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 nursing informatics, integrative health care movements, evidence-based approaches and bioinformatics.

II. OBJECTIVES, REQUIREMENTS AND GRADING

1. To acquire a working knowledge of biomedical information resources to support your anticipated career in health informatics practice, research or education. Requirement: A short annotated pathfinder—an individually customized guide to key health informatics information resources (30% of course grade).

2. To understand specific, recurring themes in biomedical informatics, current technology applications, health finance and the future. Requirement: Brief individual oral presentations of answers to assigned chapter discussion questions (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: Option of taking a culminating open-book exam, or submission of a preliminary draft of a short journal article, or conference paper, or research proposal on a topic of your choice (30% of grade).

4. To participate constructively and actively by making presentations, and through 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) to assist in conceptualizing and furthering your own career advancement, and (2) to help you to find resources that are useful in advancing health informatics practice, education and research. You may develop your annotated Pathfinder individually or with a class partner (partners receive the same grade). Pathfinders should be about five to eight pages in length, typed (exclusive of any appendices). 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 to advance your career. The Pathfinder can be useful in completing all other requirements for this seminar. Roughly, one page of annotations is recommended for each of the following five classes of information resources (or other useful classes) of 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](http://www.amia.org)), the Medical Library Association ([www.mlanet.org](http://www.mlanet.org)), the American Nursing Informatics Association ([www.ania.org](http://www.ania.org)), the International Medical Informatics Association ([www.imia.org](http://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](http://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](http://www.nlm.nih.gov)). Note also [www.cdc.gov](http://www.cdc.gov) and [www.grants.gov](http://www.grants.gov). We will discuss funding for the possible development of a health informatics-based UT-Austin Health Science Center.

(3) **Evidence-based health care sites.** Include a brief description of the highly useful resources of an evidence-based resource like those available through some UTLLOL online databases. Note that the home pages of [www.cochrane.org](http://www.cochrane.org) and other evidence-based organizations.

(4) **A brief anthology of online resources.** Briefly describe some key classes of online health and medicine resources. Examples include those available from [www.infotoday.com/supersearchers](http://www.infotoday.com/supersearchers) (click on links to health and medicine). You might wish to print this list for future reference. Alternatively, you may select [www.mlanet.org](http://www.mlanet.org) top sites for their best consumer sites.

(5) Brief annotations of a few selected integrative medicine (CAM) association sites; for example: [www.acam.org](http://www.acam.org); [www.aaom.org](http://www.aaom.org); [www.nccaom.org](http://www.nccaom.org); [www.aanmc.org](http://www.aanmc.org); [www.anmc.org](http://www.anmc.org); [www.naturalpathic.org](http://www.naturalpathic.org); [www.ayurveda-nama.org](http://www.ayurveda-nama.org); etc.

Pathfinders will be graded on the basis of their apparent helpfulness in guiding your career in research, professional practice or health education, and in completing other course requirements (chapter discussion questions, framing an article or research proposal, doing the exam, etc.).

Pathfinder grades count for up to 30% of the course grade (about 6% per section). Please submit a copy to the instructor by the due date.
Oral presentation of answers to assigned chapter discussion questions

For each chapter in Biomedical Informatics, you will be assigned a specific chapter discussion question (a beginning-of-chapter question or an end-of-chapter discussion question) to answer/or briefly discuss orally in class within 1-2 minutes. You may treat each question as a potential job interview question, and/or relate the question to a specific career setting of interest. For example, you might be assigned a given number (from 1 through 14 or so) for the semester. If assigned 1, for example, you will take the first beginning-of-chapter discussion question. If assigned number 10, you will take the 10th question from the chapter’s beginning question, which will be an end-of-chapter question. Thus, you would have something like two-dozen questions to answer for us during all class sessions (since the textbook has 24 chapters total).

In this way, we can cover all chapter questions quickly and effectively. Note: some chapters might not have any or enough chapter questions at the beginning or end for all to answer, so you should develop your own question to answer from the chapter content. (Note: for Chapter 3, we will answer the questions at the beginning of the Chapter rather than those at the end).

Please be sure to read each chapter prior to answering your assigned question. Answers should be relatively concise (2-3 sentences, delivered in 1 minute) and will be presented orally for a brief one-minute discussion. Should you have to be absent, you may email your answer to the instructor prior to the related class meeting, so that your answer can still be presented: gharmon@ischool.utexas.edu.

Note: Some chapters might not have enough questions for everyone in the class, or assigned questions might not appeal to you. Or some questions might be too long and complex to answer, as when they involve advanced statistical or logical reasoning or require a long series of answers. As an alternative to answering assigned questions like these, you may develop your own alternative question to answer or make a point related to chapter content. Or, you may quickly present a short summary or abstract of an article from the Journal of the American Medical Informatics Association (published online at http://www.amia.org), or a similar health or nursing informatics journal, which updates or augments the assigned chapter coverage. Prior permission is not needed to do the above alternatives.

Each discussion answer counts for one point of credit (total 24 points) and up to six points will be awarded for overall answer quality and presentation effectiveness (total, 30% of course grade).

4. Open-book exam (or preliminary draft of journal article, or conference paper or proto-research proposal).

The exam will be focused on the future (which Chapter 24 addresses) and 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 as a take-home exam, and will consist of about four or five questions.

As an alternative to taking the exam, you may submit a preliminary 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 same time exam answers are due (see Calendar). The exam counts for 30% of the course grade, as does the article or the research proposal draft.

VI. COURSE CALENDAR

**Monday**

**September 10**
- Introduction to course
- Introductions and biographies
- Assignment of chapter discussion questions
- Discussion of pathfinder assignment

**September 17**
- Discussion of Chapter 1 and 2 beginning and end of chapter questions
- Discussion of websites: AMIA, ANIA, MLA, NIH, NLM, & CAM sites
- Discussion of pathfinder assignment

**September 24**
- Discussion of Chapter 3’s beginning-of-chapter questions, and Chapter 4’s beginning/end-of-chapter questions.
- Evidence-based movement
- Online resources
- Discussion of Pathfinder assignment

**October 1**
- Discussion of Chapter 5 and 6 beginning/end-of-chapter questions
- Discussion of Pathfinder Assignment
- The global/integrative health care movements

**October 8**
- Discussion of Chapter 7 and 8 beginning/end-of chapter questions
- Discussion of pathfinders
October 15
- Discussion of Chapter 9 end and 10 beginning/end-of-chapter questions
- Discussion of Pathfinder and information resources

**October 21, 2-5 pm** (Tentative date/time) Visit to Academy of Oriental Medicine, 2700 West Anderson Lane (across from Northcross Mall)

October 22
- **DUE: Pathfinder** (give brief oral report)
- Discussion of Chapters 11 and 12 beginning/end-of-chapter questions
- Discussion of global/integrative medicine and medical tourism

October 29
- Discussion of Pathfinders and exam (and paper or research proposal)
- Discussion of Chapter 13 and 14 beginning/end-of-chapter questions
- Discussion of Nursing Informatics ([www.ania.org](http://www.ania.org))

November 5
- Discussion of Chapters 15 and 16 beginning/end-of-chapter questions
- Discussion of exam (paper or proposal)

November 12
- Discussion of Chapters 17 end and 18 beginning/end questions
- Discussion of artificial intelligence in medicine
- Discussion of research and publishing opportunities
- Evidence-based medicine

November 19
- Discussion of Chapter 19 and 20 beginning/end questions
- Discussion of research sponsors in health care and health informatics

November 26
- Discussion of Chapter 21 and 22 beginning/end questions
- Discussion of basic research in medicine and physiology
- Nobel laureate information seeking and discovery patterns

December 3 (last class)
- Discussion of Chapter 23 and 24 beginning/end questions (24 end Qs only)
- Issuance of exam questions
- Discussion of articles and research proposals
- Survey

December 10, Monday, 6:00pm (no class)
- Exam answers **due**; or article or research grant proposal drafts **due**.