Course description

A key aspect of informatics is how people and technologies co-evolve. Informatics isn't the friendliest term, but for the purposes of this course, think of it as people's pathways to information, through various systems, communities and infrastructures. In this class, we'll look at people as components of information systems, not just as their designers and users. We'll take a sociotechnical view of information systems, services and use, integrate knowledge from a broad range of disciplines, and apply those concepts to the information needs of specific groups of people. For the final project, you'll model the information behavior of a group or population of interest to you, trace their formal and informal information sources, pathways and practices, and recommend improvements that align with their social and technological worlds.

Course structure and philosophy

We will use Slack (lis694-cis702.slack.com). The class will be conducted as a seminar/studio where class time will be devoted to discussion of readings and student projects, as well as individual research. Completing assignments successfully will require that you spend significant time outside of class conducting your own research. In a studio setting, both in-class and online, class participation and attendance are critical. You will be expected to present work in progress, and contribute to idea generation and problem solving for other students’ projects as well.

Understand that the topic labels on each week’s session reflect the major points of emphasis, but related content may be presented in other sessions as well. Consider all lecture slides, discussion notes and content presented by both the instructor and your fellow students to be required reading/resources for the course.

Kokua

If you need reasonable accommodations to complete required coursework because of the impact of a documented disability, you are encouraged to explore the services of UH Manoa’s KOKUA program (http://www.hawaii.edu/kokuas/). KOKUA provides disability access services to individuals on a case-by-case basis, and students are not charged for these services.

Student Learning Outcomes/Objectives addressed

**CIS:**

- SLO1 Demonstrate understanding of research methods and subject knowledge
- SLO2 Synthesize diverse data, theories, and methods
- SLO3 Demonstrate the ability to conduct research

**LIS:**

- SLO4 Evaluate and apply information technologies
## Course schedule *(very much subject to change)*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings/Resources</th>
<th>Post to Slack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Aug 21</td>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>Aug 28</td>
<td>Classification and user representation</td>
<td>Bowker, Harford, Gladwell, Wexelblat</td>
</tr>
<tr>
<td>Week 3</td>
<td>Sep 4</td>
<td><em>No class meeting</em> (Labor Day)</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>Sep 11</td>
<td>Knowledge infrastructures</td>
<td>Novak, Edwards et al. 2007, Edwards et al. 2013, Zimmermann PhD only: Sawyer</td>
</tr>
<tr>
<td>Week 5</td>
<td>Sep 18</td>
<td>Classic to modern information retrieval</td>
<td>Swanson, Sholle, Dakka PhD only: Pantin</td>
</tr>
<tr>
<td>Week 6</td>
<td>Sep 25</td>
<td>Communities and information practices</td>
<td>Granovetter, Chatman, Agrawal, Freeburg</td>
</tr>
<tr>
<td>Week 7</td>
<td>Oct 2</td>
<td>Collection of personal information</td>
<td>Blanchette, Seife, Koen</td>
</tr>
<tr>
<td>Week 8</td>
<td>Oct 9</td>
<td>Use of personal information</td>
<td>Boutin, Lynch, Luckerson, Tucker, Axiom</td>
</tr>
<tr>
<td>Week 9</td>
<td>Oct 16</td>
<td>Data management, use and trust</td>
<td>Roberts, Racherla, Anderson, UHCC, MIT</td>
</tr>
<tr>
<td>Week 10</td>
<td>Oct 23</td>
<td><em>No class meeting</em> (AIS conference, Baltimore)</td>
<td>X-Informatics: Infrastructure</td>
</tr>
<tr>
<td>Week 11</td>
<td>Oct 30</td>
<td><em>No class meeting</em> (ASIS&amp;T conference, Washington, DC)</td>
<td>X-Informatics: Comment on two Infrastructure posts</td>
</tr>
<tr>
<td>Week 12</td>
<td>Nov 6</td>
<td>Design</td>
<td>Blandford, Carroll, Erickson, Jian, Harris PhD only: Lee</td>
</tr>
<tr>
<td>Week 13</td>
<td>Nov 13</td>
<td>Scientific knowledge production</td>
<td>Young, Kaplan, Gazan PhD only: Edwards 2017</td>
</tr>
<tr>
<td>Week 14</td>
<td>Nov 20</td>
<td>Scientometrics</td>
<td>Mingers, Davis, Lawrence, Scopus</td>
</tr>
<tr>
<td>Week 15</td>
<td>Nov 27</td>
<td>Final presentations</td>
<td></td>
</tr>
<tr>
<td>Week 16</td>
<td>Dec 4</td>
<td>Final presentations</td>
<td>X-Informatics: Final project writeup</td>
</tr>
<tr>
<td>Week 16.5</td>
<td>Dec 8</td>
<td><em>No class meeting</em></td>
<td>Individual concept map and reflections</td>
</tr>
</tbody>
</table>
Assignments

Weeks 4-9, and Week 12: Reaction/discussion papers (7 X 5% = 35% total)

By the start of each corresponding class session, post to the appropriate Slack channel a one-page paper with your personal reaction to—not a summary of—the week’s assigned readings. Your reaction/discussion papers need not cover every reading, and ideally should help inform your X-Informatics projects. Conclude your reaction paper with 2 concept map fragments (1 fragment = 2 concepts from different readings, and a non-obvious relationship between them). The reaction/discussion papers and concept maps will be shared and discussed in class.

Final project: X-Informatics (40% total)

For the final project, you will build on assignments, readings and discussions throughout the course to survey the sociotechnical information infrastructure of a community, and propose an information service and/or technology to address one or more information asymmetries or needs within the community you choose.

Weeks 6-7: Community Slack post and comments (5%). Post approximately 500 words in response to the questions below on Slack by start of class Week 6. These are formative posts, so you can include questions and areas you’re unsure about. Make substantive comments (~100 words or more) on two students’ community posts by start of class Week 7:

1. Identify your community (what is the X in your X-Informatics proposal?). How do you enter the community? Roughly how many people belong?
2. How do you move from information consumer/receiver to information contributor/giver within the community?
3. Which of the community’s information needs, practices, pathways and constraints are you choosing to focus on for this project? Why?
4. Cite two sources of evidence supporting your points, one from class resources.

Weeks 10-11: Infrastructure Slack post and comments (5%). Post approximately 500 words in response to the questions below on Slack by start of class Week 10. Here as well, these are formative posts, so you can include questions and areas you’re unsure about. Make substantive comments (~100 words or more) on two students’ infrastructure posts by Week 11:

1. What information do you get as a member of the community, and at what stages?
2. Who gives this information to you? Via what sociotechnical systems and infrastructure?
3. How are members and potential members classified and represented within information systems? What are the relevant metadata fields you would need to represent them, given the focus of your proposal?
4. Cite two sources of evidence supporting your points, one from class resources.

Week 12: Literature review synthesis table Slack post (5%). By start of class Week 12, develop a table that summarizes the individual studies you will incorporate into your final X-Informatics proposal, following the provided template. Incorporate at least 12 resources, at least 4 of which should be from the course readings. You are encouraged to incorporate resources from your previous Slack posts, as well as those of other students, and lecture slides as well.
**Week 16: Final writeup (25%).** By start of class Week 16, post to Slack your final paper (15-20 pages, double-spaced, in .pdf, .doc, or .docx format). Address each of the following points, integrating and refining your previous Slack posts and feedback throughout the course. Depending on the details of your proposed system, you might focus on questions that aren’t on this list—if so, email me as early as possible and we’ll discuss it.

1. **What does your proposed system do? What problem(s) is it designed to solve?**
2. **How does the system work? Include:**
   a. an overall summary
   b. three of the most relevant (and least obvious) aspects of the sociotechnical infrastructure on which it depends
   c. three detailed use scenarios describing how a user would proceed through common tasks.
3. **What metadata would you need to represent contributors to—and users of—the system?** For each, write one well-formed sample record in XML, including relevant data representation and metadata fields, including trust/permissions layers.
4. **How would you know the system was effective? What data would you need to collect during and apart from system use? What data couldn't you collect?**
5. **Discuss some consequences of your proposed system for the existing sociotechnical infrastructure.** What people, resources and data are included and excluded, and on what basis? What data, affordances and traditions might be gained and lost?
6. **Throughout your writeup, integrate at least 12 course concepts from your synthesis table. Provide a bibliography/reference list.**

**Weeks 15-16: Final presentation (required but not graded)**

Plan to make a brief presentation about your X-Informatics project during the final two weeks of the course. Details will be negotiated in class.

**Week 16 1/2: Individual concept map and reflections (15%)**

By Friday Dec 8, submit a 12-node concept map illustrating the concepts and relationships you’ve found most interesting, challenging and/or useful throughout the course (feel free to hand draw this and take a picture). These may include some, all or none of those you used in your X-Informatics project, but include a reference list of the resources you cite. Write a 3-4 page informal narration of the concept map, focusing on what you found most and least useful in the course as a whole, and why. Send this to me directly via Slack.

**Exercises and participation (10%)**

Active participation, live and online, is a crucial part of this course. Full marks will be given to students who attend every class meeting, participate actively and knowledgeably, initiate discussions and contribute to existing discussions, and contribute to an environment where all students are encouraged to participate.
Sample format and rubric for Synthesis Table  
(adapted from Lois Yamauchi, UH Educational Psychology)

Summary of community and proposed system: (1-2 paragraphs)

<table>
<thead>
<tr>
<th>Article citation</th>
<th>Summary of method and findings</th>
<th>Critiques and connections to other works</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rubric for Synthesis Table

<table>
<thead>
<tr>
<th>Component</th>
<th>Exceeds standards (A)</th>
<th>Meets standards (B)</th>
<th>Approaches standards (C-F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Number of studies reviewed</td>
<td>12 or more</td>
<td>9-11</td>
<td>8 or fewer</td>
</tr>
<tr>
<td>2. Relevance</td>
<td>It is clear how every cited work is related to and informs the proposed system.</td>
<td>A few of the cited works do not appear to be clearly related to the proposed system.</td>
<td>Many of the cited works do not appear to be clearly related to the proposed system.</td>
</tr>
<tr>
<td>3. Thoroughness of information</td>
<td>The information is complete and detailed, and communicates the essence of the cited work.</td>
<td>Some entries are incomplete or vague.</td>
<td>Many entries are incomplete or vague.</td>
</tr>
<tr>
<td>4. Level of analysis</td>
<td>Critiques and connections are insightful and non-obvious, reflecting accurate understanding of the issues and concepts.</td>
<td>The analysis reflects generally accurate understanding of the issues and concepts. A few critiques and connections are obvious, superficial or missing.</td>
<td>The analysis does not reflect accurate understanding of the issues and concepts. Many critiques and connections are obvious, superficial or missing.</td>
</tr>
<tr>
<td>5. APA style</td>
<td>The citations are error-free.</td>
<td>The citations include a few errors.</td>
<td>The citations include many errors.</td>
</tr>
<tr>
<td>6. Deadlines</td>
<td>The synthesis table was posted on time.</td>
<td>The synthesis table was posted up to 1 day late.</td>
<td>The synthesis table was posted more than 1 day late.</td>
</tr>
</tbody>
</table>
**Readings/Resources** (try to read in order listed; resources not linked here are posted to Slack)

**Needed throughout the course** (bookmark this)

http://guides.library.manoa.hawaii.edu/cis

**Week 2: Classification and user representation**

http://www.ics.uci.edu/~gbowker/classification/


http://www.newyorker.com/magazine/2011/02/14/the-order-of-things

http://alumni.media.mit.edu/~wex/panoptic-paper.html (preprint)

**Week 4: Infrastructures**


https://www.livescience.com/20727-internet-history.html

http://sawyer.syr.edu/publications/2013/sociotechnical%20chapter.pdf (preprint)
Week 5: Classic to modern IR


Dakka, Wisam, Gravano, Luis and Ipeirotis, Panagiotis G. (2012). Answering general time-sensitive queries. *IEEE Transactions on Knowledge and Data Engineering* 24(2), 220-235. ([Read first 3 pages only](https://pdfs.semanticscholar.org/c57f/8388ad2de6c61f2963dc0bfe2b2b5c8e2a58.pdf)


Week 6: Communities and information practices


(read all three abstracts on this page, then one full paper that interests you)

Week 7: Collection of personal information


**Week 8: Use of personal information**


[https://theringer.com/google-photos-data-collection-e8578b3256e0](https://theringer.com/google-photos-data-collection-e8578b3256e0)


**Week 9: Data management, use and trust**


[https://utexas.instructure.com/courses/1131276/assignments/3552064](https://utexas.instructure.com/courses/1131276/assignments/3552064)

University of Hawai‘i Community Colleges (2017). Hawaii industry sector data.

MIT Data management
Week 12: Design


Week 13: Scientific knowledge production


Kaplan, Sarah, Jonathan Milde and Ruth Schwartz Cowan (2012). Interdisciplinarity in Practice: A Case of a Nanotechnology Research Center (working paper).


Week 14: Scientometrics


