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Office Hours: Mondays 4-5 pm and by appointment

Course Description:

Survey class of resources and issues in science librarianship covering basic and applied sciences. The course will provide an introduction to the sociology and history of scientific disciplines, the structure of scientific information, and explore how librarians provide bridges between those seeking scientific information and the research literature.

Pre: LIS 601 or consent of instructor

Core competencies addressed:

Professional Ethics: codes and principles of ethical practice governing the field.  
Knowledge Organization: understand the organization of scientific information and knowledge.

Knowledge Dissemination--Service: concepts, principles and techniques that facilitate information access for users, interaction with users to provide consultation or guidance in use of information resources, assessment of user needs, diversity in user needs in the sciences and mathematics.

Knowledge Inquiry--Research: research methods and findings within the information fields; fundamentals of research, survey and data collection designs; familiarity with current literature in the field and related areas.

Institution Management: principles of planning, management, and evaluation of information centers; awareness of types of library and information professions; institutional change; oral and written communication skills; concepts for developing partnerships and collaborations; diversity of stakeholders; outreach and advocacy to specific audiences.

Social, Historical, and Cultural Context: concepts and knowledge regarding the socio-historical development of libraries, print culture, and information science; preservation of cultural resources; international dimensions of librarianship, information technology and policy, and social and cultural issues.

(See http://hawaii.edu/lis/courses.php?page=corecomp for detailed description)

Program learning objectives addressed:
LIS 660 Information Sources and Systems in Science

1. Demonstrate an understanding of the history, philosophy, principles, policies and ethics of science libraries and science librarianship
2. Demonstrate an understanding of the development, organization, and communication of scientific knowledge;
3. Apply basic competencies and knowledge that are essential for providing, managing, and designing information services and programs in a variety of information environments;
4. Demonstrate theoretical understanding of and basic competencies in evaluating, selecting and organizing information sources;
5. Demonstrate theoretical understanding of and basic competencies in storage, retrieval, dissemination, utilization and evaluation of information;
6. Demonstrate basic competencies required for instructional program development in particular information environments;
7. Demonstrate an understanding of research techniques and methods of applying new knowledge as it becomes available;
8. Demonstrate the professional attitudes and the interpersonal and interdisciplinary skills needed to communicate and collaborate with colleagues and information users;
9. Demonstrate basic competencies in the latest specialized information technologies;
10. Demonstrate an understanding of the above goals within the perspective of prevailing and emerging technologies.

Professional expectations:

LIS graduate students are responsible for observing the highest standards of intellectual and personal honesty in every aspect of their careers at the University of Hawaii. The University’s Student Conduct Code represents a zero tolerance policy, the penalties for academic dishonesty are severe and ignorance is not an acceptable defense. Please see http://hawaii.edu/lis/courses.php?page=profexp for links to UH policies.

Course objectives:

By the end of the course students will be able to:

1. Discern the similarities and differences between the science disciplines and those in arts, humanities, and social sciences.
LIS 660 Information Sources and Systems in Science

2. Understand the principle means by which science information is created and disseminated;

3. Gain insight into the approaches to gathering scientific information taken by scholars, students, and the non-scientist;

4. Become familiar with the characteristics of the literature of the sciences;

5. Apply principles of search strategy in seeking answers to reference questions;

6. Understand the attitudes, knowledge, and skills that are important in achieving accurate reference service;

7. Gain experience in making informative presentations to colleagues on topics of interest to the profession.

Course philosophy:

The classroom will serve as a collaborative laboratory in which to explore science librarianship through readings, discussions, practice, and presentations. Active participation in the class and completion of assignments is essential. At the close of this course students will have a greater understanding of the culture of science, how science is communicated and the tools and resources librarians use to help connect information seekers to the literature and data they need to pursue their research.

Research methods:

The course will involve evaluation of research articles, information retrieval, and instructional design.

Grading Scale out of 200 points:

A+=100-98%
A =97-94%
A-=93-90%
B+=89-87%
B= 86-83%
B-=82-80%
C+=79-77%
C= 76-73%
C-=72-70%
D+=69-67%
D =66-63%
D-=62-60%
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Course Requirements and Assignments:

Assignments are due at the start of class. (5% of the grade will be subtracted for every day late.)

1. Summary of weekly readings, discuss implications for science librarianship. 13 possible, 5 points each. Students will be asked to lead discussions. Note: Assigned readings are subject to change; students will be notified of changes in a timely manner. 65 points

2. Problem sets pertaining to science disciplines covered in class (general science, astronomy, physics, mathematics, chemistry, biological sciences, geological sciences, meteorology). 9 assignments, 5 points each. 45 points

3. Review of science book written for non-scientist. 750 words; authority of the author; other books in the field; how does this compare; bibliography of scholarly papers, scholarly books relevant to the book you’ve chosen. 20 points

4. Compare popular report of scientific discovery with original scholarly publication. 500 words 15 points

5. Presentation of profile of science library, department, or service—what subjects do they support, staffing, what services do they offer (reference, virtual reference- what kind, webpage, teaching, etc.), place in organization, organization of staff. 20 points

6. Final project; presentation on a scientific or technology subject; teach the class about the discipline, professional societies associated with discipline, resources, sample searches using vocabulary of subject. Provide handout(s) or webpage to class to support your instruction. 25 points

7. Class participation in discussions. 10 points
Class schedule

Note: schedule and readings are subject to change

WHAT IS SCIENCE?

1) January 11  Introductions
               Overview of class
               Sociology of science

January 18  HOLIDAY

2) January 25  Understanding Science
               Read for class:
               (Robert K. Merton 1968); (Robert King Merton 1942, reprint 1973);
               (Derek J. Price 1956);(Derek J. de Solla Price 1965); (Paula E.
               Stephan 1996)

3) February 1  Understanding Science, continued
               Read for class:
               (W.S. Brown, J.R. Pierce et al. 1967); (Derek J. Price 1956); (T.
               Swann Harding 1942); (Judith Wallen Hunt 1946); (Carl F. J.
               Overhage 1967); (John Martyn 1964); (William D. Garvey and
               Belver C. Griffith 1967)

SCIENCE LIBRARIANSHIP TODAY

4) February 8  General Science
               Read for class:
               (PEW Research Center for the People and the Press 2009); (Stefan
               Wuchty, Benjamin F. Jones et al. 2007); (Eugene Garfield 1979;
               Eugene Garfield 1979); (Francoise Boursin 1995); (Carol Tenopir,
               Donald W. King et al. 2003)

February 15  HOLIDAY
5) **February 22**  
**Astronomy**  
Read for class:  
(Asif-ul Haque and Paul Ginsparg 2009); (Edwin A. Henneken, Michael J. Kurtz et al. 2008); (Leith B. Woodall 2004); (Michael J. Kurtz, Guenther Eichhorn et al. 2006); (Edward E. Prather, Alexander L. Rudolph et al. 2009)

6) **March 1**  
**Physics**  
Read for class:  

7) **March 8**  
**Mathematics**  
Read for class:  
(Sara Rutter 2002); (N.D. Anderson, K. Dilcher et al. 1997); (Joan S. Birman 2000)

8) **March 15**  
**Chemistry**  
Read for class:  

**March 22-26**  
**SPRING BREAK**

9) **March 29**  
**Biological sciences, part 1 (organismal, ecological, applied)**  
Read for class:  
(Stephan Philippi and Jacob Kohler 2006)

Presentations on science librarianship begin.

10) **April 5**  
**Biological sciences, part 2 (cellular, molecular)**  
Read for class:  
(Dennis A. Benson, Mark S. Boguski et al. 1999; David J. McEnty Jo and Lipman 2001); (Jane Kaye, Catherine Heeney et al. 2009); (Science editors 1991); (Doug Howe and Seung Yon Rhee 2008); {Keeling, 2009 #647}
11) April 12  Geology, geophysics, meteorology  
Read for class:  

12) April 19  Engineering  
Read for class:  
(Daniel E. Atkins and et al. 2003; Virginia Kay Williams and Christine Lea Fletcher 2006; Megan S. Nelson 2007)

FUTURE OF SCIENTIFIC COMMUNICATION AND SCIENCE LIBRARIANSHIP

13) April 26  E-science, data intensive research, collaborative science, part 1  
Read for class:  
(Tony Hey and Jessie Hey 2006; (Mark S. Granovetter 1973); (Felice Frankel and Rosalind Reid 2008); (Ben Shneiderman 2008; 2009; Bryn Nelson 2009);(Engineering Committee on Science, and Public Policy (COSEPUP) 2009); (Vannevar Bush 1945)

Presentations on science resources instruction begin.

14) May 3  E-science, data intensive research, collaborative science, part 2  
Read for class:  
(ARL Workshop on New Collaborative Relationships 2006; Diana Rhoten 2007; 2008; Felice Frankel and Rosalind Reid 2008); (Joint Task Force on Library Support for E-Science 2007)

15) May 10  Final class meeting
Readings for LIS 660


