SI 625: Digital Preservation
Fall 2018

Meets: Thursday 9 am-noon, 1265 North Quad
Instructor: Rebecca Frank (pronoun: she/her)
Email: frankrd [at] umich [dot] edu
Office Hours:
● virtual: Tuesday 3:30-4:30 pm, Canvas Chat
● in person: Thursday 1-2 pm, 1270 North Quad
● and by appointment

Syllabus subject to change. Most current version always available on Canvas.

Course Overview

Digital preservation is a rapidly evolving set of standards and practices that increase the longevity of digital information. Although some digital preservation concepts evolved from conservation and preservation of physical materials and artifacts, digital preservation is fundamentally different in scope, scale, and practice. Digital preservation is a distributed process that requires coordination between the producers of digital assets and the organizations, systems, and people who assume responsibility for their long-term accessibility. Effective digital preservation depends on aligning technical approaches and organizational solutions with the characteristics of the digital content, the known or anticipated uses of the content, and the technical, financial, and human resources available to invest in extending the life of digital content.

This course will provide you with:
1. tools and methodologies to understand the threats to digital information and assess their impact;
2. strategies for preserving digital information in archives, libraries, museums, and repositories;
3. models for digital preservation outside of traditional institutions;
4. tools for managing digital preservation activities and workflows; and
5. guidelines for making decisions about what to preserve, for whom, and at what cost.

The course focuses on emerging standards and practices for digital preservation in repositories but also addresses the limitations of current practice for many new types of digital content.

Updated: 11 September 2018
Where possible, we use case studies and hands-on exercises to become familiar with concepts discussed in the readings.

Learning Objectives

After completing this course:
1. Students will be able to complete a threat assessment for one or more types of digital content.
2. Students will be able to recommend steps that data producers can take to protect digital assets while they are still actively using them and facilitate the transfer of digital content to a third party.
3. Students will understand the components (technical, policy, financial, human resources) necessary to create and manage a trusted digital repository.
4. Students will be able to evaluate digital preservation strategies, methods, and tools and determine which are appropriate for specific types of content and user communities.
5. Students will learn how to keep up with the rapid development of standards and tools for digital preservation.

Requirements and Assignments

Assignments

(Note: for detailed descriptions of each assignment, please refer to the course site in Canvas.)

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Due Date</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Participation (class preparation, attendance, &amp; participation)</td>
<td>ongoing</td>
<td>5</td>
</tr>
<tr>
<td>Discussion Lead</td>
<td>TBD/individual</td>
<td>5</td>
</tr>
<tr>
<td>In-Class Activities/Labs</td>
<td>ongoing</td>
<td>10</td>
</tr>
<tr>
<td>Assignment 1: Threat Assessment Exercise</td>
<td>9/28</td>
<td>20</td>
</tr>
<tr>
<td>Assignment 2: Digital Preservation Strategy</td>
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<tr>
<td>Assignment 3: Case Study Analysis</td>
<td>11/16</td>
<td>20</td>
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<tr>
<td>Assignment 4: Cost Analysis &amp; Sustainability Exercise</td>
<td>12/7</td>
<td>20</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>100</td>
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Updated: 11 September 2018
Technology

Students are encouraged to bring personal computing devices to class and to use them actively as learning tools. Some class activities will require the use of a personal computer, please refer to the course schedule for information about these sessions.

Required Reading


NOTE: Be sure to purchase the Second Edition (2017). Digital preservation is evolving rapidly; the 2017 edition is updated and contains new material. This book is available on 3-day reserve at the Shapiro Undergraduate Library.

All other readings are available online.

This is a resource that you may find helpful in navigating the assigned readings for this course: Paul Edwards: How to Read a Book, v5.0
https://pne.people.si.umich.edu/PDF/howtoread.pdf

General Course Policies

Email Policy & Office Hours

I will try to answer emails within 48 hours of receiving them; however, if you have extensive questions about an assignment, please come to office hours or make an appointment to meet. If scheduled office hours don’t work, I am also available by appointment. I cannot guarantee a prompt response to last minute, just-before-the-deadline emails about assignments, so try to work ahead. (Note: Assignments in this course are due on Fridays, in order to give you time to ask questions in class and/or at office hours on Thursdays.)

While I am happy to answer questions about assignments and look over small sections of your work, I unfortunately cannot look over complete drafts of assignments. If you need additional assistance with your writing, I recommend the Sweetland Center for Writing, which is located at 1301 North Quad.
Grading Criteria and Late Assignment Policies

I use a point-based grading system with no curving. I will use the following scheme for assigning final grades: 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 = 63-67, D- = 60-62; F = <60. If, at the end of the semester, you are within 0.5 points of a higher letter grade, I will bump you up to the higher grade.

All assignments are to be completed by the due date. Exceptions will be granted with the permission of the instructor in advance of the due date for the assignment. Assignments submitted late without such permission will be downgraded 5% points each day the assignment is turned in past the due date, including weekends. An assignment is one day late when the time it is due is passed, and it continues to be one day late until 24 hours later.

Academic Integrity

Unless otherwise specified in an assignment all submitted work must be your own, original work. Any excerpts, statements, or phrases from the work of others must be clearly identified as a quotation, and a proper citation provided. Any violation of the School’s policy on Academic and Professional Integrity (stated in the Master’s and Doctoral Student Handbooks) will result in serious penalties, which might range from failing an assignment, to failing a course, to being expelled from the program. Violations of academic and professional integrity will be reported to UMSI Student Affairs. Consequences impacting assignment or course grades are determined by the faculty instructor; additional sanctions may be imposed by the Assistant Dean for Academic and Student Affairs.

Collaboration

UMSI strongly encourages collaboration while working on some assignments, such as homework problems, weekly assignments, in-class activities, and interpreting reading assignments as a general practice. Active learning is effective. Collaboration with other students in the course will be especially valuable in summarizing the reading materials and picking out the key concepts. You must, however, write your homework submission on your own, in your own words, before turning it in. If you worked with someone on the homework before writing it, you must list any and all collaborators on your written submission. Each course and each instructor may place restrictions on collaboration for any or all assignments. Read the instructions carefully and request clarification about collaboration when in doubt. Collaboration is almost always forbidden for take-home and in-class exams.

Attendance

Class attendance and participation are essential components of this course. As such, I expect everyone to come to class having read the required material, prepared to critically engage the
concepts and participate in activities. Students can miss one class without penalty; however, please contact me ahead of time if you need to miss more than that. If you miss more than three classes, I reserve the right to dock an additional 5% of your grade per absence.

Students who expect to miss classes as a consequence of their religious observance will not be penalized for their absence and shall be provided with a reasonable alternative opportunity to complete any work missed. The complete University of Michigan policy can be found here: U-M Guidance to Students Regarding Conflicts Between the Academic and Religious Calendars.

If you plan to miss class during the semester for religious observance, please notify the instructor as early in the semester as possible so that accommodations can be made to complete any work that you will miss.

Code of Conduct

I consider this classroom to be a place where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

Preferred Name/Pronoun Policy

I will gladly honor your request to address you by the name and gender pronoun of your choosing. Please advise me of your preference early in the semester so that I may make appropriate changes to my records. If you would like to do so, instructions for designating your preferred pronoun in Wolverine Access can be found here: https://csprod.dsc.umich.edu/htmldoc/eng/dftie/lssa/htm/cc_ss_genderid.html.

Accommodations for Students with Disabilities

If you think you need an accommodation for a disability, please let me know at your earliest convenience. Some aspects of this course, the assignments, the in-class activities, and the way we teach may be modified to facilitate your participation and progress. As soon as you make me aware of your needs, we can work with the Office of Services for Students with Disabilities (SSD) to help us determine appropriate accommodations. SSD (734-763-3000; ssd.umich.edu/) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. I will treat any information that you provide in as confidential a manner as possible.
Student Mental Health and Wellbeing

The University of Michigan is committed to advancing the mental health and wellbeing of its students, while acknowledging that a variety of issues, such as strained relationships, increased anxiety, alcohol/drug problems, and depression, directly impacts students’ academic performance.

If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and https://caps.umich.edu/ during and after hours, on weekends and holidays or through its counselors physically located in schools on both North and Central Campus. You may also consult University Health Service (UHS) at (732) 764-8320 and https://www.uhs.umich.edu/mentalhealthsvcs, or for alcohol or drug concerns, see www.uhs.umich.edu/aodresources.

For a more comprehensive listing of the broad range of mental health services available on campus, please visit: http://umich.edu/~mhealth/
## Course Outline

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<td>Course Overview: What is digital preservation and why does it matter?</td>
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<td>2</td>
<td>9/13</td>
<td>Threat Assessments: What can go wrong?</td>
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<td>3</td>
<td>9/20</td>
<td>Organizational Approaches</td>
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<td>4</td>
<td>9/27</td>
<td>Core Concepts in Digital Preservation</td>
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<td>Mitigating Risk: Preserving Digital Information</td>
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<td>6</td>
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<td>Repositories, Tools, and Services</td>
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<td>Transfer, Ingest, and Packaging</td>
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<td>Preserving Dynamic Content</td>
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<td>9</td>
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<td>Access &amp; Use</td>
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<td>10</td>
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<td>Preserving Research Data</td>
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<td>Preserving Art and Cultural Artifacts</td>
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<td>12</td>
<td>11/22</td>
<td>NO CLASS - THANKSGIVING</td>
</tr>
<tr>
<td>13</td>
<td>12/6</td>
<td>Summary/Wrap-Up</td>
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### Session 1: Course Overview: What is Digital Preservation and Why Does It Matter?

This session will provide an overview of the origins and the current state of digital preservation as a distinct field of practice.

#### Required Readings (read before class)


Complete before class:


Note: Completing the tutorial means following the hyperlinked content (Introduction: Timeline: Digital Technology and Preservation) for example, and exploring the content).

Session 2: Threat Assessments: What can go wrong?

Digital information is vulnerable to loss and destruction on many levels (e.g. media deterioration, technology obsolescence, software dependencies and failures, loss of functionality and meaning, and loss of financial support and other resources). In this session, we will evaluate the risks and threats associated with digital information and learn how to assess risks and threats.

Required Readings


Complete before class:


Session 3: Organizational Approaches

There are many different ways of dividing responsibility for the preservation of digital information and different organizational models. In this session, we will examine digital preservation programs and strategies in libraries and archives, for scientific data management and archiving, personal digital archiving, web archiving, and preservation in content-based industries (publishers, media, film, and video).
Required Readings

Corrado & Sandy: Chapters 1-3


Complete before class:


Recommended/Additional Reading:


Session 4: Core Concepts in Digital Preservation

In this session, we will discuss the core concepts and processes for digital preservation.

Required Readings

Corrado & Sandy. Chapter 4

Session 5: Mitigating Risk: Preserving Digital Information.

This session will focus on interventions that mitigate the risk of losing digital information of long-term or future value.

Required Readings
Corrado & Sandy. Chapter 5-6


Session 6: Repositories, Tools, and Services

In this session, we will discuss a variety of repository options from build-your-own to renting services from a third party. We will consider the advantages and disadvantages of generic versus special purpose repositories and discuss some of the common specifications and services.

Required Readings
Corrado & Sandy (Chapter 8-10)


CoreTrustSeal: Core Trustworthy Data Repositories Requirements  (https://www.coretrustseal.org/why-certification/requirements/)
ICPSR Guidelines, 1. OAIS-based processes
([https://www.icpsr.umich.edu/icpsrweb/content/datamanagement/lifecycle/oais.html](https://www.icpsr.umich.edu/icpsrweb/content/datamanagement/lifecycle/oais.html))

Session 7: Transfer, Ingest, and Packaging

This session covers the core activities in digital preservation workflows; namely the transfer of digital information from producers to a repository and the preparation of that information for access and long-term preservation.

Required Readings

Corrado & Sandy (Chapters 11-13)


ICPSR Guidelines, 2. Selection and Appraisal
([https://www.icpsr.umich.edu/icpsrweb/content/datamanagement/lifecycle/selection.html](https://www.icpsr.umich.edu/icpsrweb/content/datamanagement/lifecycle/selection.html))

ICPSR Guidelines, 3. Ingest
([https://www.icpsr.umich.edu/icpsrweb/content/datamanagement/lifecycle/ingest/index.html](https://www.icpsr.umich.edu/icpsrweb/content/datamanagement/lifecycle/ingest/index.html))

EXPLORE BEFORE CLASS at least one of the following:

- Archive-IT ([https://archive-it.org/](https://archive-it.org/))
- BitCurator ([https://bitcurator.net/](https://bitcurator.net/))

Session 8: Preserving Dynamic Content

Many digital preservation standards and practices work well with static, fixed content. Increasing, valuable content is dynamic, interactive and variable. This session explores some of the challenges of and approaches to preserving complex objects and dynamic data.

Required Readings

Corrado & Sandy (Chapter 14)


https://doi.org/10.2218/ijdc.v5i1.145.

https://doi.org/10.17723/aarc.69.1.1765364485n41800.


## Session 9: Access and Use

The purpose of preservation is to enable the continuing use of digital information or reuse at some future time. Nevertheless, the question of access and use has been largely neglecting in digital preservation research and program design. This session focuses on how an understanding of known or potential uses of digital information can improve decision making. We will learn how to apply the FAIR principles (Findable, Accessible, Interoperable, Reusable) to different preservation environments.

### Required Readings


ICPSR Guidelines, 4. Access and Dissemination


Session 10: Preserving Research Data

This session will look deeply into the special challenges of preserving research data in the natural and life sciences, social science, and the humanities.

Required Readings
Corrado & Sandy (Chapters 15-16)


Session 11: Preserving Art and Cultural Artifacts

This session will explore challenges and some new approaches to preserving new forms of media, art, and cultural expression.

Required Readings
Corrado & Sandy (Chapter 17)


**Explore Before Class**

The Peacock Room ([http://peacockroom.wayne.edu/](http://peacockroom.wayne.edu/))

Browse the website, including the 'About' and the 'Visit the Room' pages.

**Session 12: Sustainability**

This session will focus on costs, options, and tradeoff necessary for affordable digital preservation.

**Required Readings**


Session 13: Summary Wrap Up

Preservation of the Future/the Future of Preservation: Some lessons from the past