VALDOSTA STATE UNIVERSITY
MASTER OF LIBRARY & INFORMATION SCINCE
MLIS 7160 Science & Technology Information Services
Syllabus—Fall Semester 2008
Three Credit Hours

Instructor:
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Catalog Description
Prerequisites: MLIS 7100 or consent of the instructor. A broad-based survey of the processes and resources used to provide reference services in various science and technology settings. Content represents the fields of biomedical and life sciences, earth and environmental studies, computer science, astronomy, physics, chemistry, and mathematics.

Course Outcomes
At the conclusion of the course, the students will be able to:

- Define broad categories of science and technology (sci-tech) subjects
- Identify publication formats unique or integral to sci-tech information dissemination
- Recognize the information-seeking processes that are unique to scientists
- Relate the scientific publishing cycle model to sci-tech knowledge management
- Identify materials essential to fulfilling general sci-tech ready reference requests
- Utilize both traditional and alternative resources to locate information for research queries associated with particular sci-tech fields
- Locate professional sources that support the development of sci-tech collections
- Prepare a policy statement relevant to sci-tech information management

Textbook

Mount, Ellis and Beatrice Kovacs. *Using Science and Technology Information Resources*. Oryx Press, 1991. ISBN: 0897745930

Note: About 10 copies of this book are available from Alibris (http://www.alibris.com/) for under $40. 10 copies of the book are also available through the VSU Bookstore. If you are buying your books with Financial Aid money, place your order through the VSU Bookstore.

By mutual agreement between the MLIS Program and the Interlibrary Loan (ILL) office in the Odum Library, required textbooks for courses offered this semester will not be available for interlibrary loan. ILL staff in the Odum Library are **not** responsible for obtaining books that are required texts for any VSU student during any given semester. The complete MLIS Policy on Interlibrary Loan Requests for Textbooks is at: http://www.valdosta.edu/mlis/student_resources/documents/ILL_Textbooks.pdf

Assignment Calendar

Week(s) of:	*Activities:*
Week 1 Aug. 18	Getting Started **Take the "What's Your Science Librarian IQ?" quiz.** (Try to match 30 classic titles from the sciences and mathematics to the authors.) The Quiz and the answers are on the course homepage. **Post a brief "hello" message on the Open Discussion list.** Tell us who you are and what you hope to gain from this class. How did you do on the quiz? **Visit the website of the Science, Industry and Business Library (SIBL)** http://www.nypl.org/research/sibl/ SIBL is part of the New York Public Library system and is open to everyone. Watch the video called "The SIBL Experience" to learn why it is considered a "world class" library at http://www.nypl.org/research/sibl/expvideo.html. (You need Quicktime.) View the list of SIBL databases at http://www.nypl.org/databases/sibldb.cfm. **Have a look at these Web sites to acquaint yourself with professional organizations for science and medical librarians:** Special Libraries Association (SLA) http://www.sla.org/ Founded in 1909. Follow the **SLA Community** link to the **Divisions** page. The menu on that page lists a wide range of science and technology divisions supported within SLA. Each division has its own Web site with lots of links to related information. Science and Technology Section (STS) Part of the Association of College and Research Libraries, a division of the ALA http://www.ala.org/ala/acrl/aboutacrl/acrlsections/sciencetech/sts.htm Established in 1961. Archives for its peer-reviewed journal (*Issues in Science and Technology*) are free at http://www.istl.org/previous.html Medical Library Association (MLA) http://www.mlanet.org/ In existence since 1898. Its free journal archive goes all the way back to 1911.
Weeks 2-4 Aug. 25 thru Sept. 12	Secondary Science Reference Sources Read these chapters in the Mount and Kovaks text. (The chapters are short. I recommend that you read them in the order listed below.) Chapter 1: The Nature of Science and Technology Information Sources Chapter 2: The People Who Use Scientific and Technical Information

Mount and Kovaks group these resources together as **secondary sources**:

Chapter 21: Guides to the Literature
Chapter 11: Almanacs
Chapter 12: Annuals and Yearbooks
Chapter 13: Bibliographies
Chapter 14: Biographical Information
Chapter 16: Dictionaries
Chapter 17: Directories
Chapter 18: Encyclopedias
Chapter 19: Field Guides
Chapters 22, 24, 29: Handbooks, Manuals, Tables
(Tables are generally included in science handbooks and manuals.)
Chapter 28: Standards and Specifications
Chapter 30: Taxonomic Literature
Chapter 31: Textbooks
Chapter 34: Audio-visual Materials
Chapter 35: Maps and Atlases

Handouts (print these out for your reference):

RESOURCE GUIDE TO SCIENCE REFERENCE MATERIALS (needed for Assignment #1)
SCIENCE, TECHNOLOGY, & MATHEMATICS SUBJECT CLASSIFICATION
PLANNING AHEAD (suggested science subtopics for Assignment #4)

Assignment #1: Science Information Sources Examination and Written Report

Use the RESOURCE GUIDE TO SCIENCE REFERENCE MATERIALS to locate and examine as many resources as you can. Your examinations will include checking online sources and visiting at least one library with a substantive science collection. No school libraries, please. Instructions for conducting your analysis and reporting your findings are in the Weeks 2-4 Folder in WebCT.

Assignment #1 due: Fri., Sept. 12. Sat. Sept. 13th is one-day grace period. Submissions received after 11:59 pm on Sept. 13th will be marked down.

Weeks 5-6
Sept. 15 thru
Sept. 26

The Scientific Publishing Cycle: Primary Sources

Read these chapters in the Mount and Kovaks text.

Mount and Kovaks group these resources together as **primary sources**:

Chapter 3: Conference Literature
Chapter 4: Dissertations and Theses
Chapter 6: Lab Notebooks
Chapter 7: Monographs
Chapter 8: Patents
Chapter 9: Preprints
Chapter 10: Technical Reports
Chapter 20: Government Publications
Chapter 23: Histories and Archival Materials

Print out and study these background materials from the Web:

"The Flow of Scientific Information"
http://www.library.gsu.edu/research/pages.asp?ldID=8&guideID=173&ID=4588
A one-page chart from Georgia State University.

"The Flow of Scientific Information"
http://www.lib.uwaterloo.ca/usered/grad/researchskills/flow_of_info.html
Another chart with definitions and explanations of scientific publications below it.

Weeks 7-8
Sept. 29 thru
Oct. 10

The Scientific Publishing Cycle: Journals and Other Serials

Read these chapters in the Mount and Kovaks text.

Chapter 5: Journals and Periodicals
Chapter 26: Newspapers and Newsletters
Chapter 27: Reviews of the Literature

Print out and study these background materials from the Web:

"Scientific Journal."
http://en.wikipedia.org/wiki/Scientific_journal

Ten Most Cited Journals of 2006 [science journals only]
http://in-cites.com/research/2007/september_10_2007-1.html

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Full-length journal articles

Ackerson, Linda G., and Karen Chapman. "Identifying the Role of Multidisciplinary Journals in Scientific Research." *College & Research Libraries* 64 (6): 468-478. November 2003. Available at
http://www.ala.org/ala/acrl/acrlpubs/crljournal/backissues2003b/nov03/ackerson.pdf

Van Orsdel, Lee C. and Kathleen Born. "Periodicals Price Survey 2008: Embracing Openness." *Library Journal* 131 (7): 39-44. April 15, 2008. Available at
http://www.libraryjournal.com/index.asp?layout=articlePrint&articleID=CA6547086

Every year, the April 15 issue of *Library Journal* publishes a survey of periodicals prices. At the end of the article, you will find charts giving the average prices of scientific journals by subject which will give you an idea of how costly scientific journal subscriptions are. This year's theme is on open access (OA).

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If you are not familiar with the Open Access (OA) movement in science and scholarship, read from these materials:

Peter Suber is a professor, writer, and advocate for open access in publishing.
Suber explains OA in a document on his website at
http://www.earlham.edu/~peters/fos/overview.htm
He maintains a list of his writings on OA at
http://www.earlham.edu/~peters/fos/oawritings.htm

Read about Harvard University's Open Access mandate passed in Feb. 2008 at
http://www.libraryjournal.com/info/CA6532658.html

Read about the mandate to NIH to make all research it funds openly accessible at
http://www.allbusiness.com/government/government-bodies-offices-heads/8894138-1.html

You can read the official notice issued to NIH at
http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-033.html

Assignment #2: Science Journal Review Paper

By mail, you will receive two multidisciplinary science periodicals, *Science* and *Science News*. Use these two serials as source material for your Science Journal Review. Instructions for conducting your analysis and reporting your findings are in the Weeks 5-8 Folder in WebCT.

Assignment #2 due: Fri., Oct. 17. Sat. Oct. 18th is one-day grace period. Submissions received after 11:59 pm on Oct. 18th will be marked down.

Oct. 13-14 Fall Break (Dr. Ondrusek will be at GA COMO from Oct. 15-17)

Weeks 9-11
Oct. 15 thru
Nov. 7

Information Retrieval in STM: Resources and Techniques
Libraries provide access to a vast array of science and technology databases either by subscription or via links to the free resources.

How do libraries make patrons aware of these resources?
Examine these web pages and note the contrasts in how libraries format database lists:

Edmonton Public Library
http://www.epl.ca/EPLMaster.cfm?id=DATABASES0000001
Mostly free Internet resources. This is a good assortment of what's out there for free.

Hunter College Library
http://library.hunter.cuny.edu/subguides/sci_db.htm
Funding from the college's budget and consortia deal makes many databases available. Free resources are included in the list. Each resource is annotated (some of this information is old). Note how access to each resource is explained.

University of Chicago
http://www.lib.uchicago.edu/e/crerar/db/alpha.html
A well-funded research university with a very extensive database list.

University of Texas of the Permian Basin
http://www.utpb.edu/library/sciencedb.html
This rather small college subscribes to quite a few high-cost databases.
Note how symbols are used to distinguish how much full-text users can expect to find in each database.

Handouts and tutorials (print these out for your reference):

TO BE ANNOUNCED

Databases covered will be Science.gov, Scirus, PubMed, SciSearch in DIALOG (to show you cited reference searching), and one example each from DIALOG and GALILEO.

Assignment #3: Sci-Tech Information Retrieval Exercise

Pose a sci-tech-math question and locate journal articles that address that topic using an assortment of STM databases. Details on this assignment and grading criteria are in the Weeks 9-11 Folder in WebCT.

Assignment #3 due: Fri., Nov. 7. Sat. Nov. 8th is one-day grace period.
Submissions received after 11:59 pm on Nov. 8th will be marked down.

Weeks 12-15
Nov. 10 thru
Dec. 5

Evaluating and Selecting Scholarly Science Resources

As you enter the final weeks of learning about sci-tech-math information sources, it should be clear that journals are at the heart of an STM collection. Standard guides and book review sources help with selection of monographs for the book collection. The readings for these last weeks concentrate on the methods that scientists and science librarians use to evaluate journals.

Topic for Assignment #4 due: no later than Fri., Nov. 14th.
Refer to the PLANNING AHEAD document in the Weeks 2-4 folder for topics.
Submit your topic to Dr. Ondrusek by WebCT e-mail.

Print out and study these background materials from the Web:

Impact Factors:

Journal Impact Factors (quick definition)
http://www.sciencegateway.org/impact/index.html

"The Agony and the Ecstasy – The History and Meaning of the Journal Impact Factor."
http://www.garfield.library.upenn.edu/papers/jifchicago2005.pdf
Explained by Eugene Garfield – the man who invented the impact factor.
(The first 10 pages of his talk are good background. After that, he covers the math involved and how to relate impact factor to ranking medical journals.)

The Impact Factor Game (An Editorial)
http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371/journal.pmed.0030291&ct=1

Impact Factor of Journals
http://www.bioscience.org/services/impact15.htm
The virtual journal, *Frontiers in Bioscience*, ranks 1500 science journals by impact factor on this web page. Review the page thoroughly. What information is lacking?

Quick Stats:

"Hottest Journals of the Millenium (so far)." *ScienceWatch* 16 (1). January/February 2005. Available at http://www.sciencewatch.com/jan-feb2005/index.html

"Hottest Research of 2006-07"
http://sciencewatch.com/ana/fea/08maraprFea/
A list released each year in the *ScienceWatch® Newsletter*.

Journal and Academic Rankings (compiled by Science Gateway contributors)
http://www.sciencegateway.org/rank/index.html

"The Most" page
http://pubs.acs.org/journals/promo/most/most_cited/index.html
The American Chemical Society (ACS) lets you view abstracts to recent articles and full-text from its archives on a selection of articles. Use the tabs to get links to ACS's lists of titles labeled as Most Accessed, Most Cited, Highly Cited, and Hot Papers.

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"Librarians' Corner" columns
(published on the American Chemical Society's *Librarians Resource Center*):

How Many Journals Do We Have? An Alternative Approach to Journal Collection Evaluation through Local Cited-Article Analysis
http://pubs.acs.org/4librarians/livewire/2007/8.2/librarians.html

Meeting Chemistry Department Needs with a Limited Library Budget
http://pubs.acs.org/4librarians/livewire/2005/6.11/librarians.html

The New Model Chemistry Librarian
http://pubs.acs.org/4librarians/livewire/2005/6.10/librarian.html

Usage Statistics – Amorphous, Problematic, Useful?
http://pubs.acs.org/4librarians/livewire/2005/6.7/librarians.html

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Full-length journal articles:

Burright, Marian A., Trudi Bellardo Hahn, and Margaret J. Antonisse. "Understanding Information Use in a Multidisciplinary Field: A Local Citation Analysis of Neuroscience Research." *College & Research Libraries* 66 (5): 198-210. May 2005. Available at
http://www.ala.org/ala/acrl/acrlpubs/crljournal/backissues2005a/crlmay05/Burright.pdf

Hurd, Julie M., Debaroah D. Blecic, and Rama Vishwanatham. "Information Use by Molecular Biologists: Implications for Library Collections and Services." *College & Research Libraries* 60 (1): 31-43. January 1999. Available at
http://www.ala.org/ala/acrl/acrlpubs/crljournal/backissues1999b/january99/hurd.pdf

Assignment #4: Evaluation and Selection Project

Prepare a paper on evaluating and selecting resources on the topic you submitted to Dr. Ondrusek. Your finished paper must include two parts: (1) A discussion on how you would identify resources on that topic for a scholarly science collection. (2) A classified resource guide that includes representative titles on the sci-tech-or math topic you submitted to Dr. Ondrusek.

You will find a template for the resource guide and guidelines on composition and grading for the paper in the Weeks12-15 folder in WebCT.

Assignment #4 due: Fri., Dec. 5th. Week of Dec. 8th is finals week.
Submissions will not be accepted after 11:59 pm on Dec. 12th.

Attendance
This is a Web-delivered course, with no required face-to-face meetings and no required synchronous online times.

Requirements
As a student in this class, you are expected to: (1) do all reading assignments and participate in any designated follow-up assignments; (2) examine the reference materials assigned and complete the accompanying exercises; (3) submit all projects on time and according to the format designated by the instructor; (4) schedule time for in-person visits to a library with a science collection in order to examine science materials first-hand; and (5) conduct your research and composition according to the rules of academic integrity (see Academic Dishonesty section on page 9).

Graded Assignments and Projects

Assignment #1: Science Collection Examination Paper	25%
Assignment #2: Science Journal Review Paper	25%
Assignment #3: Sci-Tech Information Retrieval Exercise	25%
Assignment #4: Evaluation and Selection Project	25%

Grading
Your final grade will be one of these letter grades:

Exceptionally exceeds minimum standards	A
Exceeds minimum standards	B
Meets minimum standards	C
Barely meets minimum standards	D
Fails to meet minimum standards	F

On individual course requirements, the instructor may assign plus and minus grades using this numerical scale:
A = 4.0 A minus = 3.7 B plus = 3.5 B = 3.0 B minus = 2.7 C plus = 2.5 C = 2.0

Technical Requirements
All class materials will be placed on a password-protected Web site using the Vista/WebCT course management program. If you are a new Vista user, go to the Vista help pages at http://www.valdosta.edu/vista/. On the right margin are "Self Help" links. View the "Getting Started" tutorial first. Then return to the Vista page and login using your BlazeNet email ID and password.

The university's Information Technology department provides step-by-step guides on how to use VSU's email and other sources. The IT Help Desk is at http://www.valdosta.edu/helpdesk/guides/ and their phone hot line is 229-245-4357.

Distance Learning Support
A VSU reference librarian is responsible for coordinating library services for off-campus VSU students. That librarian's email and phone contact will be provided to you at the start of this semester. An online guide for distance education students is on the Odum Library Web site at http://www.valdosta.edu/library/services/revised_students.pdf.

Academic Dishonesty
"Valdosta State University expects that graduate students will pursue their academic endeavors and conduct themselves in a professional and ethical manner. All work that a student presents to satisfy course requirements should represent his or her own efforts, including appropriate use and acknowledgement of external sources."

Specific regulations related to student conduct and behavior are contained in the *Student Handbook, Student Code of Ethics*. Please acquaint yourself with the full policy at http://coefaculty.valdosta.edu/troot/eced4300/Academic%20Dishonesty.doc.

It is **your responsibility** to make sure you understand how to avoid breeches of academic integrity. It is not the responsibility of the instructor to post rules for citing, quoting, or ethical exchange of information for every assignment. If you are unsure about the parameters of an assignment, ask for clarification.

Special Needs Statement
Valdosta State University is an equal opportunity educational institution. It is not the intent of our institution to discriminate against any applicant for admission or any student or employee of the institution based on the sex, race, religion, color, national origin, or the handicap of the individual. It is the intent of the institution to comply with Title VI of the Civil Rights Act of 1964 and subsequent executive orders as well as the Title IX section 504 of the Rehabilitation Act of 1973. Students requiring classroom accommodations or modifications because of a documented disability should discuss this need with the professor at the beginning of the semester. Students not registered with the Special Services Program should contact Special Services in Nevins Hall, Room 2164, 229-245-2498 (ttv).

Student Agreement
Enrollment in this class signifies that the student has agreed to abide by and adhere to the policies and regulations specified above. It is understood that the instructor may adapt or change this syllabus and the assignments contained within it according to circumstances that may arise during the course of the semester.