

SIS532: Sources and Services for Science and Engineering

SPRING 2013

Tues 6:30-9:10 p.m.

Instructor: Martha Earl, MSLS, AHIP

Office: Preston Medical Library, UT GSM

Office Phone: 865.305.6616

E-mail: mearl@utmck.edu

Office Hours: M-F 9:00-5:30

Available for consult M-F 5:15-6:15

COURSE DESCRIPTION

The instructor will provide an overview of sources and services in engineering, physical and life sciences. The course goal is to introduce students to the major sources and services for information retrieval in the natural and applied sciences. Students will be able to define the role of science libraries and information specialists, describe the information seeking skills of various scientific professionals, describe the tasks and skills involved in providing service to basic and applied scientists, learn about major reference and information sources and services, and be made aware of trends.

PREREQUISITES

Completion of course -- IS530—required; IS520 – recommended.

ABOUT THE COURSE

This course is meant to be an overview of major sources and services in the sciences and not an in-depth immersion. If you are interested in more in-depth learning regarding science libraries, I encourage you to consider a practicum.

The assignments in this course are designed to help you master the material and provide you with experience that will benefit your professional goals after completion of the degree. Knowledge of science resources and issues will prove beneficial in a variety of library and professional settings.

CONTACTING ME

Please use email as your primary way to contact me. I check my email frequently during the day and in the evening. If you want to call me, please do so during the 5:15 to 6:15PM time aforementioned. I am happy to answer any questions or clarify any assignment or topic mentioned in class or on the syllabus

DISABILITIES

Please contact the Office of Disability Services at 191 Hoskins Library at 865.974.6087 if you need course adaptations or accommodations. They will work with you to arrive at the appropriate program and register you for services. Also please contact me so that we can adapt any assignments accordingly.

READINGS

Required

Text: Information and the Professional Scientist and Engineer, edited by Virginia Baldwin and Julie Hallmark. New York: Haworth Press, 2001. (Co-published simultaneously as *Science and Technology Libraries*, Volume 21, Numbers 3/ 4 2001, also available online through UT libraries.)

On-line readings: There are some required readings that are available online through UTK libraries or from web sites.

Recommended

Text: Information Sources in Science and Technology, by C.D. Hurt. Englewood, CO: Libraries Unlimited, 1998. (Available electronically through UTK)

Text: Conducting Research Literature Reviews: From the Internet to Paper, by Arlene Fink. Thousand Oaks, CA: Sage, 2010.

Assignments (due dates on class schedule)

Interview with science librarian-10%
Book report and presentation-15%
Review of topic in databases-10%
Reference questions set one-15%
Reference questions set two-15%
Final project and presentation-25%
Class participation and discussion board posts-10%
TOTAL = 100%

Interview with science librarian: At the start of the semester, each student will choose a science librarian to interview. Preferably this will be done in person, but an email or telephone interview is acceptable. Questions will be provided. However, additional questions that the student wants to ask may be encouraged. This assignment will account for 10% of your grade. Students will make a 10-12 minute informal oral presentation to the class, and will be prepared to answer questions from their colleagues. Students will note the ways in which the librarian conducts her job, a typical day, client special needs, and other current trends. The student will also address how the librarian deals with the Special Libraries Association tracts or goals, the Medical Library Association accreditation process, or the ALA Science and Technology Section goals. The student will also prepare a written document that will be posted to the class BlackBoard site so it can be shared. The written document should be 3-4 pages. This will account for 10% of your grade.

Book report and presentation: Each student will select an autobiography or biography of a scientist to read and review. The emphasis will be on what motivates scientists, how they work, how they use the scientific literature, and their research processes and outcomes. Other sources may be used to explore the aspects of the scientists' lives and work. Students will submit book reports of 5-10 pages and prepare formal 10 minute presentations for their classmates. This assignment will account for 15% of the grade.

Review of topic in databases: Each student will select a topic and search for information on that topic in the major related databases. A description of the search strategy used, examples of the search results, and an analysis of the ease of the interface will be prepared as a written document. Students will compare and contrast databases for the use of different types of users. This will account for 10% of your grade.

Reference questions: Students will work to find the answers to two assigned groups of reference questions covering the sciences and submit this as a written document. Each will account for 15% of the grade respectively.

Final project and presentation: Students will select from a list of research projects or select others with approval of instructor. They will plan a search strategy that will result in a comprehensive search of databases, online, and print resources. They will analyze their results to provide an answer to the research question. They will detail the literature review, question or hypothesis, methods, results, discussion, and conclusion. Students will prepare a 12-15 minute presentation detailing their question, search strategy, and results of their analysis and be prepared to answer questions from their colleagues. A PowerPoint template will be provided. The presentation or outline will be submitted to the Blackboard site to be shared. This assignment will account for 25% of your grade.

Class participation and discussion boards: Each student will participate in class. Students will post to the Blackboard discussion group on assigned topics. Students may post to any five of the discussion boards provided by assigned dates. Multiple posts of two or three paragraphs may earn additional points and contributions to more than five discussion boards. This is worth 10% of the grade.

HOW TO COMPUTE YOUR GRADE

All assignments will receive a letter grade ranging from A+ to F-. The number of points you can earn on a particular assignment can be calculated by multiplying the number of points for a particular grade (see table below) by the weighting for the assignment.

<u>Letter</u>	<u>Grade</u>	<u>Points</u>	<u>Letter</u>	<u>Grade</u>	<u>Points</u>
A +		100	C-		70
A		95	D+		67
A -		90	D		65
B+		87	D-		60
B		85	F+		57
B-		80	F		55
C+		77	F-		50
C		75			

For example, if you receive a "B" on an assignment worth 20% of your grade, you have earned 20 points ($100 \times .20 = 20$). Here's how it works for the course grade: to earn an "A" you must earn at least 90 points; for a "B" you need at least 80 points; for a "C" you need at least 70 points, and for a "D" you must have at least 60 points. You will receive an "F" if you have less than 60 points.

ATTENDANCE

Attendance is highly encouraged because class discussions are an important part of mastering the material. Frequent absences will result in a grade reduction. It is MANDATORY to attend ALL the meetings with final project presentations. This is a courtesy to your colleagues who are making their presentations.

CHEATING AND PLAGIARISM

When you write for this class or when you are making a presentation, remember that any sources you use should be credited and that materials on the web should be cited too. Use Chicago style for your citations. If you use someone's words or ideas without attribution - that's plagiarism. Remember cheating and plagiarism are violations of scholarly and professional ethics and University policy; don't do it! **If you cheat or plagiarize, you will fail the course;** and could face further actions. Further information is available in Hill Topics, the UTK student handbook.

SCHEDULE OF TOPICS, READINGS AND ASSIGNMENTS

Week	Class dates	Topics	Reading	Assignment Due
The Work and Role of Scientists and Scientific Information				
1	1/15	<p>Introduction to the course, instructor and requirements.</p> <p>Definition of science and impact on society</p> <p>Classification of the sciences</p> <p>Role of science reference in libraries</p> <p>Assignment: Interview with a sciences librarian</p> <p>Assignment: Discussion post on class goals</p>	<p>Hurt: Preface and Chapter 1</p> <p>Review SLA, MLA, and ACRL professional association websites.</p> <p>Compare articles in <i>Science</i> or <i>Nature</i> versus <i>Scientific American</i> or <i>Popular Science</i>, articles in eMedicine or <i>American Family Physician</i> versus MedlinePlus, or articles on WebMD versus MedlinePlus for discussion on January 22.</p> <p>Review NSF AAAS website and Center for Public Engagement with Science and Technology.</p> <p>Read related article: Leshner, Alan I. "Public engagement with science. (Editorial)." <i>Science</i> 299.56 09 (Feb 14, 2003): 977(1).</p> <p>Read articles by Nisbet, Bubela, and Grorud-Colvert.</p> <p>Review ACR Information Literacy Standards for Science and Engineering Technology, and Pew Report on Public Praises Science.</p>	<p>Interview 1/29</p> <p>Goals post 1/22</p>
2	1/22	<p>How scientists work and publish</p> <p>Cycle of scientific information</p> <p>Reference sources: indexes, abstracts, and review literature</p> <p>Ownership and access</p>	<p>Continue reading Hurt.</p> <p>Fink: Chapter 1</p> <p>Read articles by Tenopir, Braun, Bjork, Henderson, Bosch, and VanOrdell.</p> <p>Post to discussion board on</p>	<p>Discussion Post I due 2/5</p> <p>Interview Project due 1/29</p>

		Principal supporting literature guides and sources Reference services Assignment: Post to Blackboard discussion list on assigned topics	how librarians contribute to advance scientific knowledge, or on what you think causes disconnect between science and the public. Work on interview assignment.	
Information Seeking Skills of Scientists and Basic Sciences and Engineering				
3	1/29	Presentations of interviews Assignment: Book report	Hurt: Read introductory section of each subject chapter. Baldwin and Hallmark: Read Introduction, Flaxbart, Coates, Fraser, Joseph, and Pinelli. Articles by Tenopir, and Evans 2008	Interview Due Discussion Post I due 2/5 Book Report due 2/19
4	2/5	Discussion of Blackboard postings Information seeking skills of scientists Classification schemes in the sciences Discipline: General science sources Open access and the future of scientific communications General or multi-disciplinary indexes	Continue working on book report. Review Biomed Central site, ARL Open Access site, ALA, and SPARC. Read Weller, Turtle and Courtois, Haines, and Hightower and Caldwell.	Discussion Post I Due Book Report Due 2/19 Discussion Post II due 2/12
5	2/12	Guest speaker: Ann Viera Evaluation of information retrieval and expert searching Veterinary librarianship IACUC searches Discipline: Biology and the Life Sciences	Hurt: Sections 1-10 Review UTK research guides and databases in the sciences IACUC and UT CVM	Discussion Post II Due
6	2/19	Class presentations of book reports Assignment: Review of Topics	Read SOAP. Review STM report. Recommended reading:	Book Report papers and presentations Due

			NNLM e-science webinar resources list	Review of Topics due 3/12
7	2/26	Book reports Ethics of human and animal research Discipline: Chemistry	Baldwin and Hallmark: Caracuzzo, Wagner, and Wild CAS-STN SciFinder How To Guides and Strategies Baldwin and Hallmark: Sweetkind-Singer, Allen Hurt : Sections 11-21 Reaxys Quick Reference Guide Research site related to human and animal research Office of Human Research Protection Belmont Report Related UTK research guides and databases Post to discussion list on ethical and political issues involved in human and animal research.	Review of Topics due 3/12
8	3/5	Asynchronous. Professor available via email.	Continue readings and assignments.	
9	3/12	Citation analysis and bibliometrics Disciplines: Physical Sciences, Astronomy and Earth Science, and Mathematics, Computer Science	Related UTK research guides and databases UTHSC UTK Research Guides on Google Scholar and Assessing the Impact of Research Articles by Garfield, Gray & Hodkinson, Kulkarni, Van Aalst, Hirsch, Meho Articles and presentation by Jasco IMU report Review Garfield University of	Review of Topics Due Discussion Post III due 3/19 Reference Set I due 4/2

			<p>Pennsylvania site.</p> <p>AURA and SARA sites</p> <p>Post to discussion list on how biases inherent in circles of information impact scientific research. How can libraries play a role in broadening or changing circles ?</p>	
10	3/19	<p>Guest speaker: Sarah Wright, Cornell</p> <p>Disciplines: Agriculture, Environmental Science, and Engineering</p> <p>Dialog and STN sites</p> <p>Reference sources: Patents, data collections, proceedings, reports, dissertations and theses</p>	<p>Related UTK research guides and databases</p> <p>DIALOG site</p> <p>American Society of Testing and Materials site</p> <p>Fink: Chapters 2 and 3</p>	<p>Reference Set I Due 4/2</p> <p>Discussion Post IV due 4/9</p>

Week	Class dates	Topics	Reading	Assignment
Health Sciences and Reference Management Issues				
11	4/2	<p>Discussion of reference questions</p> <p>Disciplines: Health Sciences</p> <p>Evidence-Based Medicine</p> <p>Assignment: Final paper and presentation</p>	<p>Review Preston Medical Library and UTHSC library resource sites</p> <p>PubMed tutorial</p> <p>Duke tutorial</p> <p>JAMA series</p> <p>Suggested reading: <u>Introduction to Reference Sources in the Health Sciences</u></p>	Reference Set II due 4/23
12	4/9	<p>Digital science libraries</p> <p>Institutional repositories</p> <p>Federated searching</p> <p>Disciplines: Nursing, Complementary Health, Pharmacy</p> <p>Consumer health information</p>	<p>Hey, 2006</p> <p>ARL-E-Science talking points</p> <p>ARL-Blake</p> <p>Read article: "Harnessing power of digital data for science and society," 2009</p>	<p>Discussion Post IV Due</p> <p>Reference Set II due 4/18</p> <p>Final Presentation due 4/30</p>

		<p>Readability scales</p>	<p>CNI, CLIR, DLF, D2F, D2C2 sites</p> <p>Fink: Chapters 4 and 5</p> <p>EBM/EBP sites—UNC, Acestar, UIC</p> <p>Memphis Public Library and Preston Medical Library consumer health sites</p> <p>TL article on drug information sites</p> <p>MLA CAPHIS site</p> <p>Pew report on Internet and American life for health, science, and libraries</p> <p>Westcott and Wallace articles</p> <p>ACRL trends</p>	<p>Final Paper due 5/7</p>
13	4/16	<p>Guest speaker: Michael Lindsay, UT Preston Medical Library</p> <p>Discussion of reference questions</p> <p>Virtual reference and partnering</p> <p>Discussion of licensing agreements and library types</p> <p>Negotiating licenses</p> <p>Knowledge management</p> <p>Fee based reference</p> <p>Consultation</p> <p>End user training</p> <p>Accountability and stats</p>	<p>AskaScientist site</p> <p>Read UTK article or view presentation on virtual reference</p> <p>ALA-PLA Essentials in Negotiating Contracts</p> <p>Art of the Deal-Ashmore and Grogg</p> <p>Brennan on licensing electronic resources</p> <p>NISO, SERU, and SUSHI sites</p> <p>SLA KM site</p> <p>Tenopir article on ROI</p> <p>Post to discussion list on how licensing issues differ for special versus academic, public, and school libraries.</p>	<p>Reference Set II Due 4/23</p> <p>Discussion Post V due 5/7</p> <p>Final Presentation due 4/30</p> <p>Paper due 5/7</p>

14	4/23	Asynchronous. Professor available for one hour to answer questions.	Continue readings and assignments.	Discussion Post V and any additional posts due 5/7
Final	4/30	Final project presentations		Final Project Presentations Due Final Paper due 5/7