Syllabus

Department: Division of Library and Information Science

Course Number and Title: LIS 310 Fundamentals of Data Curation

Bulletin Description

This course introduces students to the field of data curation, which is the active, ongoing management of data throughout its life cycle from creation to archiving to deletion. This process involves data analysis, accessibility and reliable retrieval for research purposes.

Credit: 3 semester hours.

Course Description This course introduces students to the active curation and management of data throughout its lifecycle to enhance its value for scholarship, science, education, industry, and other stakeholders. Students explore data activities, such as access policies and implementation, data reuse, data design through content-creator management, data entry into databases or repositories, and metadata creation.

Prerequisite(s): None
Co-requisite(s): None

Course Objectives

As outcomes of the course, students will/will be able to:

- Describe the significance of abstraction in data management and the relationships among the common key data abstraction strategies
- Understand the nature of representation hierarchies and strategies for data transformation and transcoding
- Explain the process of data derivation and the importance of documentation
- Compare and contrast various data preservation strategies
- Understand the importance of dataset identifiers and citation
- Describe management of heterogeneity, including schema matching techniques
- Explain the role metadata plays in data management and identify a variety of metadata schemes
- Summarize the role institutions, agencies, policies, and laws play in data curation

Program Goals and Outcomes

The course contributes towards satisfying the following MS LIS program goal/s:

2A. Understand the concepts and issues relate to the lifecycle of recorded knowledge and information, from creation through various stages of use to disposition

2B. Understand the concepts, issues and methods related to the acquisition and disposition of resources, and the management, preservation and maintenance of collections

3A. Understand the principles involved and the developmental, descriptive, and evaluative skills needed in the organization, representation and retrieval of recorded knowledge and information resources.

3B. Demonstrate ability to organize recorded knowledge and information using the systems of cataloging, metadata, indexing, and classification standards and methods.

Units of Instruction

Unit	Title
1	Understanding Research Data ▪ What are Data? ▪ Understanding Data Management
2	Data Management Planning ▪ Introduction to Data Management Plans ▪ Funding Agency Requirements ▪ Data Management Plan Content ▪ Data Management Planning tools
3	Working w/ Data ▪ Organizing Data ▪ File Formats & Transformations ▪ Documentation & Data Citation ▪ Storage & Security
4	Sharing Data ▪ Sharing Foundations ▪ Enabling Sharing
5	Archiving Data ▪ Preservation Foundations ▪ Trustworthy Repositories

Learning Activities

The assessment activities for this six week summer course coincide with each unit of instruction and include a short quiz and a practice assignment. With this said, unit one, Understanding Research Data, includes a quiz related to the concepts & ideas centered around the discussion of data and data management. Unit two learning activities include a quiz covering the four topics of Data Management Planning (located in table 2 above) and students will practice writing a Data Management Plan. Unit three consists of practice quizzes for each of the sub-topics listed in the table above and will culminate with a final graded quiz covering the main

concepts, ideas & best practices of Data Management Planning. Unit four learning activities consist of one quiz covering the topics reviewed for Sharing Data and one assignment centered around the topic of Citing Data. The final unit will consist of a quiz covering the topics introduced in Archiving Data and a written assignment centered on the topic of Finding a Trustworthy Repository. The course ends with a final comprehensive exam.

Assessment

1. Course-Level Assessment
   a) The quizzes are designed to reinforce one or more of the course objectives listed above

   b) The individual assignments are peer-graded assignment activities and apply to all course objectives

2. Program-Level Assessment. The MS LIS program is reviewed every seven years for continued accreditation by the American Library Association's (ALA) Committee on Accreditation. The program's most recent accreditation was in the Fall 2018 term. As part of this accreditation process, all students, faculty, alumni, and employers participate in periodic assessments, providing feedback for improving the MS LIS program. The two assessments below apply to every course in the program.

   a) Faculty-Selected Assessment. Over a four year period each course in the MS LIS program is assessed by the instructor to determine how well students are learning the program goal/s related to the course. For each course, faculty select one or more artifacts (e.g. assignment, exam, or semester project) as a representative measure of student learning of the related program goal/s. At the end of the course, the faculty member completes a course artifact assessment form describing the class' performance on the artifact, and any course revisions prescribed as a result. Sample artifacts with their respective reviews are included as well.

      In LIS 310 Fundamentals of Data Curation, the Working with Data assessment activity is used as a representative measure of student learning of the related program goal/s.

   b) Student-Selected Assessment. The end-of-program assessment is an e-portfolio consisting of student-selected artifacts (assignments, discussion posts, projects, etc.) from their courses as evidence of satisfying each of the eight program goals. For each program goal, students write a reflection which describes the relationship of the artifact to the respective goal and their learning from the artifact.

      In LIS 310 Fundamentals of Data Curation, the working with data assessment activity is suggested as the course artifact should students decide to use their work in this course as evidence of satisfying the related program goal/s. This is because of the comprehensive nature of the project.

Grading Scheme

The course grade will be determined from the following activities. The percent in parentheses is that of the overall course grade.

a) Individual exercises (50%)

b) Quizzes (25%)

c) Final Exam (25%)

Bibliography

Hayes, Sheila. 2017. "Digital Curation by Gillian Oliver and Ross Harvey: (2016). 2nd Ed. Chicago, Il: Neal-Schuman.

Harvey, D. R, and Martha R Mahard, eds. 2020. *Preservation Management Handbook : A 21st-Century Guide for Libraries, Archives, and Museums*. Lanham: Rowman & Littlefield.

Instructional Time Requirements: 150 hours for 3 credits (10 hours per week for our 6 week semester)

Asynchronous or synchronous Lecture

Assigned weekly reading

Weekly assignments (individual and group)

Active participation in online discussions

Research for semester-long projects (term papers, projects)

Presentations (online or face to face)

Academic Service-Learning projects (where appropriate)