Course Syllabus

LBSC 671: Creating Information Infrastructures

Section 0101 – Spring 2019

Instructor

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Office Hours

While I do not have regularly scheduled office hours, I am happy to meet with you in person or via phone, Skype, or other means of your choosing. In general, I am on campus most days during regular business hours, but I also have other classes and meetings. Drop-ins are definitely welcome if you want to ask questions about course-related issues or chat about academic programs, careers, etc. If you want to be sure we don’t miss each other, please email me to set up a specific time. Please know that I will work with you and your schedule to find a time that works for you – I know y’all are busy!

Course Description

Course Prefix and Number:  LBSC 671

Course Title: Creating Information Infrastructures

Credits: 3

Section: 0101

Room: Hornbake 2119

First day of class:  January 25, 2019  February 4, 2019

Last day of class:  May 13, 2019

Creating Information Infrastructures  introduces students to the foundations of acquiring and managing collections, information structures, indexing and discovery systems in Library and Information Studies. The course introduces theoretical concepts, trends, systems, and technologies central to this area of the field and equips students with the skills and conceptual background to create and manage information systems and services. The course is centered on the exploration of library and archival information systems, with students working to create, index, and produce their own objects and descriptive metadata for physical and digital contexts. In order to introduce students to the broad world of
information institutions, how they manage resources and provide access for their users the course is broken into four thematic areas:

- **Terms of reference**: What are information institutions, and in what social context do they exist?
- **Get it**: What kinds of resources do information institutions manage, and how do they come to have them?
- **Find it**: How do institutions manage these resources, what conceptual and functional skills are required for this work, and what benefits and limitations exist for each approach (e.g., automated vs. manual)
- **Serve it**: How do information institutions provide access to these resources in physical and Webbased settings

A central goal of the course is to develop student proficiency that will support their graduate work in the remaining core and elective classes.

### Student Learning Outcomes

1. Demonstrate mastery of concepts, models and information structures for life-cycle management of information assets by libraries, archives, and schools.
2. Demonstrate knowledge of the capabilities and limitations of current methods for acquisition, preservation, management, discovery and delivery of information in physical and digital form.
3. Demonstrate proficiency in creating and applying models, schema, representations and encodings for organizing information.
4. Demonstrate proficiency in designing and implementing information services that leverage current technologies.
5. Demonstrate familiarity with the effects of current trends in information creation, information technology, and information use on methods for acquisition, preservation, organization, management, discovery, and delivery of information.

### Class Website and Communications

Classes will meet in person. All accompanying course content will be posted on ELMS, UMD’s online course management system. This includes lecture slides, assignments, readings, and any announcements that the instructor needs to share with the class. If you have difficulty navigating or using any of ELMS's features, a tutorial (https://myelms.umd.edu/courses/1157772) is available.

### Expectations for Students

If you require accommodation(s) due to a disability registered with ADS (Accessibility & Disability Service) (https://www.counseling.umd.edu/ads/)
, please email me so we can work with them to ensure access to the course content. If you will be absent for medical or religious reasons, please let me know as soon as possible so any necessary adjustments can be made. I understand that you are all living lives outside of campus and that Things Happen. Absences due to emergencies or other circumstances will be addressed on a case-by-case basis.

Assignments must be submitted via ELMS. Late assignments will be reduced by a 5% for each day late (e.g., if you submit a reflection paper a day late, your max score will be 95/100). If you are experiencing extenuating circumstances, please contact me as soon as possible.

Please familiarize yourself with the University's Code of Academic Integrity

Assignments and Grading

Readings and Lectures

Each class session has a corresponding module in ELMS, which includes required and optional readings/links. Please complete the required readings and explore the additional material per your interests. This course draws heavily from Erik Mitchell’s *Metadata standards and web services in libraries, archives, and museums* (Libraries Unlimited, 2015).

This text is freely available via the UMD ebook collections

9781610694490). All other readings are available on the page for each module and are either available via the UMD Libraries' collections or freely available on the web.

Each class session will feature some combination of lecture, discussion, and/or activities. If possible, please bring a laptop to class, since our discussions tend to be more lively if you can look things up online in real time and we will have hands-on practice to the greatest extent possible. If you don’t have a personal laptop that you can bring, talk with me and we’ll discuss possible arrangements.
<table>
<thead>
<tr>
<th>Assignment</th>
<th>Deadline (11:59 pm on this date)</th>
<th>Points</th>
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<tr>
<td>Activity Assignment #1</td>
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<td>Reflection Paper #1</td>
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<td>Reflection Paper #3</td>
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<td>Cumulative Reflection Paper</td>
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<tr>
<td>Programming Assignment</td>
<td>5/19 is the final deadline. You may submit it any time during the semester.</td>
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<tr>
<td>Course Participation</td>
<td>Ongoing throughout the semester.</td>
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**Total Points: 100**

**Assignment Details**

**Course Participation**

**Required for each module. Worth 10 points.**

Regular attendance and participation in class is mandatory. If you must miss a class, notify the instructor by email in advance, and arrange to get notes from a classmate after class. If any concepts from a missed class don't make sense,
please arrange to meet with the instructor to go over cloudy concepts. Whether you attend class or not, you are responsible for all information and announcements that are made during class time.

The start value of each student's participation score is 7/10. The score will drift upwards when:

- A student shows a positive, helping attitude in and out of class,
- A student consistently participates in class discussions and activities,
- A student shows up for all classes (or all absences are excused according to University policy),
- A student communicates well with the instructor about assignment progress, questions, or concerns regarding the course.

The score will drift downwards when:

- A student has repeated absences (more than one medical absence requires documentation from a medical provider to avoid penalty),
- A student does not show up for class and does not alert the instructor in advance of the absence,
- A student is visibly disengaged from in-class activities,
- A student has conversations with classmates during lecture,
- A student has conversations with classmates when a classmate is speaking (DON'T DO THIS!).

Absences for religious observation will not affect the participation grade, as long as the student provides advance notice of the absence. Medical absences will not affect the participation grade; University policy allows one undocumented medical absence, and subsequent medical absences will be excused provided documentation.

**Activity Assignments**

3 graded Activity Assignments with deliverables worth 6 points each (18 points total)

Many of the modules will feature some sort of hands-on activity intended to reinforce or help you further explore the concepts and materials presented in the course. Three of these activities will be in-depth tutorials with questions for you to answer. These will be the graded activity assignments.

The deliverables and grading guidelines for each activity will be further detailed on the activity materials uploaded to ELMS as separate assignments.

**Reflection Papers**

3 papers worth 6 points each (18 points total) and 1 Cumulative Reflection Paper (10 points). Every four weeks or so, you will be asked to reflect on your work and your engagement with the course materials, concepts, and activities. These Reflection Papers should be approximately one page long, single-spaced with 1” margins and a 12-point font. Prompts for these three papers will be provided in ELMS. You are also welcome to address any of the readings, concepts, activities, or issues raised in the modules covered by the reflection paper that resonated with you. If you quote from any of the course materials or outside sources, please use the APA Citation format.

You will end the semester by reflecting on the course as a whole via a Cumulative Reflection Paper. This should be approximately two pages long, single-spaced with 1” margins and a 12-point font. Prompts for this paper will be
provided in ELMS. If you quote from any of the course materials or outside sources, please use the APA Citation format (https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html) or (https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html).

Deliverables:

Reflection Papers #1-3:
- A Word document or PDF of an approximately 1 single-spaced page uploaded to ELMS.

Cumulative Reflection:
- A Word document or PDF of an approximately 2 single-spaced pages uploaded to ELMS.

Grading Guidelines:

Papers will be evaluated on the following criteria:

- The paper addresses one of the provided prompts or addresses the readings, concepts or issues raised in the modules covered by the reflection paper.
- The argument or arguments within the paper are explained in clear language and is well supported. The argument or arguments flow smoothly between paragraphs in the paper.
- The paper demonstrates engagement with and synthesis of the concepts and ideas presented in the course.

Creating Metadata Descriptions for the Web with Schema.org & JSON+LD

Deliverable is worth 10 points

Students will use the Javascript Notation Language for Linked Data (JSON+LD) to create a structured metadata description of information on a Web page that will be provided in ELMS. The JSON+LD object types and properties should correspond with the metadata schemas on Schema.org, following the detailed instructions on the ELMS assignment page.

Course Capstone Project

Project Selection and Project Update are worth 2 points each (4 total). Final deliverable is worth 15 points.

Please select ONE of the following capstone projects to complete. All capstone projects will be prefaced by two check-in assignments. The Project Selection assignment will be a short survey in ELMS where you indicate which project you will be working on and its scope. The Project Update will be a short paragraph that you will upload to ELMS.

Option 1 – Research paper

Your research paper may touch on your experiences in the course or may be informed by an external interest you have related to information infrastructures (e.g., resources, technologies, standards, lifecycles, communities). Ultimately you should use your paper to explore issues of information infrastructure trends and in galleries, libraries, archives, schools and museums in depth and include an original literature review/analysis and original thought. The paper should include 5 academic sources that were not part of the regular course readings and should be at least 10 double spaced pages long.
(with 1” margins and a 12-point font). It may be helpful to break your paper into four sections (Introduction/Problem statement, Literature review, Analysis/discussion, Conclusion). APA Formatting (https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html) and Style (https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html) is preferred.

**Deliverables:**

- Project Selection
- Project Update
- Final Deliverable:
  1. A 10+ page paper (1-inch margins, double-spaced, PDF or Word) uploaded to ELMS.

**Grading Guidelines:**

- Paper meets 10-page minimum length and minimum 5 outside-of-course-readings resource requirements.
- Paper explores issues of information infrastructure trends and in galleries, libraries, archives, schools and museums in depth and includes original literature review/analysis and original thought.
- Paper is well written and connects resources cited to original ideas as well as engagement with and synthesis of the concepts and ideas presented in the course.
- Paper is well organized with a clearly articulated thesis statement, literature review, and conclusion.
- The argument or arguments within the paper are explained in clear language and is well supported and cited. The argument or arguments flow smoothly between paragraphs in the paper.

**Option 2 – Create your own website**

Leveraging the HTML and CSS skills learned in this class, create a website. You should create a website with a *specific purpose* in mind or with a *specific use case*. For example, you may want to create a website that shows off photos from a trip you took, showcases recipes and pictures of dishes you create or serves as a personal/professional homepage.

The website should consist of at least 3 separate pages, employ use of content (e.g., headers, paragraph content, links to internal and external sites), media (e.g., images, embedded media, linked videos), and have a focused use case and platform (e.g., my user is someone who wants to view recipes on their mobile phone). The website should employ semantic/xhtml techniques as outlined in our course documents, use CSS for styling and may make use of JavaScript or other advanced technologies if desired (note: JavaScript is optional). The use of template-based layout sites like Wix or Google Sites is not acceptable for this assignment. **Information on setting up your TerpConnect Account and web accessibility can be found under Module 12.**

After completing the website, you will describe the purpose of the site and reflect on the process of creating the site. You may do this either via a 2-page, double-spaced paper or a short video.

**Deliverables:**

- Project Selection
- Project Update
- Final Deliverable:
  1. URL to the website you created
  2. A 2-page paper or short video describing the project and reflecting on your experience.

**Grading Guidelines:**
Website:

- Consists of at least 3 separate pages.
- Employs use of content (e.g., headers, links to other sites).
- Employs use of media.
- Demonstrates through its organization and content a specific purpose or use case.

Paper or video:

- Paper is no more than two pages long, single-spaced with 1” margins and a 12-point font. Video is at least five minutes long.
- Reflects on the use case or purpose of the website – how it was chosen and why and how this is reflected in the creation and structure of the website.
- Discusses all relevant features of the website.
- Reflects on the process of building the website, including choices made, challenges faced, etc.

Option 3 – Digital Library Evaluation

You will draw on what you have learned in this course regarding information system, the management of information objects, and metadata in order to investigate and evaluate two or more digital libraries produced by GLAMs. You can select your digital libraries based on type of GLAM (e.g., both are from museums), subject area (e.g., materials relating to local history), materials presented (e.g., still images, texts, streaming media), software platform used (e.g. ContentDM (http://www.oclc.org/en/contentdm/collections.html), Omeka (https://omeka.org/showcase/)), or other theme that you can describe in your introduction. If a digital library is made up of several collections, please select a single collection to explore. For example, Digital Maryland (http://www.digitalmaryland.org) is a single digital library made up of individual (http://collections.digitalmaryland.org/cdm/) collections (http://collections.digitalmaryland.org/cdm/).

Ideally you should select digital libraries that have shared a copy of their data dictionary or the metadata schema that supports the digital library. Many grant-funded digital libraries will share the data dictionary as part of their requirements and others share them as part of best practices. Often, you can reach out to the creators of the digital library and ask for a copy or a version. For example, all of the digital collections created by the University of Washington have their data dictionaries posted (http://www.lib.washington.edu/msd/pubcat/mig/datadicts/default) separately (http://www.lib.washington.edu/msd/pubcat/mig/datadicts/default), while others may post it in an area of the digital library that describes the collections etc. (http://cdm16235.contentdm.oclc.org/cdm/landingpage/collection/p16235coll2) (http://cdm16235.contentdm.oclc.org/cdm/landingpage/collection/p16235coll2). The data dictionary or schema will help you better understand the choices, standards, and vocabularies being used in the collection, as they’re not as readily apparent as in something like a MARC catalog. If you would like my assistance tracking down or contacting someone for their data dictionary or schema, please let me know. However, if you feel you can glean enough about the digital library without the data dictionary, you may omit this step.

You should spend time in each digital library – browsing, searching, navigating, downloading (if possible) etc. Your evaluation of the digital libraries should discuss the following topics:

- Can you identify which system is being used?
- Who are the intended users of this digital library?
- What kinds of information objects are being preserved/shared?
What can you learn about the information objects in the digital library? What do you wish you knew?

Describe the searching process. Are you able to find what you want easily?

Describe the browsing process? Does the digital library leverage controlled vocabularies?

What works in this digital library?

What do you find challenging or what would you change to make this digital library work better?

How do your digital libraries compare to each other?

You can either organize your digital library evaluation by theme (e.g., “Searching”) or describe each individually and then draw connection in a conclusion at the end.

**Deliverables:**

- Project Selection
- Project Update
- Final Deliverable:

1. An 8+ page (double-spaced with 1” margins) evaluation of two or more digital libraries uploaded to ELMS.

**Grading Guidelines:**

- Evaluation meets 8-page length minimum and two or more digital libraries requirement.
- Evaluation is well-written and clearly organized.
- Evaluation demonstrates time spent exploring the digital library itself.
- Evaluation draws connections between the digital libraries and the larger themes and readings in the course.
- Evaluation touches on the evaluation topics enumerated above.

**Option 4 – Digital Library Creation**

You will draw on what you have learned in this course regarding information system, the management of information objects, and metadata in order to develop, create, and populate a digital library using [Omeka](https://omeka.org/classic/) a web-based digital library platform. The instance of Omeka that we are using for this course will be hosted by UMD. **Access to this platform will be provided to individuals who select this option following Module 8.**

This assignment includes four separate processes: topic/content selection, user needs assessment, metadata modeling, and metadata creation/material uploading.

- **Topic/content selection:** You should identify a topic or content area for your digital library. The topic or focus of your digital library will help you determine what kinds of materials you will add to your digital library and the people you expect would be interested in using or accessing your digital library. For example, you may choose to create a digital library of family photos, your academic output, documents or images relating to an organization you belong to, etc.

- **User needs assessment:** You should identify potential users and use goals of your digital library (e.g., discovery, research, contribution). What will your users want to know about the objects you are uploading? How will they try to search for these objects? To this end, you should craft short statement that explains what information needs a typical user of your collection would have and use it to guide your creation of metadata and interface needs.

- **Metadata modeling:** You should use the skills you have learned this semester to evaluate your digital collection and select metadata elements that will help you describe your digital objects. Omeka uses Dublin Core as a native schema, but you will have to determine which elements to use as well as how the metadata itself (the statements about your resources) are created and formatted. The metadata model must include descriptive elements (e.g. title, creator, publication date), employ controlled vocabularies and/or classification systems (e.g., LCSH, DDC, TGN, or
your own local controlled vocabulary). Your metadata decisions should be documented in a data dictionary (a template will be provided).

- **Metadata creation/material uploading:** Once you have created your metadata standards/data dictionary, you will need to upload and describe a number of materials. You will want to upload at least 20 items. This should provide enough of a sample in order for you to see how well your metadata choices satisfy your user needs.

**Deliverables:**

1. An Omeka-based digital library the describes and provides access to specific collection of digital objects. The digital library should contain **at least** 20 items.
2. A data dictionary that includes a brief statement of your digital library’s topic, user needs, and metadata documentation. **A template for this will be provided.**
3. A video presentation of around 5 minutes **OR** a one paged paper that:
   - Provides an overview of the digital library topic, content, and expected users
   - Conducts a tour of notable features of the digital library
   - Discusses challenges associated with developing the digital library.

**Grading Guidelines:**

**Digital Library:**

- Contains at least 20 items.
- Metadata is provided for each item and is free of errors (e.g., spelling).
- Metadata includes a variety of descriptive elements and leverages controlled vocabularies.

**Data Dictionary:**

- Clearly describes your digital library’s topic and provides a coherent statement of user needs.
- Following the template, provides all of the required information for each Dublin Core element/field selected.
- Metadata reflects an understanding of user needs.

**Video Presentation or paper:**

- Includes a discussion of how the collection works/tour of collection, a quick overview of the digital library topic, content, and discusses challenges associated with/lessons learned in developing the digital library.

**Programming Exploration**

Due at the end of the course but may be handed in at any time. **Worth 15 points.**

In this assignment students learn more about programming and data manipulation using Python or JavaScript. This assignment is largely self-led and involves completing either the [Python](https://www.codecademy.com/learn/learn-python) (recommended) or [JavaScript](https://www.codeacademy.com/learn/javascript) Codeacademy course as well as a reflective statement about the process. This assignment will take approximately 25-30 hours, so please leave yourself ample time to work through your selected course. I recommend doing a little bit every week at minimum to allow yourself enough time and to ensure that you remain familiar with the concepts as you go.

If you are brand new to coding, you may wish to start with CodeAcademy’s brand new How to Code Course. This is brand new as of January 2019. If you have already completed this Codeacademy course prior to class or if you know Python and JavaScript you should choose another programming activity at Codeacademy or somewhere similar. Please clear this with me prior to working on it.
Instructions:

- Create an account.
- You do not have to upgrade to a Pro account for the purpose of this assignment. Working through the free version (which has fewer projects) is what I intend for this assignment.
- Complete the course.

Deliverables:

- Screenshot of your Course Completion Survey (or screenshot showing percentage of the course completed). You can upload this as a separate file or paste the screenshot into a document with your reflective statement.
- Short reflective statement on the process. Statement should be about a paragraph or two and discuss your experience undertaking this assignment.

Grading Guidelines:

- Course completion (Up to 6 points) o 33% complete = 2 point o 66% complete = 4 points o 100% complete= 6 points
- Reflective statement (4 points) o Reflection is well-written and discusses your experience working through the course, including challenges, lessons learned, etc.

Weekly Modules

Session 1 (2/4/2019) – Information Infrastructures and Institutions

Class Overview: Introduce the structure for the semester grounded in a broad orientation to how information institutions work. Explore definitions and examples of information institutions including galleries, libraries, archives, and museums (GLAMs). Explore the roles that these institutions play in society (e.g. memory, community, education, commerce).

Readings:


Watch: What happens when you click a link

What Happens When You Click a Link? - Computerphile

Optional Readings:

- Clough, G.W. (2013). *Best of both worlds: museums, libraries, and archives in a digital age.* Smithsonian Institution: Washington D.C. [https://www.si.edu/content/gwc/bestofbothworldssmithsonian.pdf](https://www.si.edu/content/gwc/bestofbothworldssmithsonian.pdf)


Assignments:

Review the syllabus and course website.

Session 2 (2/11/2019) – Information Systems as Boundary Objects

**Class Overview:** Expand on the organizational orientation from Module 1 and discuss social and cultural roles of GLAMs. Explore concrete examples of information, cultural heritage and memory institutions and define concepts and ideas to give students a holistic understanding of “information infrastructure” field.

**Readings:**

- “Do We Really Need Libraries?” – Linton Weeks for NPR in May 2015. [http://www.npr.org/sections/npr-history-dept/2015/05/05/403529103/do-we-really-need-libraries](http://www.npr.org/sections/npr-history-dept/2015/05/05/403529103/do-we-really-need-libraries)

https://umd.instructure.com/courses/1259419/assignments/syllabus
Optional Readings:

- Bohyun Kim’s blog post on “Suzanne Briet’s Document Antelope in Celebration of Ada Lovelace Day”. [http://www.bohyunkim.net/blog/archives/2622#.WZhm8ih97IU](http://www.bohyunkim.net/blog/archives/2622#.WZhm8ih97IU)

Assignments:

Activity Assignment #1 due 2/17/2019.

Session 3 (2/18/2019) – Acquiring and Managing Resources

Class Overview: Explore resource acquisition and management work in GLAMs. Introduce technical service and illustrate connections with other functional areas in information institutions by reinforcing role of core courses. For each
GLAMs institution type explore the notion of resource operations in light of changing information institution models. At the end of the class students will understand the role of each of the activities in GLAMs 1) Publication models (formal, informal), 2) Acquisition of materials (published, manuscripts, grey literature), 3) Management of formats (physical and digital), 4) Materials processing and management, 5) Appraisal, access and preservation, 6) Alternative acquisition, management and dissemination strategies.

Readings:


Optional Readings:

Assignments: None due, but this might be a good time to look at Codecademy and your Programming Assignment.

Session 4 (2/25/2019) – Introduction to Metadata

Class Overview: Introduce metadata model (cataloging model, metadata schema, data representation model, data encoding/serialization). Discuss different types of metadata (e.g. descriptive, administrative, technical) and situate metadata within the broader context of information system design.

Readings:

- Gilliand, A.J. (2016). Setting the Stage. From *Introduction to Metadata*, 3rd Edited by Murtha Baca. [http://www.getty.edu/publications/intrometadata/setting-the-stage/][This entire text is quite good, so feel free to browse and read whatever else is of interest]
- Metadata Creation LibGuide from UC Santa Cruz: [https://guides.library.ucsc.edu/c.php?g=618773&p=4306381](https://guides.library.ucsc.edu/c.php?g=618773&p=4306381)

Optional Readings:

Assignments:


Session 5 (3/4/2019) – Methods of Description, Representation and Classification

Class Overview: Discuss cataloging methods and different forms of metadata in information institutions. Introduce concepts of metadata schemas and the role that metadata standards play in enabling creation of digital documents and representations. Reinforce specific cataloging standards/approaches (e.g., RDA and DACS) and introduce metadata schema (e.g., MARC, DC, EAD). Reinforce context of these standards in broader metadata and information system design models. Draw connections to other information systems. Explore and application classifications structures.

Readings:

metadata (http://www.niso.org/publications/understanding-metadata-what-metadata-and-what-it-primer) -
(http://www.niso.org/publications/understanding-metadata-what-metadata-and-what-it-primer) and

Optional Readings:

(http://www.nl.go.kr/icc/paper/20.pdf)
- Introduction to the Dewey Decimal Classification:

http://www.oclc.org/content/dam/oclc/dewey/versions/print/intro.pdf
(http://www.oclc.org/content/dam/oclc/dewey/versions/print/intro.pdf)

- Library of Congress Classification Outline: https://www.loc.gov/catdir/cpso/lcco/
(https://www.loc.gov/catdir/cpso/lcco/)
- DCMI’s Using Dublin Core: http://dublincore.org/documents/usageguide/
(http://dublincore.org/documents/usageguide/) and Guidelines for Dublin Core Application Profiles:
http://dublincore.org/documents/profile-guidelines/ -
- Understanding MARC (Bibliographic MAchine Readable Cataloging):

https://www.loc.gov/marc/umb/ (https://www.loc.gov/marc/umb/)


Assignments:

Nothing due. Next module is very reading heavy, so you might want to start looking ahead.

Session 6 (3/11/2019) – Metadata Schema, Vocabularies, and Encoding

Class Overview: Expand on concepts in metadata schema including the notion of application profiles, abstract models and Resource Description Framework. Broaden student understanding of vocabularies by introducing new serialization standards (e.g. XML).
Readings:


After reading the above, watch:

Amazon Kindle X-Ray Demo ([https://www.youtube.com/watch?v=AbzOLua2baw](https://www.youtube.com/watch?v=AbzOLua2baw))

Optional Readings:


Assignments:

- Start thinking about your Capstone Project Selection.
- Activity Assignment #2 due 3/24/2019 (note: this is the Sunday after Spring Break!).

**SPRING BREAK – 3/18-3/24**

Class Overview: Introduce schema.org as an environment of metadata schemas and encoding practices for the open Web, with an emphasis on Search Engine Optimization. We will learn about JSON+LD as one of several available encoding formats for marking up metadata about Web pages.

Readings:
In order to learn the basics of adding structured data to Web pages, read through both of these tutorials (don’t just skim - read them well enough to truly understand them):


When you're finished, go to Schema.org and look at a few schemas. I recommend you start with schemas for some of the resource types that might be familiar to you, for example:

- [http://schema.org/TVSeries](http://schema.org/TVSeries)
- [http://schema.org/Episode](http://schema.org/Episode)
- [http://schema.org/Book](http://schema.org/Book)
- [http://schema.org/Course](http://schema.org/Course)
- [http://schema.org/CourseInstance](http://schema.org/CourseInstance)
- [http://schema.org/Dataset](http://schema.org/Dataset)

If you want to see some other types (aka schemas), you can go to the full list of schema.org types located here: [http://schema.org/docs/full.html](http://schema.org/docs/full.html)

As you look at these different metadata schemas, pay attention to the names of the metadata elements as well as their Expected Types (sometimes a data type, sometimes an instance of another schema.org type) and their descriptions.

Assignments:
- Reflection Paper #2 is due 3/31/2019
- Creating Metadata Descriptions for the Web with Schema.org & JSON+LD is due 4/7/2019

Session 8 (4/1/2019) – In-Class Work Session

Class Overview: Students will have in-class time and instructor availability so that they may work and/or receive help on the Schema.org assignment, capstone project selection, or the programming tutorial.

Readings:
The readings this week are whatever you need to read as you explore your potential capstone projects.

Assignments:
Session 9 (4/8/2019) – Building Blocks of the Web

**Class Overview:** Revisit web-publishing document standards (e.g. HTML, CSS, JavaScript). Acquaint students at a high level with web publishing approaches. **Readings:**

- How to Publish Web Pages Using Your TerpConnect Account: [https://umd.service-now.com/itsc?id=kb_article&sys_id=78160fe33790020041271f9543990e57](https://umd.service-now.com/itsc?id=kb_article&sys_id=78160fe33790020041271f9543990e57)

**Optional Readings:**

- CT State Library LibGuide on "Libraries and Accessibility": [https://libguides.ctstatelibrary.org/dld/accessibility/websites](https://libguides.ctstatelibrary.org/dld/accessibility/websites)


• Watch: Uploading Files to Terpconnect with WinSCP:

_Uploding Files to Terpconnect with WinSCP_ (https://www.youtube.com/watch?v=3uLLKveCJec)

(https://www.youtube.com/watch?v=3uLLKveCJec)

_Assignments:_

Keep working on those Capstone Projects & Programming Assignments!

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**Session 10 (4/15/2019) – Search and Retrieval in Information Systems**

*Class Overview:* Explore methods for automatic indexing and ranking of information resources. Introduce foundation of web search techniques, full text searching of scanned books and image searching.

*Readings:*

- Watch: Google’s “How Search Works”:

_How Search Works_ (https://www.youtube.com/watch?v=BNHR6lQJGZs)

(https://www.youtube.com/watch?v=BNHR6lQJGZs)

- Watch: Google’s “The Evolution of Search”:

_The Evolution of Search_ (https://www.youtube.com/watch?v=mTBShtwCnD4)

(https://www.youtube.com/watch?v=mTBShtwCnD4)
• Explore: Google’s “How Search Works”: https://www.google.com/search/howsearchworks/


Optional Readings:

• Explore: http://www.wikidata.org/wiki/Wikidata:Main_Page

• Watch: “How Machines Learn”:
  How Machines Learn (https://www.youtube.com/watch?v=R9OHn5ZF4Uo)

Assignments:

Capstone Project Update due 4/21/2019


Class Overview: Explore services that support access to physical and digital objects. Introduce broad types of information services including user-focused services (library catalog) and system-focused web- services (interoperability, harvesting, transformation) (ONIX, OAI/PMH).

Readings:


https://umd.instructure.com/courses/1259419/assignments/syllabus
Reidsma, M. (2016). Algorithmic Bias In Library Discovery Systems: 
https://matthew.reidsrow.com/articles/173

Brooker, K. (2018). 'I was devastated': The man who invented the World Wide Web has some regrets. Tim Berners-Lee has seen his creation debased by everything from fake news to mass surveillance. And now he's got a plan to fix it. *Vanity Fair*, 60(8), 62.

Optional Readings:


Assignments:

Activity Assignment #3 due on 4/28.

Session 12 (4/29/2019) – Metadata-rich Web Services

Class Overview: Continue exploring metadata rich web services.

Readings:

- Wallis, R. (2012). “Get yourself a Linked Data piece of WorldCat to play with”.


Explore: http://linkeddatatools.com/


Explore: LD4P (Linked Data for Production):

https://wiki.duraspace.org/pages/viewpage.action?pageId=74515029

Assignments:

Reflection Paper #3 due 5/5/2019

Session 13 (5/6/2019) – Exploration of Data Management

Class Overview: In this class we are exploring the broad area of Research Data Management in order to better understand how issues of organization and information technology have an impact in an emerging area of interest in libraries, archives, schools and museums. Students will explore a real-world data management guide and try their hand at data management tools. Readings:
• Explore: UC Berkeley’s Research Data Management Site: http://researchdata.berkeley.edu/

• Explore: DMPTool: https://dmptool.org/ (https://dmptool.org/)


• NSDA Levels of Digital Preservation

Assignments:

• Cumulative Reflection Paper due 5/12/2019

• Capstone Project due 5/14/2019.

Session 14 (5/13/2019) – Next Steps in Information Infrastructures

Class Overview: Expand on concepts in metadata schema including the notion of application profiles, abstract models (e.g. Dublin Core Abstract Model) and Resource Description Framework. Broaden student understanding of vocabularies by introducing new serialization standards (e.g. XML, JSON).

Readings:


• Buckland, Michael (2012). What kind of science can information science be? JASIST 63 (1), 1-7.

http://people.ischool.berkeley.edu/~buckland/whatsci.pdf

• The DIKW pyramid: https://en.wikipedia.org/wiki/DIKW_pyramid


http://www.newlibs.org/article/3144 - (http://www.newlibs.org/article/3144-designing-a-new-librarianship) -

• Groeger, L. (2017). When the designer shows up in the design. ProPublica.

Assignments:

Capstone Project due on 5/14/2019.

Last chance to turn in your Programming Assignment on 5/19/2019.

Acknowledgements

The overarching structure of this course is drawn from a previous version designed by Erik Mitchell and refined by Maggie Dull.

Course Summary:

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