

# **SIS532: Sources and Services for Science and Engineering**

**SPRING 2009**

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

**DE ONLY**

**Instructor: Martha Earl, MSLS, AHIP**

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Available for consult M-F 5:15-6:00

## **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 6PM 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 Sources in Science and Technology, by C.D. Hurt. Englewood, CO: Libraries Unlimited, 1998. (Available electronically through UTK)

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

### **Recommended**

**Texts:** 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.)

**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 7-10 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 2-4 pages. This will account for 10% of your grade.

**Book report and presentation:** Each student will select an autobiography 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 informal 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. Students will prepare formal 10 minute presentations for their classmates. 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. This will account for 10% and 15% of the grade respectively.

**Final project and presentation:** Students will select from a list of research projects. 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 15-20 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 20% of your grade.

**Class participation:** Each student will participate in class. Students will post to the Blackboard discussion group on assigned topics. 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.

Letter		Letter	
<u>Grade</u>	<u>Points</u>	<u>Grade</u>	<u>Points</u>
A +	140	C-	60
A	130	D+	50
A -	120	D	40
B+	110	D-	30
B	100	F+	20
B-	90	F	10
C+	80	F-	0
C	70		

For example, if you receive a "B" on the topic presentation (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 120 points; for a "B" you need at least 90 points; for a "C" you need at least 60 points, and for a "D" you must have at least 30 points. You will receive an "F" if you have less than 30 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**

<b>Week</b>	<b>Class dates</b>	<b>Topics</b>	<b>Reading</b>	<b>Assignment Due</b>
<b>The Work and Role of Scientists and Scientific Information</b>				
<b>1</b>	<b>1/13</b>	<p>Introduction to the course, instructor and requirements.</p> <p>Definition of science and impact on society Role of science reference in libraries</p> <p>Assignments: Interview with a health sciences librarian Readings and website reviews</p>	<p>Hurt: Preface and Chapter 1. Review SLA and MLA professional association websites.</p> <p>Compare articles in <i>Science</i> versus <i>Scientific American</i>, and articles on eMedicine with articles on WebMD for discussion on January 20.</p> <p>Review AAAS website and Center for Public Engagement with Science and Technology. Read related article: Leshner, Alan I. "Public engagement with science. (Editorial)." <i>Science</i> 299.5609 (Feb 14, 2003): 977(1).</p>	<b>Interview 1/27</b>
<b>2</b>	<b>1/20</b>	<p>How scientists work and publish Cycle of scientific information Ownership and access Classification of sciences Principal supporting literature guides and sources Reference services</p>	<p>Continue reading Hurt. Read articles by Forsman, Weise, and Tenopir.</p> <p>Post to discussion board on how librarians contribute to advance scientific knowledge, or on what you think causes disconnect between science and the public-2 discussion points.</p> <p>Work on interview assignment.</p>	<b>Discussion post and interview due 1/27</b>
<b>Information Seeking Skills of Scientists and Basic Sciences and Engineering</b>				
<b>3</b>	<b>1/27</b>	<p>Discussion of Blackboard postings Informal presentations of interviews</p> <p>Information seeking skills of scientists Formats of reference sources Discipline: General science sources</p> <p>Assignment: Book report</p>	<p>Hurt: Read introductory section of each subject chapter.</p> <p>Baldwin and Hallmark: Read Introduction, Flaxbart, Coates, and Fraser.</p> <p>Articles by Tenopir.</p>	<p><b>Interview Project Due</b></p> <p><b>Book Report Due 2/10</b></p>
<b>4</b>	<b>2/3</b>	<p>Reference sources-Indexes, abstracts, and review literature Discipline: Biology and the Life Sciences Open access and the future of scientific communications</p>	<p>Continue working on book report.</p> <p>Review Biomed Central site, ALA Open Access site, Wikipedia article on Peer Review.</p> <p>Read Weller and Dagenais.</p>	<p><b>Book Report Due 2/10</b></p> <p><b>Discussion Board due 2/10</b></p>

			Post to discussion list on how realistic is the move to open access, pro and con-2 discussion points	
<b>5</b>	<b>2/10</b>	Class presentations of book reports Guest speaker on Chemistry resources Discipline: Chemistry Class discussion on open access issues  Assignment: Reference Questions, Set I	Baldwin and Hallmark: Wagner, Joseph Hurt: Sections 1-10	<b>Book Report Due</b>  <b>Discussion Board Due</b>  <b>Reference Set I due 3/3</b>
<b>6</b>	<b>2/17</b>	Evaluation of information retrieval Guest speaker on Agriculture/Veterinary Medicine and IACUC searches Discipline: Agriculture, Veterinary Current awareness sources and services Bibliographic control sources	Baldwin and Hallmark: Caracuzzo Dewdney and Tenopir articles Continue working on questions	<b>Reference Set I due 3/3</b>
<b>7</b>	<b>2/24</b>	Reference sources: Patents, data collections, proceedings, reports, dissertations and theses Guest speaker from ORNL Disciplines: Physical sciences and computer science End user training Dialog, STN, etc.	Baldwin and Hallmark: Wild, Sweetkind-Singer, Allen Continue working on questions	<b>Reference Set I due 3/3</b>

<b>Week</b>	<b>Class dates</b>	<b>Topics</b>	<b>Reading</b>	<b>Assignment</b>
<b>8</b>	<b>3/3</b>	Discussion of reference questions Guest speaker on Engineering resources Discipline: Engineering Citation analysis and bibliometrics Eprints and informal networks Digital science libraries Institutional repositories  Assignment of Reference Set II	Hurt : Sections 11-21  Songer article.  Poster abstract by Vaughn and Wright.	<b>Reference Set I Due</b>
<b>Health Sciences and Reference Management Issues</b>				
<b>9</b>	<b>3/10</b>	Asynchronous-professor available for one hour to answer questions.	Continue readings and assignments.	<b>Reference Set II due 4/7</b>

<b>10</b>	<b>3/24</b>	Virtual reference and partnering Fee-based reference/ Knowledge management Discipline: Health sciences  Assignment of final paper and presentation due 4/28	Review AskaScientist site Read UTK article or view presentation on virtual reference Read Lett article or view presentation on KM in science libraries Suggested reading: <u>Introduction to Reference Sources in the Health Sciences</u>	<b>Reference Set II due 4/7</b>
<b>11</b>	<b>3/31</b>	Internet search engines Evaluating websites Consumer health information Readability scales Evidence-based medicine  Assignment of review of topic in databases	PubMed tutorial Duke tutorial Pew report on consumers and health on the Internet  Post to discussion board an example of an easy to read consumer site and an example of a bogus website	<b>Reference Set II due 4/7</b>  <b>Discussion posts due 4/14</b>  <b>Review of topics due 4/14</b>
<b>12</b>	<b>4/7</b>	Asynchronous—professor available for one hour to answer questions.	Continue readings and assignments.	<b>Reference Set II Due</b>
<b>13</b>	<b>4/14</b>	Discuss questions Database topics presentations Key government and organizational sites Guest speaker on GIS	Review government and organization websites—GIS, NIH, NSF, HIT, etc.	<b>Discussion posts Due</b>  <b>Review of topics Due</b>
<b>14</b>	<b>4/21</b>	Collection and professional and institutional concerns Statistics and accountability Managing science reference services Collection development Funding Professional development and staff training Library science research Skills needed for science librarians Job hunting Practicums Guest speaker on managing science library reference services	Review collection development vendor sites, such as E-Streams, Majors, YBP, Rittenhouse, Ingram, and other sources of reviews, such as Amazon and Barnes and Noble. Note LJ and Choice reviews. Also, reviews from professional journals.  Read Sapp article, Vanderbilt article on skills, and articles on reference statistics and staffing.	<b>Final project due 4/28</b>

<b>15</b>	<b>4/28</b>	Final project presentations		<b>Final projects Due</b>
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