I. COURSE DESCRIPTION

Provides a seminar-oriented overview of informatics, including the study of information resources and their utilization and impact within various disciplines and professions. Concentrates on health informatics, which addresses information phenomena and resource utilization within the basic health sciences and healthcare, including practices, education, research, administration, and enterprise. Covers the past, current and future development of health informatics, including recurring themes, technological applications, key information resources and organizations, and advancement of the field’s knowledge. Incorporates the alternative/complementary and integrative health care movements, evidence-based approaches and bioinformatics.

II. OBJECTIVES, REQUIREMENTS AND GRADING

1. To acquire a working knowledge of information resources that support health informatics practice, research and education. Requirement: A short annotated pathfinder—a guide to key information resources of health informatics (30% of course grade).

2. To understand specific, recurring themes in health informatics, current technology applications, and probable future trends. Requirement: Leadership of seminar-like discussion of two selected textbook chapters and two updates of the two chapters (30% of grade).
3. To understand health informatics as an academic field and a profession and to prepare to contribute to the advancement of its knowledge. Requirement: Final, open-book exam or submission of a preliminary draft of a journal article, conference paper, or research proposal (30% of grade).

4. To participate constructively and actively in presentation discussions and other seminar activities (10% of grade).

III. REQUIRED TEXTBOOK


IV. EXAMPLES OF SUPPLEMENTARY SOURCES (not required)


V. GUIDELINES FOR COMPLETION OF REQUIREMENTS

1. Short Annotated Pathfinder for Health Informatics Information Resources.

The purposes of the Pathfinder are to (1) help you and your colleagues to find resources that are useful in advancing health informatics practice, education and research, and (2) to further your own career advancement. You may develop your annotated Pathfinder individually or with no more than one class partner (partners receive the same grade). Pathfinders should be no shorter than 5 pages nor longer than 10 pages (exclusive of any appendices) typed single-spaced. The annotations need not be lengthy, since the function of the Pathfinder is to serve as a reminder of, and directory to, key health informatics resources. The Pathfinder can be useful in completing all other requirements for this seminar. One page of annotations is recommended for each of the following five classes of information resources:

(1) Associations. Annotate brief descriptions of professional associations that focus primarily or heavily on health informatics. Include their mission, programs, special interest groups (SIGs), working groups, publications, job/career opportunities, and links to other organizations. Note each association’s useful information resources (including links) and other features that might be important to someone who has had little exposure to health informatics. Note also the specific job listings of possible interest to you, and potential career affiliation benefits. Key associations include the
American Medical Information Association (www.amia.org), the Medical Library Association (www.mlanet.org), the American Nursing Informatics Association (www.ania.org), the International Medical Informatics Association (www.imia.org), and others. It is important to be familiar with these sites.

(2) Federal research and services sponsors. Include a brief description of the mission, programs, service units, research sponsorship, and information resources of the National Institutes of Health (www.nih.gov). Note its Center for Information Technology, Center for Scientific Review, National Center for Research Resources, National Center for Complementary and Alternative Medicine, and other Institutes and Centers. Likewise, briefly describe the National Library of Medicine’s mission, research programs, informatics training programs, bioinformatics programs, information services, and other key features (www.nlm.nih.gov). Note also www.cdc.gov and www.grants.gov.

(3) Evidence-based health care sites. Include a brief description of the highly useful resources of an evidence-based resource like the available through UTLOL online databases, such as EBMR. Note the home pages of www.cochrane.org and other evidence-based organizations.

(4) An anthology of super-searcher’s online resources. Briefly describe the online classes of health and medicine resources available from www.infotoday.com/supersearchers (click on links to health and medicine). You might wish to print this list for future reference.

(5) PubMed (MEDLINE) search interface. A user tutorial is available at www.ncbi.nlm.nih.gov/PubMed/ (under Enterez Pubmed click on Tutorial). You should go through all eight modules, which should take 1-2 hours, and briefly annotate some useful pathfinder tips for searching MEDLINE.

Pathfinders will be graded on the basis of their apparent helpfulness in guiding research, professional practice and health education, and in completing other course requirements (leading discussions, updating chapters, framing an article or research proposal, doing the final exam, etc.).

Pathfinder grades count for up to 30% of the course grade (6% per section). Please submit two copies to the instructor by the due date. Also, please limit your inclusion of web printouts in your Pathfinder to just a dozen or so. Focus instead on providing your own annotations.

2. Discussion Leadership on Recurrent Themes and on the Years Ahead

First, study your selected textbook chapter (from among chapters 1-3 or 6-8 on a recurrent theme, and develop a brief “reminder” summary to present in the seminar. You may use interesting discussion questions at the start or end of each chapter in the textbook. The brief summary should be presented orally. Assume that others will have read the chapter ahead of time.
Second, go to www.amia.org to “Publications” and then to Journal of the American Medical Informatics Association (JAMIA) archives. Or, you may access JAMIA through UT Library Online (UTLOL).

Skim the contents of the JAMIA issues from 2001 through the present and select a minimum of five relevant articles (say one article to represent each year since 2001) that can be used to update your assigned chapter.

Third, please write a one-page update (single spaced on one side of one page) that very briefly updates the five or more articles you have selected to update your chapter. Of course, you may summarize other sources that serve to update your chapter, but for instructional purposes, we will concentrate on using JAMIA to update chapters. On the assigned class date, present a brief (say 5 minute) oral summary of the chapter or reading, present your update and lead a seminar-like discussion. We will devote about 25 minutes to reviewing and discussing each chapter. Assume that everyone has already read the chapter when you summarize it, so that we can devote time to probing the discussion questions and some related issues.

Before or at the start of the class session in which you lead the discussion, submit your one-page chapter update to the instructor (who will make copies for the class and distribute them).

Discussion leadership will be graded on the basis of apparent effectiveness in presenting issues and stimulating productive discussion, while chapter updates will be graded according to quality of the update (recognition of significant, related JAMIA articles, key events and landmarks, problems and trends) and evidence presented. Discussion leadership for each chapter counts for 5% of the course grade and the chapter update for 10% (total 15%).

3. Discussion Leadership on Medical Computing Applications.

The instructions in item # 2 above likewise apply to leading a discussion on your selected chapter on technological applications (from among chapters 9-18), as do the grading criteria. Again, discussion leadership counts for 5% and chapter update for 10% of the course grade (total 15%). Submit your one page chapter update immediately before the session in which you lead the discussion.

4. Final, open-book Exam (or preliminary draft of journal article, conference paper or proto-research proposal).

The final exam will be derived from chapter discussion questions, class discussions of issues, problems, and trends, and the useful features of informatics information resources and technologies. It will be administered in open-book style, and will consist of about four or five questions.

As an alternative to taking the final exam, you may submit a draft of either a short journal article, or conference paper, or a research proto-proposal. In the case of journal articles, drafts must be formatted to the targeted journal’s editorial form and
style and submission guidelines. Likewise, a conference paper draft must comply with the specific submission requirements of the conference targeted. Research proposals should comply with the submission requirements and guidelines of the targeted funding agency. Funding agencies may be found via such databases as www.grants.gov or http://fundingopps.cos.com or at the agency and association sites mentioned in the Pathfinder Guidelines above.

Drafts of articles or grant proposals are due at the conclusion of the final exam time (see Calendar). The exam counts for 30% of the course grade, as does either the article or the research proposal draft.

VII. COURSE CALENDAR

Monday
September 12
- Introduction to course
- Introductions and biographies
- Commence reading/skimming Encyclopedia of Library and Information Science (2d. ed.) (ELIS 2) articles on “Health Informatics,” “Medical Informatics,” and “National Library of Medicine.” Available electronically through UTLOL.

September 19
- Assignment of discussion leaders
- Discussion of web sites: AMIA, MLA, NIH, NLM
- Discussion of ELIS2 articles on NLM, Health Informatics and Medical Informatics
- Discussion of pathfinder assignment
- Discussion of E-Health

September 26
- Evidence-based movement
- Online resources
- Discussion of Pathfinder assignment
- Review of MLA Self Education Resources
- Discussion of alternative/complementary and oriental medicine

October 3
- Discussion of Chapter 1: Computer meets Medicine
  Discussion Leader: ________________________________
- Discussion of Chapter 2: Medical Data
  Discussion Leader: ________________________________
- Discussion of Pathfinder Assignment
- The alternative/complementary/integrative movements
- Discussion of ELIS 2article on “Information Productivity”
October 10
- Discussion of Chapter 3: Medical Decision-making
  Discussion Leader: ____________________
- Omit Chapter 4 on Concepts of Computing (because of its obsolescence)
- General discussion of Chapter 5: System Engineering
- Discussion of ELIS 2 article on “Web of Science

October 17
- Discussion of Chapter 6: Standards
  Discussion Leader: ____________________
- Discussion of Chapter 7: Ethics and Health Informatics
  Discussion Leader: ____________________
- Discussion of Pathfinder and information resources
- Discussion of ELIS 2 article on “Drug Information Data Bases”

October 23, 2-5 pm (Tentative date/time) Visit to Academy of Oriental Medicine, 2700 West Anderson Lane (across from Northcross Mall)

October 24
- DUE: Pathfinder (submit two copies-give brief oral report)
- Discussion of Chapter 8: Evaluation/Assessment
  Discussion Leader: ____________________
- Discussion of Chapter 9: Patient Record Systems
  Discussion Leader: ____________________
- Discussion of alternative/complementary medicine

October 31
- Discussion of Pathfinders and final exam and alternatives
- General Discussion of Chapter 10: Integrated Delivery Networks
- Discussion of Chapter 11: Public Health/Consumer Uses
  Discussion Leader: ____________________
- Discussion of Chapter 12: Patient Care Systems
  Discussion Leader: ____________________
- Discussion of Nursing Informatics (www.ania.org)

November 7
- Discussion of Chapter 13: Patient Monitoring Systems
  Discussion Leader: ____________________
- Discussion of Chapter 14: Imaging Systems
  Discussion Leader: ____________________
- Discussion of ELIS 2 article on “Radiology Informatics”
- Discussion of Supersearchers site sources

November 14
- General Discussion of Chapter 15: Information Retrieval Systems
• Discussion of artificial intelligence in medicine
• Discussion of Chapter 16: Clinical Decision Support
  Discussion Leader:___________________
• Discussion of research and publishing opportunities
• Evidence-based medicine

November 21
• General Discussion of Chapter 17: Computers in Medical Education
• Discussion of ELIS 2 article on “Bioinformatics”
• Discussion of Chapter 18: Bioinformatics
  Discussion Leader:___________________
• Review of World Future Society sources (www.wfs.org.org)
• Discussion of research sponsors in health care and health informatics

November 28
• Discussion of Chapter 19: Health Care and IT
  Discussion Leader:___________________
• Discussion of Chapter 20: Future
  Discussion Leader:___________________
• Discussion of integrative health care movement and careers in traditional (Western) and alternative medicine
• Discussion of basic research in medicine and physiology
• Nobel laureate information seeking and discovery patterns

December 5 (last class)
• **Issuance of final exam questions**
• Discussion of articles and research proposals
• Survey

December 19, Monday: Official Final Exam time: 7:00-10:00 pm
• Final exam questions due; articles or research grant proposal due.