Syllabus 8-28-12

THE CATHOLIC UNIVERSITY OF AMERICA
SCHOOL OF LIBRARY AND INFORMATION SCIENCE
LSC871 Health Informatics
Spring 2011

Credit Hours 3
Prerequisites None
Classroom O'Boyle 106
Days and hours of class meetings and labs or discussion sections: Tuesday 7-9:30 pm

Instructor contact information:
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Course Description: Survey of healthcare informatics designed to examine how health information technology can address healthcare problems, support the information needs and communication patterns of the biomedical community, and bridge the gap between research and practice.

Instructional Methods: Lecture, class discussion, and demonstrations with hands-on components, case studies.

Required Text: Hoyt, R.E. et al (2012). *Health Informatics, 5th ed.* Lulu.com (ISBN 978-1-105-43755-7)
Additional readings as assigned. Full-text and links available in BlackBoard

Course Goals

This course will prepare health sciences librarians and other IT professionals to function in and understand a national health care environment which is data-driven, evidence-based, and fully electronic and which will increasingly integrate research and clinical practice in an interdisciplinary manner that reaches from the bench to the bedside.

Goals for Student Learning
And Course Requirements

Learning Objectives	**Learning Assessment**
Define health informatics and describe the scope of the field and variety of applications.	A score of B or higher on a reaction paper to class readings.
Identify HIT policies and standards as they relate to US health care policy, systems interoperability, and potential obstacles to systems implementation. Understand the applications underlying/enhancing the IT infrastructure.	A score of B or higher on a paper describing privacy and confidentiality issues in health care IT or human factors in designing and implementing health care IT. A score of 4 or 5 on project proposal checklist created in response to case as evaluated by faculty. (checklist or outline) A score of 4 or 5 on class facilitation of assigned topic per checklist completed by faculty.
List the major components and purposes of the EHR. Discuss ethical issues of EHR usage. Identify human factor issues in implementation.	A score of 4 or 5 on discussion participation per checklist completed by faculty.

Define the principles of eScience. Describe the role of collaborative workspaces and CTSA programs in the delivery of research from the bench to the bedside.	A score of 4 of 5 on discussion participation per checklist completed by faculty.
Define computational biology and list databases and resources used in bioinformatics. Identify future health care innovations from this field.	A passing score on in-class search exercises.
Identify roles for informatics applications in public health/population-based medicine. Describe the role of informatics applications in patient/consumer centered care.	A score of 4 or 5 on discussion participation per checklist completed by faculty.
Recognize roles for librarians and IT professionals in the field of health informatics.	A score of 4 or 5 on class facilitation of assigned topic per checklist completed by faculty.
Synthesize principles and policies of health care informatics in the practice setting.	Final in-class presentation on a systems implementation process.

Professional Standards Addressed
This course addresses the management, professional identity and technology competencies of the SLIS curriculum. See
http://slis.cua.edu/res/docs/about/accreditation/documents/sliscompetenciesadopted20080326.pdf

Expectations and policies

Academic honesty: Academic honesty is expected of all CUA students. Faculty are required to initiate the imposition of sanctions when they find violations of academic honesty, such as plagiarism, improper use of a student's own work, cheating, and fabrication.
The following sanctions are presented in the University procedures related to Student Academic Dishonesty (from http://policies.cua.edu/academicundergrad/integrityprocedures.cfm): "The presumed sanction for undergraduate students for academic dishonesty will be failure for the course. There may be circumstances, however, where, perhaps because of an undergraduate student's past record, a more serious sanction, such as suspension or expulsion, would be appropriate. In the context of graduate studies, the expectations for academic honesty are greater, and therefore the presumed sanction for dishonesty is likely to be more severe, e.g., expulsion. ...In the more unusual case, mitigating circumstances may exist that would warrant a lesser sanction than the presumed sanction."
Please review the complete texts of the University policy and procedures regarding Student Academic Dishonesty, including requirements for appeals, at
http://policies.cua.edu/academicundergrad/integrity.cfm and
http://policies.cua.edu/academicundergrad/integrity.cfm.

Course Policies or Expectations: Students enrolled in LSC 871 are expected to adhere to the following policies:
• No cell phone use or texting in class
• Class attendance is mandatory and students are expected to arrive on time
• All class business is to be undertaken in a professional and courteous manner
• Students are expected to arrive at class ready to discuss all assigned readings and ready to lead assigned facilitations
• Written assignments are due on time and may be submitted on paper or electronically to the professor at alinton@gwu.edu or through the BlackBoard digital dropbox
• Late assignments will be dropped a grade

Campus Resources for student support:

• Academic policies for graduate students http://policies.cua.edu/academicgrad/index.cfm
• SLIS policies and forms http://slis.cua.edu/forms/index.cfm
• SLIS technology resources http://slis.cua.edu/tech/index.cfm
• CUA libraries http://libraries.cua.edu/welcome.html
• Center for Academic Success http://success.cua.edu/services/index.cfm

Accommodations for students with disabilities: Any student who feels s/he may need an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. Please contact Disability Support Services (at 202 319-5211, room 207 Pryzbyla Center) to coordinate reasonable accommodations for students with documented disabilities. To read about the services and policies, please visit the website: http://disabilitysupport.cua.edu.

Assessment

Students will be required to complete 9 formal assignments during the duration of this course. They are outlined below. Deadlines and full details on how to complete each assignment are included in Course Schedule.

Reaction papers (2) 15%
Class participation 10%
Class facilitation (2) 20%
Search exercise 5%
Project proposal checklist/outline 10%
Final presentation 25%

University grades:
The University grading system is available at
http://policies.cua.edu/academicundergrad//gradesfull.cfm#II for undergraduates and
http://policies.cua.edu/academicgrad//gradesfull.cfm#iii for graduate students.
Reports of grades in courses are available at the end of each term on http://cardinalstation.cua.edu .

Course Schedule

Week 1 (8/28): Healthcare Informatics: Definitions, status of health care computing, applications, drivers for innovation

Assignments for week 1:
• Complete readings 1 – (due 1/10)
• Come to class prepared to discuss the following questions: What are your expectations for this course? What do you hope to learn by the end of the course? Why are you interested in health informatics?
• Prepare a 2 page reaction paper to this week's readings discussing health informatics as a distinct discipline and profession. Provide your definition of health informatics based on the class discussion and readings. Use APA format. (due 9/4)

Week 2 (9/4): Health Information Technology: life cycle—needs assessment, RFP, implementation, training, disaster planning

Assignment for week 2
• Complete readings
• Please come to class prepared to discuss the following questions: What are the major components of the systems life cycle? What role does the needs assessment play in preparing, designing, and implementing systems? What are the obstacles to full implementation of health information systems?

Week 3-4 (9/11-9/18): Healthcare Informatics Infrastructure: legal, governmental, standards

Assignments for weeks 3-4:
• Complete readings
• Please come to class prepared to discuss the following questions: Identify two US health care policies and discuss their impact on health information technology. Name 2 standards that are currently used in health information technology. Do these standards address human factors and easy interoperability of systems?
• Select topics for class facilitation for weeks 5-6 (in-class 9/25 or 10/2). Plan to work in groups of 3.
• Discuss project proposal checklist and final presentations. Identify possible projects. (in-class 9/16) See below for full discussion of project proposal checklist/outline and final presentations.

Week 5-6 (9/25-10/2): Applications: Knowledge representation and visualization/knowledge engineering/decision support and evidence-based medicine/guidelines/disease surveillance/disease prevention and management/telehealth

Assignments for weeks 5-6:
• Complete readings
• Conduct a class facilitation (either on 9/25 or 10/2) where you lead the class in introducing one of the topics listed above. Facilitation will last 30 minutes. You will be expected to prepare a 1 page handout on your topic that includes objectives, outline of key points, and a reference to a suggested reading. Feel free to use adult learning principles that build on students' previous knowledge and experience and engage students in an active learning style. Work in groups of 3 as possible.

Week 7-8 (10/9-10/16): The electronic health record—why needed, what will it accomplish, how to implement?
Assignments for weeks 7-8:
• Complete readings
• Prepare a 2-3 page paper describing privacy and confidentiality issues in health care IT or human factors in designing and implementing health care IT. (due 10/23)

Week 9 (10/30): Standards, Ontologies, Clinical Decision Support Systems
Assignments for week 9:
• Complete readings
• Please come to class prepared to discuss the following questions: How do standards and ontologies support quality control in health information systems? Define clinical decision support and its role in quality decision making?

Week 10 (311/6): eScience: CTSA, data warehousing, data integrity, collaboration tools

Assignments for week 10:
• Complete readings
• Submit project proposal checklist (due 11/13)
• Please come to class prepared to discuss the following questions: Briefly define eScience. How does it relate to the biomedical research process and transforming the theoretical into clinical applications? What role will collaborative workspaces play in this process?

Week 11 (11/13): Bioinformatics/Genomics/Computational Biology
Assignments for week 11:
• Complete readings and tutorials
• Complete an in-class exercise using the NCBI databases
• Select topics for class facilitation for week 12.

Week 12 (11/20): Education/competencies/roles for various health professionals

Assignments for week 12:

• Complete readings
• Conduct a class facilitation (4/11) where you lead the class in introducing a discussion of emerging roles for various health professionals in supporting health informatics and brainstorm the competencies needed. Facilitation will last 10 minutes. Selection of topics will be done in class to avoid overlap and ensure that a broad range of emerging roles are discussed. You will be expected to prepare a 1 page handout on your topic that includes objectives, outline of key points, and a reference to a suggested reading. Feel free to use adult learning principles that build on students' previous knowledge and experience and engage students in an active learning style.

Week 13 (11/27): Public Health Informatics and Consumer Informatics
Assignments week 13:

Public Health Informatics

• Complete readings
• Please come to class prepared to discuss the following questions: How does the practice of public health differ from the practice of medicine? What is the role of population-based medicine in public health informatics? Does public health informatics support the use of preventive health care measures? Identify two major public health initiatives that have benefited from the application of informatics principles?

Patient/Consumer Health Informatics/PHR/Patient-Centered Care

• Complete readings
• Please come to class prepared to discuss the following questions: What is the role of the consumer in health care and wellness? What role can informatics play in supporting the health and wellness goals of the consumer? Future/benefits of health informatics as it relates to the patient?

Week 14-15 (12/4-12/11): Final presentations

Project Proposal Checklist and Final Presentations

Each student is expected to find 2 partners and then identify a computer system or specialized program for implementation in the health care environment, research the data available on these systems/programs and create a checklist of items to be included in a proposal to either purchase or implement the systems/program selected.. The checklist need only be 1-2 pages long. Be sure to include an introduction describing the purpose and scope of the project. Provide estimated costs and evidence of similar installations/programs if possible. The rest of the document can be in outline format. Examples of proposal topics include creating a document tracking system for grant proposals, implementation of an EHR system in an ambulatory setting, purchase of a database for patient education, creation of a specialized database for tracking resident competencies, implementation of a collaborative workspace, proposal for an informationist program, etc. Tie your checklist to a project at work or to a problem you would like to see solved in your own work environment if possible. Sources for proposal information should include a search of the literature, company web sites, and, where appropriate, individual interviews.

You will not be asked to write the actual proposal or RFP! However, you will be required to prepare a **10 minute presentation** on your project with the purpose of selling it to top management. Sell the program or service to senior management: the decision makers and budget officers! You will need to think about the larger mission of your chosen organization and how you proposal will support it strategically. Is your project's main focus clinical, educational, or research? Will your proposed project save money? Generate additional revenues? Will your proposed project create a more efficient workflow? Support error reduction and quality improvement measures? What is its impact on education? Research efforts? Compliance? How will the project be implemented? Have you planned for change management, training, and feedback? How will you foster user buy-in? Does your proposed system interface, replace, or enhance current systems? How does it meet national standards? Is there an impact on the community? In short, tell your top management what the proposed project is, how it

can be implemented, and why they should support it. Provide any evidence to support your arguments! Do so succinctly in a presentation for the class using slides, handouts, poster materials, etc—your choice!

Bibliography

In BlackBoard.