INLS 765: Information Technology Foundations for Managing Digital Collections

Spring 2024 Syllabus

Welcome to INLS 765! The fundamental motivation for this course is that anyone responsible for digital collections will have to understand and be conversant in various aspects of the associated information technologies in order to evaluate the work of developers, delegate tasks, write appropriate requests for proposals (RFPs), and establish reasonable management and preservation policies.

Goals

Upon completion of this course, you will be able to:

- assess many of the opportunities and challenges associated with digital information systems that you have not seen before and explain them to those who have less technical background than you.
- actively contribute to discussions about design, maintenance, and changes to the information systems that support digital collections for which you are responsible.
- read and understand the information technology trade press, recognizing opportunities and strategic implications for the management of digital collections.
- contribute substantive recommendations for policies related to the management of digital collections.

Your Instructor

My name is Jason Casden (he/him), and I work as the head of the Software Development department at the UNC at Chapel Hill University Libraries. I manage a department of roughly 11 software developers and serve as a personnel and/or project manager (in partnership with many wonderful colleagues) for projects related to the Carolina Digital Repository (https://cdr.lib.unc.edu/), UNC Digital Collections Repository (https://dcr.lib.unc.edu/), and other infrastructure addressing large-scale digital preservation, archival information management, and the Libraries' public catalog interface. My preferred communication method is email via the address on the Canvas course site. I will respond to requests within 24 hours. I am happy to arrange both individual and group video calls and will schedule several optional drop-in sessions. Please don't hesitate to contact me with any questions or concerns.

Course Design

This course was designed by Dr. Cal Lee and you will see quite a bit of his excellent content during this course. My primary goal as your instructor is to contextualize this content as a current manager of digital collections systems and staff and as a software engineer. You should finish this course not just with a solid grounding in the information systems that support digital collections but also a solid awareness of how this knowledge is applied, today, in major digital collections infrastructure projects.
Course Lessons

See the Schedule for important dates.

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Title</th>
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<tbody>
<tr>
<td>1</td>
<td>Nature and Characteristics of Contemporary Information Technologies</td>
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<tr>
<td>2</td>
<td>Technological Components: Historical Origins and Interoperability and General Overview of Computer Architecture</td>
</tr>
<tr>
<td>3</td>
<td>How to Read a Bit: Storage, Signal Detection, and the Logic of Bits</td>
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<td>4</td>
<td>Representation Information</td>
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<tr>
<td>5</td>
<td>Indirection by Design: Identifiers for Digital Objects, Operating Systems, and File Systems</td>
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<tr>
<td>6</td>
<td>Moving Bits around: Input/Output and Networks</td>
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<tr>
<td>7</td>
<td>Making and Running Software: Essential Components</td>
</tr>
<tr>
<td>8</td>
<td>Lessons and Strategies</td>
</tr>
</tbody>
</table>

Readings & Resources

Required Textbook Readings


Additional required readings are available online. Use the key below to locate specific course readings.

<table>
<thead>
<tr>
<th>Course Readings Key</th>
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<tbody>
<tr>
<td>B</td>
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<tr>
<td>R</td>
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<tr>
<td>O</td>
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<tr>
<td>W</td>
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<tr>
<td>C</td>
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</tbody>
</table>
* Accessing these materials requires you either to use a computer with a UNC IP address or visit the associated sites through a UNC proxy server.

Reading Tips

Try to familiarize yourself with the focal readings for each lesson. Complete a closer reading of materials related to the paper assignments you’ve selected.

Tips on reading strategically: [How to Read a Book](http://pne.people.si.umich.edu/PDF/howtoread.pdf)

Additional Resources

[Computer Science Unplugged](http://csunplugged.org/)

TOOLS TO SUPPORT CURATION OF DIGITAL COLLECTIONS

This course is not focused on specific applications. However, it is often helpful to know what software is available to support various activities that relate to the topics of the course. [COPTR directory of tools](http://coptr.digipres.org/)

Assignments

There are two types of written assignments in this course: online forum posts and short papers.

- **Online discussion forum posts** - Please post initially to all lesson forums by 11:59pm on the Wednesday before the lesson's assignment is due, and provide at least 1 response to the posts of others by 11:59pm on the Sunday that the lesson's assignment is due. Your final discussion grade will be based on an overall assessment of your contributions, and the lowest two forum grades will be dropped.

- **Short paper assignments** - There are seven assignments, but you only need to complete five of them (skip two). Each paper should be a maximum of one page and is due at 11pm on the Sunday at the end of each lesson (see the course schedule).

Final Exam

The final exam will include sets of short answer and long answer questions from which you will select a smaller number to answer. You will have three hours to complete the exam once you have started.

Evaluation & Grading

20 percent = Participation in class discussion

50 percent = Paper assignments (5 @ 10 percent each)
Grading Scale

The most important measures of your performance in this and all other classes at SILS are:

- your ability to engage in challenging materials with your fellow students;
- your reputation for insights and professionalism among your peers and with your instructor;
- your integration of course material with the other things you are learning both inside and outside the classroom; and
- your ability to apply what you’ve learned in your future career.

However, the conventions of academia dictate that I also assign labels (called grades) to your work on assignments and for the course as a whole.

Based on [UNC Registrar Policy for graduate-level courses](http://handbook.unc.edu/grading.html), both assignment and semester grades are assigned as in the table below. Few students will obtain an “H,” which signifies an exceptionally high level of performance (higher than an “A” in an A–F systems).

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Description of Letter Grade</th>
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<tbody>
<tr>
<td>H</td>
<td>Superior work: complete command of subject, unusual depth, great creativity or originality</td>
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<tr>
<td>P+</td>
<td>Above average performance: solid work somewhat beyond what was required and good command of the material</td>
</tr>
<tr>
<td>P</td>
<td>Satisfactory performance that meets course requirements (expected to be the median grade of all students in the course)</td>
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<tr>
<td>P-</td>
<td>Acceptable work in need of improvement</td>
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<tr>
<td>L</td>
<td>Unacceptable graduate performance: substandard in significant ways</td>
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<tr>
<td>F</td>
<td>Performance that is seriously deficient and unworthy of graduate credit</td>
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Academic Policies and Services

Honor Code

The University of North Carolina at Chapel Hill has had a student-led honor system for over 100 years. Academic integrity is at the heart of Carolina and we all are responsible for upholding the ideals of honor and integrity. The student-led Honor System is responsible for adjudicating any suspected violations of the Honor Code and all suspected instances of academic dishonesty will be reported to the Honor System. Information, including your responsibilities as a student, is outlined in the Instrument of Student Judicial Governance. Your full participation and observance of the Honor Code are expected.
You can read more about the honor system at [https://studentconduct.unc.edu/](https://studentconduct.unc.edu/)

**Generative AI**

**Generative AI is extremely useful; however, it has the following limitations:**

- How output is arrived at is not clear as the internal processes used to produce a particular output within the generative AI cannot be determined.
- The output is based on existing data (often scraped from online sources) and may reflect biases that should be acknowledged; it may also be inaccurate or entirely fabricated, even if it appears reliable or factual.
- AI evokes a range of intellectual property concerns; sourcing and ownership of information is unclear, and the status of AI output raises numerous questions—e.g., is output equivalent to a published resource? What citational responsibilities are in place for various AI interactions?

The following sections provide the philosophy and specific guidelines for using these tools and features (increasingly, generative AI capabilities will be integrated with everyday applications). **Unless I provide other guidelines for an assignment or exam, you should follow these guidelines.**

**Usage Philosophy**

Use of generative AI in your coursework is based on the following principles:

1. **AI should help you think.** Not think for you.
   Use these tools to give you ideas, perform research (in compliance with point 2 below), and analyze problems. Do not use them to do your work for you, e.g., do not enter an assignment question into ChatGPT and copy & paste the response as your answer.

2. **Engage with AI Responsibly and Ethically:** Engage with AI technologies responsibly, critically evaluating AI-generated outputs and considering potential biases, limitations, and ethical implications in your analysis and discussions. Utilize AI technologies ethically, respecting privacy, confidentiality, and intellectual property rights. Ensure that the data used for AI applications is obtained and shared responsibly and in compliance with relevant regulations.

3. **You are 100% responsible for your final product.**
   You are the user. If the AI makes a mistake, and you use it, it's your mistake. If you don't know whether a statement about any item in the output is true, then your responsibility is to research it. If you cannot verify it as factual, you should delete it. You hold full responsibility for AI-generated content as if you had produced the materials yourself. This means ideas must be attributed, facts are true, and sources must be verified.

4. **The use of AI must be open and documented.**
   The use of any AI in the creation of your work must be declared in your submission and explained. Details on how to source your AI usage are explained below.

5. **These guidelines are in effect unless I give you specific guidelines for an assignment or exam.** It is your responsibility to ensure you are following the correct guidelines.
6. Data that are confidential or personal should not be entered into generative AI tools.

Putting confidential or personal data (e.g., your One Card details) into these tools exposes you and others to the loss of important information. Therefore, do not do so.

The following sections provide the philosophy and specific guidelines for using these tools and features (increasingly, generative AI capabilities will be integrated with everyday applications). Unless I provide other guidelines for an assignment or exam, you should follow these guidelines.

Guideline Specifics

Not following these guidelines may be a reportable violation to the UNC Honor Court.

- Writing and Presentation: In principle, you may submit material that contains AI-generated content, or is based on or derived from it, if this use is properly documented. This may include drafting an outline, preparing individual sections, combining elements, removing redundant parts, and compiling and annotating references. Your documentation must make the process transparent – the submission itself must meet the relevant standards of attribution and validation.

- Readings and Discussions: Generative AI can be used to analyze readings. However, you must also do the readings. Generative AI analysis is not a substitute for reading the works themselves. Similarly, participating in online discussions of readings requires that you provide your own contributions. Unless I specifically allow it, do not generate responses to readings using AI.

- Research: If you use AI to support your research, you must account for and document your use. Possibilities include topic brainstorming, search assistance, source evaluation, and summaries and source documentation. Track your use of AI throughout these stages, and then document this assistance as you submit the project. Any material generated through AI in your projects should also be documented in your citations.

- Written & Oral Exams: Unless I explicitly grant permission, the utilization of AI tools is prohibited and could potentially constitute a reportable violation to the UNC Honor Court. If the use of AI tools is explicitly permitted, you are required to adhere to the guidelines concerning AI citation, verification, and clarity as outlined below.

Sourcing Use of AI

- Accuracy: Generative AI may invent both facts and sources for those facts. Verification is your responsibility, whether the source of the error is you or the AI makes no difference. You need to check the facts, the quotes, the arguments, and the logic, and document what you did to validate your material.

- Attribution: All ideas that are not originally your own have a source and that source must be attributed. Please be aware that generative AI tends to invent sources. You have a two-fold obligation with respect to attribution:
  - (1) If a source is identified, find and attribute the original source of the idea, identify the location of the text within the source, and provide a working link to the location (if the source is available online). If you are not able to locate the source, delete that content.
(2) Document the process by explaining how you used generative AI in a work statement that will accompany your submission of major projects in the class. As you submit a project, develop, and include an appropriate version of the below statements:

- “I attest that this project did not use AI at any stage in its development or in the creation of any of its components.”
- “I attest that this project made use of AI in the following ways:”
  - You must then use the following form to document your usage.

<table>
<thead>
<tr>
<th>Usage</th>
<th>Tool Used (e.g., ChatGPT-4)</th>
<th>How you edited the output, if at all</th>
<th>Conversation Link (If available)</th>
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<tbody>
<tr>
<td>Topic selection</td>
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<tr>
<td>Brainstorming and idea generation</td>
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<td>Research</td>
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<td>Source valuation</td>
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<td>Outlining/planning</td>
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<td>Drafting</td>
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<td>Media creation</td>
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<td>Peer review</td>
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<td>Revising</td>
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<td>Polishing</td>
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<td>Other</td>
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Adapted from https://provost.unc.edu/student-generative-ai-usage-guidance/

Plagiarism
Plagiarism is a serious violation of the Honor Code. To become more familiar with the issues surrounding plagiarism, and how to best avoid this academic issue, view this brief Plagiarism Tutorial created by the librarians of UNC-Chapel Hill, Duke University, NC State University, and NC Central University. If you have any questions about what constitutes plagiarism or how to properly cite a source, please contact your instructor.

IT Acceptable Use Policy

By attending the University of North Carolina at Chapel Hill, you agree to abide by the University of North Carolina at Chapel Hill policies related to the acceptable use of IT systems and services. The Acceptable Use Policy (AUP) sets the expectation that you will use the University’s technology resources responsibly, consistent with the University’s mission. In the context of a class, it’s quite likely you will participate in online activities that could include personal information about you or your peers, and the AUP addresses your obligations to protect the privacy of class participants. In addition, the AUP addresses matters of others’ intellectual property, including copyright. These are only a couple of typical examples, so you should consult the full Information Technology Acceptable Use Policy, which covers topics related to using digital resources, such as privacy, confidentiality, and intellectual property.

Additionally, consult the Safe Computing at UNC website for information about data security policies, updates, and tips on keeping your identity, information, and devices safe.

Accessibility Resources and Services

Accessibility Resources and Service (ARS – ars@unc.edu) receives requests for accommodations, and through the Student and Applicant Accommodations Policy determines eligibility and identifies reasonable accommodations for students with disabilities and/or chronic medical conditions to mitigate or remove the barriers experienced in accessing University courses, programs and activities.

ARS also offers its Testing Center resources to students and instructors to facilitate the implementation of testing accommodations.

Student Support

Cancellation, Withdrawal, and Suspension

A registered student may terminate registration in three possible ways: cancellation, withdrawal, and suspension, depending on the circumstances. For definitions of these terms and the steps necessary to process each of them, see the University Policy Memorandum.
Policy on Non-Discrimination

The University is committed to providing an inclusive and welcoming environment for all members of our community and to ensuring that educational and employment decisions are based on individuals’ abilities and qualifications. Consistent with this principle and applicable laws, the University’s Policy Statement on Non-Discrimination offers access to its educational programs and activities as well as employment terms and conditions without respect to race, color, gender, national origin, age, religion, genetic information, disability, veteran’s status, sexual orientation, gender identity or gender expression. Such a policy ensures that only relevant factors are considered, and that equitable and consistent standards of conduct and performance are applied.

If you are experiencing harassment or discrimination, you can seek assistance and file a report through the Report and Response Coordinators (email reportandresponse@unc.edu) or see additional contact info at safe.unc.edu (https://safe.unc.edu/) or the Equal Opportunity and Compliance Office at https://eoc.unc.edu/report-an-incident/.

Title IX Resources

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Reports can be made online to the EOC at https://eoc.unc.edu/report-an-incident/ or by contacting the University’s Title IX Coordinator (Elizabeth Hall, titleixcoordinator@unc.edu) or the Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu). Confidential resources include Counseling and Psychological Services and the Gender Violence Services Coordinators (gvsc@unc.edu). Additional resources are available at safe.unc.edu.


Counseling and Psychological Services

UNC-Chapel Hill is strongly committed to addressing the mental health needs of a diverse student body. The Heels Care Network (http://care.unc.edu/) website is a place to access the many mental health resources at Carolina. CAPS is the primary mental health provider for students, offering timely access to consultation and connection to clinically appropriate services. Go to their website https://caps.unc.edu/ (https://caps.unc.edu/) or visit their facilities on the third floor of the Campus Health building for an initial evaluation to learn more. Students can also call CAPS 24/7 at 919-966-3658 for immediate assistance.

Source: Student Safety and Wellness Proposal for EPC, Sep 2018
Student Support Email and Phone Numbers

- To report acceptable use problems at UNC-Chapel Hill, call 919-962-HELP or email: abuse@unc.edu (mailto:abuse@unc.edu).
- For issues involving copyrights or other policy concerns, call 919-445-9393 or email: copyright@unc.edu (mailto:copyright@unc.edu).
- For issues involving system security, call 919-962-HELP email: security@unc.edu (mailto:security@unc.edu).
- For any other issues, please send email to abuse@unc.edu (mailto:abuse@unc.edu).