also use the **XML Essential Training with Joe Marini** video at *Lynda.com* and YouTube videos to supplement or replace readings. To connect to the *Lynda.com* videos (denoted with an *), students must first authenticate via the **IU link to *Lynda.com*** ⤷ **(https://shib.lynda.com/Shibboleth.sso/InCommon? providerId=urn:mace:incommon:iu.edu&target=https://shib.lynda.com/InCommon)** , before clicking the videos links above. Videos not denoted with an * are YouTube videos and do not require authentication.

The following online resources may also be used for reference with XML questions.

- **W3C Schools: XML Tutorial** ⤷ **(http://www.w3schools.com/xml)**
- **XML.com: A Technical Introduction to XML** ⤷ **(http://www.xml.com/pub/a/98/10/guide0.html)**
- **Mulberry Technologies: XML Quick Reference Cards** ⤷ **(http://www.mulberrytech.com/quickref/)**
- **XML in One Page** ⤷ **(http://www.xml.su/)**
- **Wikipedia: XML** ⤷ **(http://en.wikipedia.org/wiki/XML)**

Software

To create, edit, and query XML documents we will use the software Oxygen XML Editor from Syncro Soft SRL. This software is loaded on the machines in ILS 002 and can be downloaded for out-of-class use from IUWare at **https://iuware.iu.edu/Windows/Title/1732** ⤷ **(https://iuware.iu.edu/Windows/Title/1732)**

Assignments & Grading

The final grade for this course will be made up of in-class exercises (75%), a final project/presentation (15%), and class participation (10%). Grades will be posted via the *CANVAS* Gradebook Section.

Lab Exercises will be given out during lab session and will be completed in class. They may be completed in paired groups and will be turned in at the end of the lab session in hard copy. Assignments will not be accepted after the answers have been discussed in class at the start of the next session.

Final Project will be group assignment. You may have 2-3 people per group. The assignment is composed of a final presentation and hard copies of the schema and XML file. Basic requirements of the project include the following:

- Create an XML schema for desired data set,
- Model at least 5 data items in xml using your schema,
- Demonstrate at least 3 queries of the data (including at least 1 in XQuery), and
- Transform your data using XSLT for presentation on the web.

The project will be graded based on the completeness of the schema, variety of data, difficulty and usefulness of queries, and readability and interest of presentation. **Your presentation** should include a power point (or similar) presentation describing your data and schema, demonstration of your queries, and presentation of your data via XSLT.

Assignment Submission

All lab exercises will be submitted in class in hard copy. Work turned after that time will be penalized at the discretion of the instructor. To receive a passing grade in this course, you must turn in all lab exercises and complete the final project. You cannot pass this course without doing all of the assigned work however, turning in all of the work is not a guarantee that you will pass the course. If you cannot submit an assignment or cannot deliver a presentation on the date it is due, it is your responsibility to discuss your situation with the instructor, preferably in advance. Assignments and final grades will be assigned based on the departmental grading guidelines.

Course Policies

Incompletes: Each student is expected to complete all coursework by end of each session. A grade of incomplete will be assigned only when exceptional circumstances warrant.

Academic Dishonesty: There is extensive documentation and discussion of this issue in the Indiana University Code of Student Ethics. Of particular relevance is the following section on plagiarism.

> **Plagiarism:** A student must not adopt or reproduce ideas, words, or statements of another person without appropriate acknowledgement. A student must give credit to the originality of others and acknowledge an indebtedness whenever he or she does any of the following:
>
> 1. A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgement.
> 2. A student must give credit to the originality of others and acknowledge indebtedness whenever.
>   a. Directly quoting another person's actual words, whether oral or written;
>   b. Using another person's ideas, opinions, or theories;
>   c. Paraphrasing the words, ideas, opinions , or theories or others whether oral or written;

d. Borrowing facts, statistics, or illustrative material; or

e. Offering materials assembled or collected by others in the form of projects or collections without acknowledgment.

The Student Code of Conduct can be found at:
http://www.iu.edu/~code/code/responsibilities/academic/index.shtml ⇥
(http://www.iu.edu/~code/code/responsibilities/academic/index.shtml)

Indiana University and the Department of Information and Library Science policies on academic dishonesty will be followed. Students found to be engaging in plagiarism, cheating and other types of dishonesty could receive an **F** for the course.

Attendance: Given that there are only 3 sessions in this course, it is expected you will attend all class sessions. If you cannot attend class, you must notify the instructor in advance. Please notify the instructor at the beginning of the course if you know you will not be able to attend a given session because of prior commitments or religious observation. Absences will only factor into the participation part of your final grade.

 Personal Technologies: You are welcome to bring laptops to class and use them instead of the computers in the lab if that is more comfortable for you. However, it is not appropriate to surf the web, check email, or otherwise perform non-course related activities during class on either you own computer or lab computers. This also applies to the use of cell phones, tablets or other personal technologies. Students engaged in either email or texting will be asked to either stop or leave the class session.

Student with Disabilities: Students who believe the they have a disability that requires an accommodation for full participation in this course are encouraged to talk with the instructor and/or contact IU Disability Services for Students at **http://studentaffairs.iub.edu/dss/** ⇥
(http://studentaffairs.iub.edu/dss/)

Course Summary:

Date	Details	Due
	📝 **1_XML Syntax Exercise** **(https://iu.instructure.com/courses/1543751/assignments/6260927)**	
	📝 **2_DTD Validation Exercise** **(https://iu.instructure.com/courses/1543751/assignments/6260734)**	
	📝 **3_XML Schema Validation Exercise** **(https://iu.instructure.com/courses/1543751/assignments/6260737)**	

Date	Details	Due
	📝 **4_XPath Exercise** **(https://iu.instructure.com/courses/1543751/assignments/6260738)**	
	📝 **5_XSLT Exercise** **(https://iu.instructure.com/courses/1543751/assignments/6260739)**	
	📝 **Class Participation** **(https://iu.instructure.com/courses/1543751/assignments/6260733)**	
	📝 **Final Project** **(https://iu.instructure.com/courses/1543751/assignments/6260735)**	