

LIS 2545: SCIENCE & TECHNOLOGY RESOURCES AND SERVICES

Tuesdays 6:00 - 9:15 pm

Room 502 SIS

Information resources and services in science and technology including primary and secondary publications; hardcopy & electronic databases (includes image and numeric); user needs and communication patterns within the scientific community.

COURSE INSTRUCTORS / CONTACT INFORMATION

Rachel Callison

Reference & Research Librarian @ Software Engineering Institute - Carnegie Mellon

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Jim Bobick

Head, Science & Technology Department @ Carnegie Library of Pittsburgh (*Retired*)

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Margarete Bower

Head, Chemistry Library @ University of Pittsburgh

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Denise Callihan

Manager, Library Shared Services @ PPG Industries

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COURSE DESCRIPTION / SUMMARY

This course will introduce science and technology information resources and services - *primary & secondary publications; print & electronic databases* - to those interested in learning more about science & technology libraries. Resources & services covered will include those found and utilized in academic, public and/or special library environments. Course is team taught by subject specialists who possess extensive experience with the following three (3) science & technology areas:

- Natural Sciences
- Applied Science
- Research & Development (R&D) | Corporate

In addition to general science and technology resources, this course will cover materials in the following areas:

- Biological Sciences & Physical Sciences
Zoology, Microbiology, Genetics | Astronomy, Chemistry, Mathematics

- Engineering - including Computer and Geospatial related disciplines
- Competitive Intelligence, KM (Knowledge Management), Client Centered Services - as relate to R & D environments

Goals of this course are to

- Expose you to various scientific disciplines and provide a basic understanding of scientific and technical literature and users,
- Experience 'hands on' use of core print & electronic reference & research tools in the sciences,
- Cultivate practical skills for providing reference services and conducting research,
- Introduce you to developments & trends within science & technology libraries / librarianship.

COURSE EXPECTATIONS

Course Web:

Blackboard's Course Web is the primary course tool for this class and you will be required to keep a stable Internet connection to keep up with all relevant course materials and activities. Students should be aware that Course Web keeps records of the dates and times they use various sections of the class page.

Communication:

This course is taught both synchronously and asynchronously. Thoughtful interaction with student colleagues and the instructors is expected both in person in class and online Blackboard system.

Neither the instructors - nor the students - should expect immediate replies to email or voicemail messages; appropriate response time is considered to be within two or three days.

Work Levels:

Graduate-level courses require that you to spend at least 9 hours (outside of class time) a week; 3 hours outside for ever 1 hour of class time. On a week by week basis you may discover that you need less time, but please be prepared for the fact that some weeks may be busier than others.

Students are expected to do all of their graded work independently (unless instructed to do otherwise) and, in general, to engage in ethical behavior regarding academic work.

Team teaching a blended course presents special challenges for all involved. It's particularly important to log onto the course space often in order to keep up with the topics being discussed. Please make an effort to keep up with readings and work, take advantage of the communication mechanisms and other tools built into the Blackboard courseware.

COURSE READINGS

Readings

Instead of a textbook, required reading will consist of selected readings for in class and online discussion(s). See "Participation & Attendance" in the COURSE ASSIGNMENTS section.

Materials

Not all information resources are available electronically; portions of assignments will require you that you access/use print materials and collections.

COURSE REQUIREMENTS

CourseWeb:

Blackboard's CourseWeb is the primary course tool for this class and you will be required to keep a stable Internet connection to keep up with all relevant course materials and activities. Students should be aware that CourseWeb keeps records of the dates and times they use various sections of the class page.

Communication:

Because this course is taught both synchronously and asynchronously, thoughtful interaction with student colleagues and the instructors is expected both in person in class and online CourseWeb system.

Class meetings will include a mixture of lecture and discussion. You will get the most out of this course if you participate in the in class & online discussions.

Neither the instructors - nor the students - should expect immediate replies to email or voicemail messages; appropriate response time is considered to be within two or three days.

Work Levels:

Graduate-level courses require that you will spend approximately 6-9 hours (outside of class time) a week; 2-3 hours for every hour of class time. On a week by week basis you may discover that you need less time, but please be prepared for the fact that some weeks may be busier than others.

Students are expected to do all of their graded work independently (unless instructed to do otherwise) and, in general, to engage in ethical behavior regarding academic work.

Team teaching a blended course presents special challenges for all involved. It's particularly important for you to frequently log onto/into the course space in order to keep up with the topics being discussed. Please make an effort to keep up with readings and work, take advantage of the communication mechanisms and other tools built into CourseWeb.

COURSE ASSIGNMENTS & GRADING

Attendance & Participation = 10% of your final course grade

Includes in class and online discussions of weekly readings.

A science/technology related RSS/Blog subscription & monitoring assignment will require that you post a weekly summarization. A minimum of one paragraph (maximum of four paragraphs) - paragraph = approx 4 sentences - is required.

Assignment 1: Research Questions: Natural Sciences (3 parts)

20% of your final course grade

Due dates: 6/10, 6/17, 6/24

Assignment 2: Research Questions: Applied Sciences (2 parts)

20% of your final course grade

Due dates: 7/1, 7/9

Assignment 3: Research Questions: R & D (2 parts)

20% of your final course grade

Due dates: 7/22, 7/29

Assignment 4: Final Project: Collection Development / Service (*public / academic / r&d : choose one*)

30% of your final course grade.

Due date: 5/27 (topic), 7/29 (final)

COURSE ASSIGNMENT SCHEDULE

Due Dates For Assignments

All assignments are due on dates below by / at midnight (EST)

5/20/08 - SciTech Blog/Site assigned/chosen

5/27/08 - Final Project: Scenario Choice Submitted & 1st SciTech blog post due

6/10/08 - Assignment 1: 1

6/17/08 - Assignment 1: 2

6/24/08 - Assignment 1: 3

7/01/08 - Assignment 2: 1

7/09/08 - Assignment 2: 2

7/12/08 - SAT: FastTrack Weekend; demonstrations / tour

7/15/08 - no class (*see 7/12/08*)

7/22/08 - Assignment 3: 1

7/29/08 - Assignment 3: 2 & Final Project

SIS & UNIVERSITY OF PITTSBURGH POLICIES

Grading:

Assignments are due at the beginning of class on the days indicated on syllabus under ASSIGNMENT SCHEDULE. It is your responsibility to retain a copy of your assignment(s) and verify through the online gradebook that any late assignment has been received and graded. Late assignments will not receive full credit. In order to receive a final grade for this course, ALL assignments must be submitted by July 29, 2008 = last meeting day of course. After that date, students with missing assignments will receive an incomplete grade - 'G grade' - for the semester.

[LIS Grading Policy](#)

[University of Pittsburgh Grading Scale](#)

Academic Integrity:

Students in this course will be expected to comply with the [University of Pittsburgh's Policy on Academic Integrity](#). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

Disabilities:

If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and the [Disability Resources and Services](#) no later than the 2nd week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call 648-7890 (Voice or TTD) to schedule an appointment. The Office is located in 216 William Pitt Union.

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COURSE CALENDAR: LECTURE TOPICS / DATES

May 13 - Introduction to the Course (Callison)

Meet Instructors and fellow Students

Overview of Course:

- Scope/Expectations for next 12 weeks
- Syllabus: Schedule - Assignments - Communication - Participation (Readings/Discussion)
- Course Web Space: How to locate & navigate course information
- Resources & Materials

Introduction to 'Science' and 'Technology'

May 20 - Science & Technology Libraries and Literature (Callison)

Science & Technology Libraries: History and Overview

Science & Technology Literature: Types and Formats (General)

Due: Reading Discussion & Blog Summary Post

May 27 - Communication, Reference & Trends (Callison)

Communication: Research Process

Reference Process & Reference Interview

Scientific & Technology Librarians/Libraries: Lifelong Learning / Keeping up / Future Directions & Trends

Due: Reading Discussion & Blog Summary Post

Final Project Scenario/Topic is Selected/Submitted

June 3 - Overview: Natural Sciences (Bobick)

Introduction and Resources in General Science

- Pure versus Applied Science
- History and Development of the Scientific Journal
- Scientific Publication Cycle
- Science Reference Resources: Print and Electronic
- Forms of the Scientific Literature (Dictionaries, Encyclopedias, Directories, etc.)
- Typical Reference Questions

Due: Reading Discussion & Blog Summary Post

June 10 - Natural Sciences (Bobick)

Resources in the Biological Sciences

- General Biology
- Botany, Zoology, and Microbiology
- Anatomy and Physiology
- Biochemistry, Cell, Molecular, and Developmental Biology
- Genetics and Evolution

- Environmental Sciences
- Systematics and Taxonomy

**Due: Reading Discussion & Blog Summary Post
Assignment 1 part 1**

June 17 - Natural Sciences (Bobick)

Resources in the Physical Sciences and Mathematics

- Astronomy
- Chemistry
- Geology
- Physics
- Mathematics

**Due: Reading Discussion & Blog Summary Post
Assignment 1 part 2**

June 24 - Overview: Applied Sciences & Engineering (Bower)

Engineering Disciplines

- Types of information needed
- Sources of information

Engineering Literature

- How do engineers find information
- Typical types of questions & approaches to answering question
- Specific engineering resources
- Engineering in an academic environment
- Keeping current

**Due: Reading Discussion & Blog Summary Post
Assignment 1 part 3**

July 1 - Applied Sciences & Engineering (Bower)

Computer-related disciplines; Telecommunications Geospatial Information; Digital Repositories; Food Science; Textile Science

- Consideration of the nature of the discipline
- Typical information needs,
- Relevant types of literature and specific information resources

**Due: Reading Discussion & Blog Summary Post
Assignment 2 part 1**

July 8 - Overview: Research & Development (R&D) (Callihan)

- Introduction to information sources/services in R&D settings
- Understanding of the types of literature used by R&D chemists/engineers
- How special libraries have adapted and changed
- Basic and specialized techniques of chemical information/engineering retrieval
- Methods of using scientific information resources for various types of query
- An idea of the types of questions that R&D scientists ask and how to approach them

**Due: Reading Discussion & Blog Summary Post
Assignment 2 part 2**

July 12 - Applied Sciences & Engineering (Bower)

Saturday/FastTrack Weekend

Specialized Database Demonstrations & Library Tour

- Demonstration & hands on searching of several important databases with special features:
e.g. SciFinder Scholar, Beilstein, Gmelin and Knovel
- Tour of Bevier Engineering Library (Univ. of Pittsburgh)

July 15 - NO CLASS (See July 12)

**Due: Reading Discussion & Blog Summary Post
Assignment 3 part 1**

July 22 - Research & Development (R&D) (Callihan)

Professional Tools

STN & Dialog

Chemical Abstracts Service Representatives will be in class for 45 min. demonstration of the STN databases

Patent Searching (using free & fee databases)

- An in-depth look at patent search techniques
- What are patents, families, English equivalents
- Think about Customers/Patrons (in report creation/delivery)

Due: Reading Discussion & Blog Summary Post

July 29 - Research & Development (R&D) (Callihan)

Patent searching (part 2) & Business Relationships

- Competitive Technical Intelligence (using patents, journals) to learn info about a competitor
- Trademark searching

General Business Searching: Business databases, Trade Journals, News

Networking & Relationship Building

**Due: Reading Discussion & Blog Summary Post
Assignment 3 part 2
Final Project due**