Course Number: CSc 890  
Course Title: Health Informatics  
Number of Credits: 3  
Schedule: Three hours of lecture/discussion per week.  
Prerequisite: Senior or graduate standing in Computer Science or Senior or graduate standing in Public Health or consent of instructor

Catalog Description  
This course provides an overview of the field of Health Informatics and foundational information about how data, information, and knowledge are represented and used in health applications.

Expanded Description

Health Informatics – Introduction and Overview
Health Information Systems Overview
Electronic Health Records
Computerized Provider Order Entry
Clinical Decision Support Systems
Patient Monitoring Systems
Medical Imaging Systems
Consumer Health Informatics
Administrative, Billing, and Financial Systems
Privacy & Security

Course Objectives  
The objectives of this course include:

• Understand how vocabularies convert data to information
• Understand the importance of data standards, interoperability, as well as the importance of clinical summaries such as Continuity of Care Documents (CCDs) or Continuity of Care Records (CCRs)
• Understand the components of a medical record system, including interoperability and health information exchanges
• Recognize the importance of data security and privacy
• Understand the concepts of confidentiality, availability and integrity
• Understand the notion of consumer health informatics and its use
• Understand the notions of mHealth, telehealth, telemedicine, and public health informatics
• Understand radiological imaging technologies such as PACS and mobile imaging viewer

Learning Outcomes
At the end of this course students will be able to:
• Identify the forces behind health informatics
• State the potential impact of the HITECH Act on health informatics in the United States
• Describe the limitations of paper-based health records
• Identify the benefits and key components of electronic health records
• Describe the ARRA-HITECH programs to support electronic health records
• Describe the benefits and challenges of computerized order entry and clinical decision support systems
• Identify the need for and benefits of health information exchange (HIE) and interoperability
• Enumerate the reasons data standards are necessary for interoperability
• Describe privacy and security measures that are part of HIPAA, HITECH Act, and Meaningful Use and how they fit into the national health IT strategy
• Describe key features of privacy and security, including authentication, encryption, and standards
• Identify and discuss consumer health informatics (CHI) tools
• Discuss the features of personal health records
• List the various ways mobile technology is currently being used in healthcare, along with the associated benefits, risks and costs
• List various telehealth/telemedicine options
• Describe picture archiving and communication systems (PACS), associated standards and system architectures
• Describe public health informatics (PHI)

Method of Evaluation
Student learning will be evaluated on the basis of
• Oral Presentations
• Class Participation
• OpenMRS Open Source Medical Record System Software
  Produce report, de-identify data, export of data from
OpenMRS for analytics; propose new features

- Final Exam

Text:

Submitted by: B. Levine
Approved: November 14, 2014