

Course Syllabus

University of Wisconsin – Milwaukee (UWM)

School of Information Studies (SOIS)

Course Title

XML for Libraries

Semester

Fall 2017

Course and Section Number

INFOST 780 – 201

Meeting Times and Location

Online

Instructor

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Online Office Hours / Lab Sessions

Every Tuesday evening, I will be holding an Office Hours / Lab Session using the GoToMeeting Platform. I encourage you to drop by to review solutions to recent Coding Assignments, to ask a question, to get help with your Coding Assignments, to get help with your Final Project, or just to say hello. Please use a headset when joining this session. Note that individual meetings may be arranged on other days and at other times. To arrange such a meeting, contact me via email. You may join the GoToMeeting session using [this link](#).

Please note that participation in Online Office Hours / Lab Sessions is optional. For those who are unable to attend, I will post links to recordings of these sessions to our Weekly Schedule on the following day.

General Description

This is an introduction to XML technologies and tools with a special emphasis on the XML applications of greatest interest to the LIS community. Students will learn to author XML documents, to design content models for XML applications, to author W3C XML Schemas, and to validate XML documents using schemas. Students will learn to design and code XML transformations using XSLT and XPath to create Web documents using XHTML and CSS or to create high quality print documents using XSL-FO. Finally, students will learn to use XQuery as a means of exploring a collection of XML documents. Students will be introduced to a variety of XML applications of interest to the LIS community and they will execute a proof of concept project based upon one of these XML applications.

Required Texts

Harold, E. R., & Means, W. S. (2004) *XML in a Nutshell*, 3rd edition. Sebastopol, CA : O'Reilly. ISBN: 9780596007645

Kay, M. (2008) *XSLT 2.0 and XPath 2.0 Programmer's Reference* Indianapolis, IN : Wiley Pub., ISBN: 9780470192740

Cole, T. W., & Han, M. K. (2013). *XML for catalogers and metadata librarians*. Santa Barbara, California : Libraries Unlimited.

Optional Texts and Other Resources

Baca, M. (Ed.). (2008). *Introduction to metadata* (Online Edition, Version 3.0 ed.). Getty Research Institute. Free e-book available through [The J. Paul Getty Trust](#).

Miller, D. R., & Clarke, K. S. (2004). *Putting XML to work in the library: Tools for improving access and management*. Chicago: American Library Association. ISBN: 0838908632.

Software

Over the course of the semester, you will be expected to do a substantial amount of coding using XML, XHTML, CSS, W3C XML Schema, XSLT, and XSL-FO. The primary tool for this work will be Oxygen XML Editor. SOIS has secured licenses for this software to be used by students in classes like ours. You will be expected to install the Oxygen XML Editor on your own computer. I have created software installation tutorial videos for both Windows 10 and macOS. Links to these videos and other supporting material will be available in the appropriate week of our Weekly Schedule.

Later in the semester, when we begin working with XSL-FO, we will be using the RenderX XEP Engine. We will be installing this software as a plugin to the Oxygen XML Editor to provide high quality print document formatting capability. I have arranged with RenderX for students in this class to receive licenses for this software that will work during the class. You will be expected to install the RenderX XEP Engine on your own computer. I have created software installation tutorial videos for both Windows 10 and macOS. Links to these videos and other supporting material will be available in the appropriate week of our Weekly Schedule.

While both of the products listed above have Linux implementations, there will be significantly less support for installing these products on Linux and for debugging problems. Please contact me before you make the decision to use a Linux computer for your coding work for this course.

Course Topics

- What is XML?
- How is XML Used?
- Designing and Coding XML Documents for Data Interchange
- The Use of XML in Libraries
- Designing and Coding XML Documents for Publishing
- Encoded Archival Description (EAD)
- XML Schemas for Data Interchange
- EPUB
- XML Schemas for Publishing
- Metadata Object Description Schema (MODS)

- Using Entities
- Using XInclude
- Text Encoding Initiative (TEI)
- W3C XML Schemas for Data Interchange
- Metadata Encoding & Transmission Standard (METS)
- W3C XML Schemas for Publishing
- DocBook
- Creating W3C XML Schemas that Declare a Target Namespaces
- W3C XML Schema Language 1.1 Extensions
- MARCXML
- XSLT for Data Interchange
- Darwin Information Typing Architecture (DITA)
- XSLT for Publishing
- Categories for the Description of Works of Art (CDWA)
- Creating High Quality Print Documents with XSL-FO
- The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)
- Exploring XQuery

Course Outcomes

After completing this course, students should be able to:

- Author an XML content document that is valid and well-formed.
- Design and code an XML document schema using the W3C XML Schema language.
- Validate content in XML documents with W3C XML Schemas.
- Design and code XML transformation programs using XSLT and XPath.
- Generate well-formed Web documents from XML content using XSLT, XHTML and CSS.
- Generate high-quality print documents from XML content using XSLT and XSL-FO.
- Analyze a collection of XML content documents using XQuery.
- Identify significant XML applications of interest to the LIS community.
- Plan and conduct a proof-of-concept project using XML technologies and an XML application of interest to the LIS community.

Instructional Methods

- Reading
- Recorded lectures and tutorials
- Text-based online discussion via D2L forums
- Voice-based online discussion via GoToMeeting sessions
- Planning and execution of an individual proof-of-concept project

Course Schedule

The schedule for this course will be available via our Weekly Schedule at:

http://courseinfo.ligent.net/2017fa/uwm/infost780_201/index.html

The course schedule is always subject to reasonable change to account for changes in circumstance and to correct errors. When I make changes to the schedule, I will announce them via D2L Announcements and email.

Work Required of Students

Estimated Workload

I expect you to invest approximately 10 to 15 hours of effort per week on this course. The exact number of hours will vary from student to student based upon your speed and prior experience.

Course Elements:

1. Readings

Required readings will be assigned from the resources listed above and from other resources that will be identified in the schedule. Generally, readings are chosen to accompany any lecture video or tutorial video provided for the week. So, you should expect to complete the readings before playing the videos.

Optional readings will be assigned from time to time. These will typically represent alternate expressions of the same material, or interesting supplementary topics.

2. Videos

I will be providing a series of recorded video lectures and tutorials throughout the course. Generally, you can expect lectures to supplement (rather than repeat) the content of the readings. Tutorials will typically show a skill being practiced using the Oxygen XML Editor software. Frequently, you will be assigned a parallel coding assignment in the same week that can be accomplished using the approach demonstrated in the video.

3. Coding Assignments

There will be weekly Coding Assignments. As mentioned above, coding assignments will often be paired with tutorial videos. These should allow you to complete your Coding Assignment using the same general approach that has been demonstrated in the video.

A D2L dropbox will be provided for each assignment. Instructions for each Coding Assignment and a grading rubric will be published in the Weekly Schedule.

Solutions to the Coding Assignments will be reviewed in the next Online Office Hours / Lab Session. One or two students will be asked to present their work and we will discuss it (constructively and supportively). Then, I will present my version of the assignment solution (never perfect) and we will discuss that as well. The real learning comes from the combination of having tried the skill and the subsequent discussion. Those who have really done the work before the week-ending deadline will get that benefit. Those who wait and do the work later will get a greatly reduced benefit. Having seen our solutions, they will miss out on the benefit of having tackled one of these problems from scratch.

A major goal for this course is to build your proficiency in self-evaluation of your work. To build this skill, I will expect you to be able to estimate your grade on each Coding Assignment. After each Coding Assignment, we will review solutions during the Online Office Hours / Lab Session. Further, I will publish a copy of my solution on our D2L site. These published solutions and solution discussions will serve as your primary feedback for the Coding Assignment.

As secondary feedback, your Coding Assignment submissions will be graded and commented upon. Feedback will be published to the D2L assignment submission activity. Due to the number of classes that I am teaching this semester, you can expect to get grading and comment feedback approximately three weeks after the due date for the assignment.

The grading rubric for Coding Assignments has been designed to promote two important behaviors:

- Submitting your work in a properly named and formatted file. This helps substantially with grading workflow.
- Submitting your work by the week-ending deadline. This allows you to participate fully in discussions of exercise solutions during Online Office Hours / Lab Sessions.

While separate grading rubric and assignment submission instructions documents will be published, the following is a summary of the grading rubric features:

- 10 points will be awarded for submitting a single, properly named and properly formatted file to the proper D2L assignment submission activity.
- A minimum of 75 points will be awarded for submissions that are submitted on time, and that demonstrate a good faith effort on all parts of the assignment. Late submissions will be awarded 74 points or less in this category.

The implication of this grading rubric is that you can expect a score of 85 or more on all assignments that meet both of these criteria.

4. Participation

- a. Each student is expected to contribute 4 significant (200 – 300 word) posts to the discussion forums for the class. These should include:
 - 1) 1 post to the *Introduce Yourself Forum* during Week 1 of the semester.
 - 2) You are expected to make a total of 3 posts to the *Final Project Forum* during the semester. Each of these posts should explore an XML application that you are considering as the basis of your final project. I have assigned readings during the early weeks of the course to help you better understand XML applications of interest to practitioners in the LIS field. You can choose from this list of XML applications or you may substitute another XML application that interests you. Please feel free to post whenever you are ready to discuss a candidate XML application that you are considering for your project. You do not need to wait until the week in which that XML application has been assigned in the readings. I am expecting you to do enough of the weekly readings about these applications to gain a general appreciation of them. Nevertheless, I am expecting you to pick just 3 of these topics to explore in sufficient depth that you could write a significant (200 – 300 word) post.
- b. You are also expected to read all of the posts of other students made in all of the discussion forums and respond with short posts when appropriate.
- c. Every Tuesday evening, I will be holding an Office Hours / Lab Session using the GoToMeeting Platform. I encourage you to drop by to review solutions to recent Coding Assignments, to ask a question, to get help with your Coding Assignments, to get help with your Final Project, or just to say hello. Please use a headset when joining this session. Note that individual meetings may be arranged on other days and at other

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- d. Participation grades will be based upon the number of participation points earned during the semester. These are the activities through which you can earn participation points:

Activity	Points Earned
1 long-form primary post to the <i>Introduce Yourself</i> or <i>Final Project</i> forms.	3
1 post to the <i>Open Discussion</i> forum.	1
1 speaking contribution during Online Office Hours / Lab Session	1
1 presentation of your Coding Assignment solution during Online Office Hours / Lab Session	5

5. Final Project

You will be expected to plan and conduct a proof-of-concept project using XML technology. Detailed instructions and a grading rubric for the Final Project will be published separately. The following are highlights from those requirements:

- **Projects must be based upon a standard XML schema rather than a schema that you design from scratch.** Standard schemas might include those that are part of any of the XML applications of interest to the LIS community that we cover in this course (TEI, DocBook, EAD, MODS, METS, DITA, etc.).
- You will be expected to find enough content to populate your XML application and to mark up that content using the chosen standard XML schema. You may author the content yourself. Or, you may choose content that is available in the public domain through some source such as Project Gutenberg.
- You will be expected to identify a standard XML-based means of publishing the content or to create a custom means of publishing the content. A standard means of publishing the content might amount to identifying standard XSLT transformations that are available in the Oxygen XML Editor for DocBook documents. A custom means of publishing content might amount to custom XSLT stylesheets that you create from scratch.
- The deliverables of the project will include marked-up content, code, and a written Project Report. Code will be expected to be testable. As part of the Project Report, you must provide good instructions for testing your code. When grading your project, I plan to run these tests to make sure that they perform as expected.

The detailed instructions and grading rubric for the Final Project will be published separately.

Grading

Basis for Determining Grade

The various components of student and group work will contribute to the final grade based upon the following percentages:

- Coding Assignments 40%
- Participation 10%
- Final Project 50%
 - Project Code (35%)
 - Project Report (15%)

Letter grades will be determined as follows:

- A 93 - 100%;
- A- 90 - 92%;

- B+ 87 - 89%;
- B 83 - 86%;
- B- 80 - 82%;
- C+ 77 - 79%;
- C 73 - 76%;
- C- 70 - 72%;
- D+ 67 - 69%;
- D 63 - 66%;
- D- 60 - 62%;
- F 0 - 59%;

UWM AND SOIS ACADEMIC POLICIES

The following links contain university policies affecting all SOIS students. Many of the links below may be accessed through a PDF-document maintained by the Secretary of the University: <http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf>. Undergraduates may also find the ***Panther Planner and Undergraduate Student Handbook*** useful (<http://uwm.edu/studenthandbook/student-handbook/>).

Students With Disabilities

If you will need accommodations in order to meet any of the requirements of a course, please contact the instructor as soon as possible. Students with disabilities are responsible to communicate directly with the instructor to ensure special accommodation in a timely manner. There is comprehensive coverage of issues related to disabilities at the Student Accessibility Center (<http://www4.uwm.edu/sac/>), important components of which are expressed here: <http://www.uwm.edu/Dept/DSAD/SAC/SACltr.pdf>.

Religious Observances

Students' sincerely held religious beliefs must be reasonably accommodated with respect to all examinations and other academic requirements, according to the following policy: <http://www4.uwm.edu/secu/docs/other/S1.5.htm>. Please notify your instructor within the first three weeks of the Fall or Spring Term (first week of shorter-term or Summer courses) of any specific days or dates on which you request relief from an examination or academic requirement for religious observances.

Students Called to Active Military Duty

UWM has several policies that accommodate students who must temporarily lay aside their educational pursuits when called to active duty in the military (see <http://www4.uwm.edu/academics/military.cfm>), including provisions for refunds, readmission, grading, and other situations.

Incompletes

A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantial cause beyond the student's control, has been unable to take or complete the final examination or some limited amount of other term work. An incomplete is not given unless the student proves to the instructor that s/he was prevented from completing course requirements for just cause as indicated above (<http://www4.uwm.edu/secu/docs/other/S31.pdf>).

Discriminatory Conduct (such as sexual harassment)

UWM and SOIS are committed to building and maintaining a campus environment that recognizes the inherent worth and dignity of every person, fosters tolerance, sensitivity, understanding, and mutual respect, and encourages the members of its community to strive to reach their full potential. The UWM policy statement (<http://www4.uwm.edu/secu/docs/other/S47.pdf>) summarizes and defines situations that constitute discriminatory conduct. If you have questions, please contact an appropriate SOIS administrator.

Academic Misconduct

Cheating on exams and plagiarism are violations of the academic honor code and carry severe sanctions, ranging from a failing grade for a course or assignment to expulsion from the University. See the following document (<http://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/>) or contact the SOIS Investigating Officer (currently the Associate Dean) for more information.

Complaints

Students may direct complaints to the SOIS Dean or Associate Dean. If the complaint allegedly violates a specific university policy, it may be directed to the appropriate university office responsible for enforcing the policy.

Grade Appeal Procedures

A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow SOIS appeal procedures for undergraduates as seen here:

(<http://www4.uwm.edu/sois/programs/graduate/mlis/policies/appeals.cfm>) In the case of a graduate student, the Graduate School, (http://www4.uwm.edu/sois/programs/undergraduate/ug_appeals.cfm).

Last Revised

2017-09-02