1. Course Description

Metadata Architectures and Applications (INLS 720) explores the role metadata in our evolving information ecosystem(s); an emphasis placed on metadata the digital environment. The course examines the development and use of metadata schemes in distinct information communities (e.g., digital libraries, museums, and archives; scientific data centers; governmental organizations; educational and learning environments; commerce enterprises; and personal information systems—to name a few). Among selected topics covered are interoperability, metadata models, ontologies, metadata for the Semantic Web, metadata generation, metadata and search engines, metadata quality, and the evaluation of metadata schemas and tools. The course introduces enabling technologies used to create machine understandable metadata (XML, MARC, and RDF). In class exercises and independent/group assignments provide practical experience.

2. Course Objectives

- To understand the role of metadata for organizing resources, and for facilitating resource discovery, particularly in the digital environment.
- To understand the range of functions metadata supports, including resource preservation, management, authentication, use, and other activities.
- To become aware of an array of metadata standards, and understand the different applications and functions for these standards.
- To acquire basic skills for developing and implementing a metadata scheme.
- To learn how to evaluate metadata and metadata applications.
- To consider a theoretical context for metadata and the future of metadata.

3. Class Announcements

Sakai Announcements: I will primarily use the Sakai announcement option for distributing class updates and resource news (e.g., syllabus/schedule and assignment modifications and updates;
resource links, reports, information on publications and events). Please check the announcement board weekly.

4. Assignments and Evaluation

Course grades are determined as follows:
- Class participation: 20%
- Assignments: 50%
- Final project, paper, or poster: 30%

4.1 Class Participation [20 points]
Metadata is a critical component in the development, implementation, and function of any information system. The topic of metadata has become increasingly important as information professionals and other diverse communities put forth efforts to organize and facilitate access to digital resources. Our class sessions will provide opportunities for class discussion. As members of the class, you are encouraged to ask questions and initiate and participate in discussions. My philosophy is that discussion is integral to the learning process, can lead to an exciting session (perhaps more exciting than the one planned!), and can enrich our time together. While I encourage class discussion, there may be occasions when I have to limit a discussion in order to cover essential material.

4.2 Assignments [50 points total]
Four assignments will be given to help you explore practical applications of metadata and to consider theoretical issues to a degree. A handout or e-mail will accompany each assignment. Please do not work on any assignment until we have discussed it in class. Assignments are listed directly below and are coordinated with the topics covered on the course schedule. Please upload your completed assignments to Sakai.
- Assignment 1: Dublin Core / MARC Cataloging Assignment (Assigned session 2, due session 6, September 26) [10 points]
- Assignment 2: Issues Assignment (Assigned session 3, due corresponding session) [15 points]
- Assignment 3: Scheme / Application Use / Evaluation Assignment (Assigned session 11, due Monday, Nov. 19) [15 points]
- Assignment 4: Meta Tag Evaluation/Research Question Assignment (Assigned session 12, due session 14) [10 points].

4.3 Final Project (Assigned session 6; reviewed session 7; a one page abstract/or/outline is due session 9—so I can provide feedback; due Monday, December 10, by 12:00 noon) [30 points]
5. Attendance and Preparedness

I will come to class prepared, and I expect the same of you. I understand that you may need to miss class due to certain circumstances. If you are absent, I expect you to coordinate with a class colleague to review the session and collect handouts; and please contact me to review material covered in class if you have any questions.

6. Readings

Please complete all readings prior to the class meeting for which they are assigned. Most readings are available via the Sakai site for the course or the web as a direct link on the course syllabus. If a link is broken, please let me know immediately. Several readings are accessible via UNC’s E-journals: http://www.lib.unc.edu/index.html?searchtab=ejournals. Readings that include a call number are available from the SILS library's reserve service.

≈ A resource list is found below the course schedule.

7. Honor Code

Collaboration, discussion, and seeking assistance from other students are encouraged in this class and are not inconsistent with the Honor Code. In the case of written work, all words drawn from others must be attributed appropriately.

8. Grading

H 100-95%, P+ 94-90%, P 89-85%, P- 84-80%, L 79-70%, F < 69%

9. Late Work

The final assignment must be turned in on time to avoid an incomplete in the course. Extensions on other assignments will be given only for truly compelling reasons.

10. Syllabus Status

While the syllabus provides the framework for this course, it’s likely that some restructuring will take place throughout the term. Metadata is a dynamic and growing topic, and a guest lecturer, a newsworthy development, or other events related to this class may side track us from the intended schedule.
<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topics</th>
<th>Reading Assignment</th>
<th>Notes</th>
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| 4 & 5 Sept. 12 & Sept. 19 | Historical highlights continued; Standards: ISBD, MARC, IAFA, Dublin Core; Metadata needs in different communities; Metadata functions | Guests for September 12, 2012 Angela Murillo, PhD student, DigCCurr Project Manager and Carolina Digital Curation Doctoral Fellow, DataOne and ESIP intern, and much more.

**Topic:** metadata registries. Items on Sakai under resources, folder called “Registries-Murillo.”

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**Guests for September 19, 2012**

- Richard Marciano, Professor and Director @ Sustainable Archives & Leveraging Technologies group (SALT)

**Readings or links to explore will-be-suggested in the next few days. Please check Sakia early next week before class.**

- Elena Feinstein, Dryad Curator

- VISIT and do a few searches: datadryad.org. Think about what you like, don’t like, examine the metadata for a “data package” and a “data file.”


**XML Resources (skim/read/explore items that are helpful):**


**MARC Resources (VISIT and explore the items that are helpful):**


- MARC Standards Website: [http://www.loc.gov/marc/](http://www.loc.gov/marc/).
| 6 | Sept. 26 | Follow-up with schemes, Application profiles, RDA, some experimentation with RDF software. | Please bring your packet of examples/metadata records  
Please bring your laptops.  
(Professor Greenberg has been scheduled for Jury Duty, so we are in a state of flux for the moment, but stay tuned... I am hopeful we will have class!). |
|---|---|---|---|
  
  
  
  
8 Oct. 10

**Subject metadata:** Thesauri/Taxonomies, etc.; SKOS; Folksonomies (Folksonomies will emerge again revisited again, Nov. 2)

**READ or at least SKIM. SUBJECT DATA IN THE METADATA RECORD: RECOMMENDATIONS AND RATIONALE: A Report from the ALCTS/CCS/SAC/Subcommittee on Metadata and Subject Analysis. (July 1999). (This is a historical, yet detailed and useful document.)**


- VISIT/SKIM/Read at whatever level works for you: SKOS Core Guide: http://www.w3.org/TR/swbp-skos-core-guide/.

**New readings, skim/read, file away as a f.y.i.**


- **SKIM/LOOK AT big table on methods:** Smolnik, S., Teuteberg,
<table>
<thead>
<tr>
<th>Date</th>
<th>Issue</th>
<th>Subject Metadata</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Oct. 17</td>
<td>Microformats; FOAF; vCard; Schema.org.</td>
<td>Microformats: <a href="http://microformats.org/">http://microformats.org/</a>, and SKIM the “blog” page; VISIT the wiki page; and SKIM the “about” page.</td>
<td>Guest Gregory Jansen, Library Systems, to-be-confirmed, or we may go to visit him 😊.</td>
</tr>
<tr>
<td>9 Oct. 17</td>
<td></td>
<td>URLs and a few other items to be added for schema.org, and microdata.</td>
<td></td>
</tr>
<tr>
<td>10 Oct. 24</td>
<td>Ontologies; OWL; Semantic Web; Linked data</td>
<td>VIEW: Introduction to Ontologies 1: What is an Ontology?: <a href="http://www.youtube.com/watch?v=3EUaurjK7u8">http://www.youtube.com/watch?v=3EUaurjK7u8</a>.</td>
<td></td>
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<tr>
<td>10 Oct. 24</td>
<td></td>
<td>READ the Semantic Web Activity Statement.</td>
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http://www.w3.org/2001/sw/Activity.


- Classic Semantic Web and Ontology readings (f.y.i.)

- Semantic Web resources (f.y.i.):
  - W3C Semantic Web page http://www.w3.org/2001/sw/.

Issue 4: What is linked data (revisited) and role of Metadata for the Semantic Web? How is OWL designed and how does it operate to facilitate a Semantic Web activity/operation? What are the benefits and limitations of linked data? What may we anticipate in the future with regards to linked data and Semantic
<table>
<thead>
<tr>
<th>Date</th>
<th>What metadata generation methods should we use? Who should create metadata? Folksonomies and personal metadata. Metadata and institutional repositories.</th>
<th>Web development?</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-30-2012</td>
<td>Guest, Eliot Hauser, MIAPA (Minimum Information About a Phylogenetic Analysis) Metadata.</td>
<td><strong>Web development?</strong></td>
</tr>
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</table>

**Issue 5:** Who should create metadata? What methods should we use to create metadata? Is metadata creation an art or a science?
evaluation; Best practices; Metadata research


- Skim the table of contents for the Journal of Library Metadata, Volume 9, Issue 3-4, 2009: http://www.tandfonline.com/toc/wjlmm20/9/3-4. You can access the full text of this issue via UNC’s e-journals. I recommend reading the introduction to this special issue, and skimming the selection.

Issue 6: Why do we need to evaluate metadata? How can we institute good metadata evaluation practices? What are good evaluation measures? (Consider different metadata contexts).

13 Nov. 14 Metadata Mandates; the Government and Metadata; Data curation; Metadata rights and legal issues; who owns metadata?


- NSF policy on data sharing, other sites to-be-added.
- Oomen, J., Baltussen, L. B., and Van Erp, M. (2012). Sharing cultural heritage the linked open data way: why you should
“sign up”. In: Museums and the Web 2012. San Diego, April, 11-14:  

- Defining the Open in Open Data, Open Content and Open Services: [http://opendefinition.org/licenses/](http://opendefinition.org/licenses/).

**READINGS and links may be added for the topic of metadata rights still.**

**Issue 7:** Can (or when may) metadata be considered a commodity, product, or intellectual creation? What are the rights issues that surround metadata? Who owns metadata? How, why, or when might rights issues apply?

<table>
<thead>
<tr>
<th>Monday Nov. 19</th>
<th>Due: Assignment 3: Scheme / Application Use / Evaluation Assignment</th>
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<tbody>
<tr>
<td>Nov. 21</td>
<td>University calendar says, “no classes” so read and write...working on final project.</td>
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</table>

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<tr>
<th>14 Nov. 28</th>
<th>Metadata professionals; metadata/search; future of metadata; virtual exercise.</th>
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<tr>
<td></td>
<td>- Please go to the ALA Conference Materials Archives, and look at the 8:00 a.m.-10:00 a.m. session from Sunday July 12/Networked Resources and Metadata Interest Group Program and Business Meeting <a href="http://presentations.ala.org/index.php?title=Sunday%2C_July_12">http://presentations.ala.org/index.php?title=Sunday%2C_July_12</a>, and then link to the slide posted under @: <a href="http://presentations.ala.org/index.php?title=Sunday%2C_July_12">Metadata Librarians Today: Roles and Competencies slides</a> (Skim these slides, and make sure you look at slide 25 and 26 in particular, after skimming some, and reviewing the other reading above).</td>
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<tr>
<td>15</td>
<td>Dec. 5</td>
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<tr>
<td>A metadata treasure hunt! To-be-determined...</td>
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**Websites**

- **Dublin Core Metadata Initiative**: [http://www.dublincore.org/](http://www.dublincore.org/). Homepage for the Dublin Core Metadata Initiative (DCMI); an excellent resource for many metadata topics.

- **W3C Metadata and Resource Description**: [http://www.w3.org/Metadata/](http://www.w3.org/Metadata/). Provides links to metadata activities in which the W3C is involved, specifically RDF (Resource Description Framework). See the W3C homepage (http://www.w3.org/) for links to OWL (Web Ontology Language), the Semantic Web, and other metadata related activities.

- **UKOLN -- Metadata Page**: [http://www.ukoln.ac.uk/metadata/](http://www.ukoln.ac.uk/metadata/). Homepage of UK Office for Library and Information Networking metadata activities. Good links to metadata generation tools and other resources.

- **IFLA -- DIGITAL LIBRARIES: Metadata Resources**: [http://www.ifla.org/II/metadata.htm](http://www.ifla.org/II/metadata.htm). Provides links to the homepage for a host of many metadata initiatives encoding standards (XML, HTML, and the MARC), and metadata interchange. (This page has not been updated since 2005)

**Monographs at SILS**


Additional Monographs


Journals and Conference Proceedings


Journal of Library Metadata: http://www.tandf.co.uk/journals/WJLM.

Cataloging and Classification Quarterly: http://catalogingandclassificationquarterly.com/.


JCDL (Joint Conference on Digital Libraries); search the ACM/DL portal: http://portal.acm.org/portal.cfm.

Glossary