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  
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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

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

Recommended
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.

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Points</th>
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<th>Points</th>
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<tbody>
<tr>
<td>A +</td>
<td>100</td>
<td>C-</td>
<td>70</td>
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<tr>
<td>A</td>
<td>95</td>
<td>D+</td>
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<td>A -</td>
<td>90</td>
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<td>B+</td>
<td>87</td>
<td>D-</td>
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<td>B</td>
<td>85</td>
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<td>57</td>
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<td>B-</td>
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<td>F</td>
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<td>C+</td>
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<td>F-</td>
<td>50</td>
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<td>C</td>
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For example, if you receive a "B" on an assignment worth 20% of your grade, you have earned 20 points (100 X .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.
<table>
<thead>
<tr>
<th>Week</th>
<th>Class dates</th>
<th>Topics</th>
<th>Reading</th>
<th>Assignment Due</th>
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</table>
| 1    | 1/5         | Introduction to the course, instructor and requirements.                 | Hurt: Preface and Chapter 1 Review SLA, MLA, and ACRL professional association websites.  
Class of the sciences  
Role of science reference in libraries  
Assignment: Interview with a sciences librarian  
Assignment: Discussion post on class goals  
Compare articles in *Science* or *Nature* versus *Scientific American* or *Popular Science*, articles in *eMedicine* or *American Family Physician* versus *MedlinePlus*, or articles on *WebMD* versus *MedlinePlus* for discussion on January 22.  
Review NSF AAAS website and Center for Public Engagement with Science and Technology.  
Read related article: Leshner, Alan I. "Public engagement with science. (Editorial)." *Science* 299.56 09 (Feb 14, 2003): 977(1).  
Read articles by Nisbet, Bubela, and Grorud-Colvert.  
Goals post 1/22 |
| 2    | 1/22        | How scientists work and publish  
Cycle of scientific information  
Reference sources: indexes, abstracts, and review literature  
Ownership and access | Continue reading Hurt.  
Fink: Chapter 1  
Read articles by Tenopir, Braun, Bjork, Henderson, Bosch, and VanOrdel.  
Post to discussion board on | Discussion Post I due 2/5  
Interview Project due 1/29 |
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<tr>
<th>Date</th>
<th>Assignment</th>
<th>Reading/Research</th>
<th>Discussion/Assignments</th>
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<tbody>
<tr>
<td>1/29</td>
<td>Presentations of interviews</td>
<td>Baldwin and Hallmark: Read Introduction, Flaxbart, Coates, Fraser, Joseph, and Pinelli.</td>
<td>Interview Due&lt;br&gt;Discussion Post I due 2/5&lt;br&gt;Book Report due 2/19</td>
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<td>Assignment: Book report</td>
<td>Articles by Tenopir, and Evans 2008</td>
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<td>2/5</td>
<td>Discussion of Blackboard postings</td>
<td>Continue working on book report.</td>
<td>Discussion Post I Due&lt;br&gt;Book Report Due 2/19&lt;br&gt;Discussion Post II due 2/12</td>
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<td>Information seeking skills of scientists</td>
<td>Review Biomed Central site, ARL Open Access site, ALA, and SPARC.</td>
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<td>Classification schemes in the sciences</td>
<td>Read Weller, Turtle and Courtois, Haines, and Hightower and Caldwell.</td>
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<tr>
<td>2/12</td>
<td>Guest speaker: Ann Viera</td>
<td>Hurt: Sections 1-10</td>
<td>Discussion Post II Due</td>
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<td>Evaluation of information retrieval and expert searching</td>
<td>Review UTK research guides and databases in the sciences</td>
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<td>Veterinary librarianship</td>
<td>IACUC and UT CVM</td>
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<td>IACUC searches</td>
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<td>Discipline: Biology and the Life Sciences</td>
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<tr>
<td>2/19</td>
<td>Class presentations of book reports</td>
<td>Read SOAP.</td>
<td>Book Report papers and presentations Due</td>
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<td>Assignment: Review of Topics</td>
<td>Review STM report.</td>
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<td>Recommended reading:</td>
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<td>Book reports</td>
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| 7 | 2/26 | 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. |
|   |   | NNLM e-science webinar resources list  
Review of Topics due 3/12 |
| 8 | 3/5 | Asynchronous. Professor available via email. |
| 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 |
<p>|   |   | Review Garfield University of |</p>
<table>
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<th>Assignment</th>
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</table>
| 10   | 3/19        | Guest speaker: Sarah Wright, Cornell  
Disciplines: Agriculture, Environmental Science, and Engineering  
Dialog and STN sites  
Reference sources: Patents, data collections, proceedings, reports, dissertations and theses | Related UTK research guides and databases  
DIALOG site  
American Society of Testing and Materials site  
Fink: Chapters 2 and 3 | Reference Set I Due 4/2  
Discussion Post IV due 4/9 |
| 11   | 4/2         | Discussion of reference questions  
Disciplines: Health Sciences  
Evidence-Based Medicine  
Assignment: Final paper and presentation | Review Preston Medical Library and UTHSC library resource sites  
PubMed tutorial  
Duke tutorial  
JAMA series  
Suggested reading: *Introduction to Reference Sources in the Health Sciences* | Reference Set II due 4/23 |
| 12   | 4/9         | Digital science libraries  
Institutional repositories  
Federated searching  
Disciplines: Nursing, Complementary Health, Pharmacy  
Consumer health information | Hey, 2006  
ARL-E-Science talking points  
ARL-Blake  
Read article: “Harnessing power of digital data for science and society,” 2009 | Discussion Post IV Due  
Reference Set II due 4/18  
Final Presentation due 4/30 |
<table>
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<tr>
<th>Date</th>
<th>Event/Assignment</th>
<th>Details</th>
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| 4/13 | Readability scales | CNI, CLIR, DLF, D2F, D2C2 sites  
Fink: Chapters 4 and 5  
EBM/EBP sites—UNC, Acastar, UIC  
Memphis Public Library and Preston Medical Library consumer health sites  
TL article on drug information sites  
MLA CAPHIS site  
Pew report on Internet and American life for health, science, and libraries  
Westcott and Wallace articles  
ACRL trends |
| 4/16 | Guest speaker: Michael Lindsay, UT Preston Medical Library  
Discussion of reference questions  
Virtual reference and partnering  
Discussion of licensing agreements and library types  
Negotiating licenses  
Knowledge management  
Fee based reference  
Consultation  
End user training  
Accountability and stats | AskaScientist site  
Read UTK article or view presentation on virtual reference  
ALA-PLA Essentials in Negotiating Contracts  
Art of the Deal-Ashmore and Grogg  
Brennan on licensing electronic resources  
NISO, SERU, and SUSHI sites  
SLA KM site  
Tenopir article on ROI  
Post to discussion list on how licensing issues differ for special versus academic, public, and school libraries. |
<p>| 4/23 | Reference Set II Due 4/23 |
| 5/7 | Final Presentation due 4/30 |
| 5/7 | Paper due 5/7 |</p>
<table>
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<tr>
<th>14</th>
<th>4/23</th>
<th>Asynchronous. Professor available for one hour to answer questions.</th>
<th>Continue readings and assignments.</th>
<th>Discussion Post V and any additional posts due 5/7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final</td>
<td>4/30</td>
<td>Final project presentations</td>
<td></td>
<td>Final Project Presentations Due Final Paper due 5/7</td>
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