**ICS 691-2/CIS 704 Special Topics: Interdisciplinary Informatics**
**Spring 2014**

University of Hawaii Dept. of Information & Computer Sciences
Interdisciplinary PhD Program in Communication & Information Sciences
MW 10:30-11:45, Sakamaki D102 | CRN 86728 (ICS) | CRN 88330 (CIS)

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## Course description

Informatics isn't the friendliest term, but think of it as people's pathways to information. This seminar is designed to give students the chance to identify a specific community of people and their pathways to information, and learn how to do interdisciplinary research: discover, translate and apply solutions from outside the community to help those within. You might look at scientists, chefs, musicians, hobbyists, librarians, parents or members of any community. You'll inventory their information tools, resources and practices, identify bottlenecks, and propose specific solutions as a final project. 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.

## Course structure and philosophy

My main role in this class is to introduce you to concepts and issues related to interdisciplinary informatics, and to create an environment where you can apply them to communities and professional settings that interest you. Your role is to find and articulate the link between the concepts in the course and your academic and professional goals, demonstrate critical understanding, and develop the skills necessary to integrate knowledge from a broad range of disciplines and apply it to the information needs of specific groups of people.

Class participation and attendance are critical. In a studio setting, both in-class and online, you will be expected to present your own work in progress, but also 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/kokua/). KOKUA provides disability access services to individuals on a case-by-case basis, and students are not charged for these services. A student's disability status is considered confidential information and is only disclosed to faculty with the student's permission.

**Student Learning Outcomes/Objectives addressed**

ICS

*2. Identify, formulate and solve problems employing knowledge within the discipline;*
*3. Contribute effectively to collaborative team oriented activities;*
*4. Communicate effectively about computer science topics using appropriate media;*
*6. Engage in significant research in their area of specialization within the discipline and/or in projects that respond to community and industry needs.*

CIS

*(SLO1) Demonstrate understanding of research methods and subject knowledge in the field of Communication and Information Sciences*
*(SLO2) Synthesize diverse data, theories, and methods*
*(SLO3) Demonstrate the ability to conduct research*

LIS

*1a) Apply LIS theory and principles to diverse information contexts*
*2c) Develop, manage, and assess information services for specific users and communities*
*3c) Search, retrieve and synthesize information from a variety of systems and sources*
*4c) Apply current research findings to professional practice*
*5a) Communicate and collaborate with diverse colleagues, information seekers and community stakeholders*

**Course schedule *(very much subject to change)***

| Date | Topic | Readings/Resources | Assignment due |
|---|---|---|---|
| Week 1<br>1/13, 1/15 | Introduction,<br>Information asymmetry | Harford<br>Brown | (1/15) In class: Information asymmetry |
| Week 2<br>1/20, 1/22 | *No class meeting* (MLK Day + ALISE conference) | | |
| Week 3<br>1/27, 1/29 | Community informatics | Carroll & Rosson | (1/25) Laulima: Identifying your community |
| Week 4<br>2/3, 2/5 | Interdisciplinary concepts and practice | Szostak<br>Klein | (2/1) Laulima: Defining interdisciplinarity |
| Week 5<br>2/10, 2/12 | Studio session 1 | | Studio session 1 |
| Week 6<br>2/17, 2/19 | 2/17: *No class meeting* (Presidents Day)<br>2/19: Finding relevant concepts and disciplines | CIS Research Guide | (2/18) Laulima: Identifying bridge concepts |
| Week 7<br>2/24, 2/26 | *No class meeting* (NASA conference) | | Laulima exercise TBD |
| Week 8 3/3, 3/5 | 3/5: Studio session 2 | | Studio session 2 |
| Week 9<br>3/10, 3/12 | 3/10: Studio session 2<br>3/12: Interdisciplinary project examples | Kaplan et al. | |
| Week 10<br>3/17, 3/19 | Engaging your community | Center for Community Based Research<br>Hirsch Hadorn | (3/15) Laulima: Community engagement best practices<br>Midterm handed out |
| Week 11<br>3/24, 3/26 | *No class meeting* (Spring Break) | | |
| Week 12<br>3/31, 4/2 | Midterm review,<br>Supporting individual users | Nielsen | (3/30) Midterm |
| Week 13<br>4/7, 4/9 | Studio session 3 | | Studio session 3 |
| Week 14<br>4/14, 4/16 | Supporting social intelligence | Erickson<br>ICD | (4/12) Laulima: Open questions |
| Week 15<br>4/21, 4/23 | Assessing interdisciplinary work | Mansilla & Duraising | (4/19) Laulima: Assessment plan |
| Week 16<br>4/28, 4/30 | Work on final projects | | Informal studio session |
| Week 17<br>5/5, 5/7 | Final presentations and discussion | | (5/9) Final project writeup |

**Assignments**

**Studio sessions (10% X 3 = 30%).** Studio sessions are the heart of the course. This is where you give progress reports, share findings, discuss obstacles and best practices, and receive constructive input from other students. Critical to this process will be identifying and discussing "bridge" documents, tools and concepts that can be applied across communities. These are not formal presentations: every student will be expected to lead an informal discussion about their project for about 20 minutes per studio session, but all students are expected to raise questions and suggest solutions.

- ***Studio session 1:*** Finalize your goal for the course, e.g. a research, project or grant proposal. Identify your community, their information pathways and problems, generalize problems, brainstorm potential research approaches.
- ***Studio session 2:*** Refine and scope your community and their information pathways and problems, define and articulate the range of relevant literature and interdisciplinary concepts, report on engagement with the community. Translate and apply one idea to another student's project via "bridge" documents and /or concepts. Submit a one-page draft outline of your final project.
- ***Studio session 3:*** Finalize topics, processes and outcomes. Translate and apply one idea to another student's project via "bridge" documents and /or concepts. Submit a three-page outline of your final project.

**Midterm (15%).** You will have a take-home midterm that will assess your understanding and ability to apply course concepts.

**Final project (40%).** Your final project for the course will be the outcome of the goal you identify by the first studio session, and will demonstrate understanding of course content and the process of interdisciplinary research. We will negotiate final project details and expectations individually, but plan on submitting a paper of about 15-20 double-spaced pages, with 8-12 cited works.

**Exercises and participation (15%).** Active participation 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.

- ***Guidelines for opening discussions*:** Some class meetings will start with an opening discussion, where I will ask one or more students to discuss a specific point from the week's readings that you found interesting, confusing, questionable or otherwise noteworthy. Come prepared each week to summarize and discuss your chosen point in class, with the goal of eliciting class discussion.

- ***Guidelines for Laulima posts:*** Respond with a substantive post (at least a paragraph) that addresses all required elements, which I will include in the initial post of the thread. The response deadline will be a day or two before class, to give students a chance to read and respond. Failure to post, or not responding substantively, will reduce the participation component of your grade.

**Readings/Resources**

AIS (2013). Association for Interdisciplinary Studies: 2013 Conference
Call for proposals: http://miamioh.edu/aisconference2013/proposals.html
Conference program: http://miamioh.edu/documents/ais-conference/schedule.pdf

Brown, John Seely (2011). New Learners of the 21st Century (8:02). PBS Video
http://video.pbs.org/video/1767466213/

Carroll, John M., and Mary Beth Rosson (2013). Wild at Home: The Neighborhood as a Living Laboratory for HCI. ACM Transactions on Computer-Human Interaction 20(3), Article 16, 28p.

Center for Community Based Research (2014).
Definition: http://www.communitybasedresearch.ca/Page/View/CBR_definition
Principles: http://www.communitybasedresearch.ca/Page/View/Principles

CIS Research Guide (2013). Communication & Information Sciences Research Guide.
http://guides.library.manoa.hawaii.edu/cis

Erickson, Thomas (2009). 'Social' Systems: Designing Digital Systems that Support Social Intelligence. *AI and Society*, *23:*2, 147-166.

Harford, Tim (2007). The Undercover Economist. New York: Random House. Ch. 5, pp. 103-128.

Hirsch Hadorn, Gertrude, Christian Pohl, and Gabriele Bammer (2010). Problem solving through transdisciplinary research and integration. In Frodeman, R., Klein, J.T., Mitcham, C., and Holbrook, J.B. (eds.) *Oxford Handbook of Interdisciplinarity*. New York: Oxford University Press, 431-452.

ICD (2013). Incentive-Centered Design. University of Michigan Socio-Technical Infrastructure for Electronic Transactions (STIET). http://stiet.si.umich.edu/icd

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

Klein, Julie Thompson (1991). Interdisciplinarity: History, Theory and Practice. Detroit: Wayne State University Press. Ch. 3 and conclusion.

Mansilla, Veronica B. and Elizabeth D. Duraising (2007). Targeted Assessment of Students' Interdisciplinary Work: An Empirically Grounded Framework Proposed. Journal of Higher Education 78(2), 215-237.

Nielsen, Jakob (1993). Usability Engineering. San Francisco: Morgan Kaufmann. Chs. 2, 4.

Szostak, Rick (2007). How and Why to Teach Interdisciplinary Research Practice. Journal of Research Practice 3(2), M17. http://jrp.icaap.org/index.php/jrp/article/view/92/89