INLS 725
INLS 725 Electronic Health Records (Online)

Course Description
The course is aimed at exposing students to Electronic Health Record (EHR) systems, with a strong emphasis on the role of EHR systems in healthcare operations.

In this class we will focus on EHR data standards with a strong emphasis on associated data management requirements, applications, and services. The course is aimed at data management specialists, data management administrators, and students interested in health data analytics.

Learning Objectives
- Understand the basic concepts of technological foundations of EHR systems
- Learn data management, architecture and information exchange platforms
- Gain practical experience with EHR tools and application
- Understand meaningful use of EHR system

Course Requirements
- Discussion participations – 40%
- 5 Virtual presentations – 30%
- Final Exam – 30%

Grading
Based on current UNC grading scales, the following grades and corresponding numeric ranges are applicable:

<table>
<thead>
<tr>
<th>Grad Grade</th>
<th>Range</th>
<th>Definitions*</th>
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<tbody>
<tr>
<td>H</td>
<td>95-100</td>
<td>High Pass</td>
</tr>
<tr>
<td>P</td>
<td>80-94</td>
<td>Pass</td>
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<tr>
<td>L</td>
<td>79-79</td>
<td>Low Pass</td>
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<tr>
<td>F</td>
<td>69 or Below</td>
<td>Fail</td>
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*Definitions are from: [http://registrar.unc.edu/academic-services/grades/explanation-of-grading-system/](http://registrar.unc.edu/academic-services/grades/explanation-of-grading-system/)

Required Textbook

Additional Recommended Book

Course Acknowledgements
The design, materials, and implementation of this online version of INLS 725 is the product of a collaborative effort of SILS instructors: Laura Marcial, Javed Mostafa, and myself.
Assignments & Assessments

Materials. All materials can be found in Sakai. The course syllabus, schedule, slides, and other resources will be there.

Videos & Slides. 10-15 min slides and videos every will be published on Tuesday morning, according to the syllabus. Once published, they will be available for you to study through the end of the semester.

Readings. A list of readings, organized in recommended order is provided for each module. Do not be overwhelmed by the length of some lists – most readings are only a few pages long and/or only select pages from each reading are required (details will be listed in each course module). Readings should be completed prior to the beginning of each week so you are prepared to engage in class discussion. Lists of optional readings are provided for most of the modules. The optional readings provide more in-depth exploration of topics of interest and/or background to help prepare short papers/presentations.

The list of readings is provided in the Resources section of the course website.

Discussion. We will be using the discussion forum as the main form of course interaction. You are expected to visit the course site at least 2-3 days out of each week (the instructor will be monitoring the forum daily) to post your responses to discussion prompts and to offer thoughtful replies to your classmates’ posts. We will use the forum for formal discussions of weekly readings, your individual assignments (see below) and to informally discuss any topics/issues that come up during the course. The course is short in duration, so your active engagement in forum discussions is the best way to get the most out of the course!

Five Virtual Presentations. The purpose of these assignments is to allow students to explore a topic of their choice in more detail for each module and to share the results with classmates. You are required to provide a short report in the form of a slide presentation (10 slides not including the title and references slides) on a topic relevant to each of the 5 course modules. A list of suggested topics will be provided in the Resources section of the course site but feel free to choose other topics of interest (pending instructor approval). The presentations should be based on scholarly information sources (make sure to include a proper list of references). Try to use non-textual materials in your presentation (online videos or examples, tables, charts, diagrams) as a way to synthesize and present the key ideas and themes. If some text is necessary, please limit it to very short paragraphs and bulleted lists. Please include voice narration with your presentation. All presentations will be posted on the course website for comments from other class participants. The author is expected to respond to any questions posted by classmates.

Final Exam. The purpose of the final exam is to assess the knowledge gained from the course. As such, it will be based on assigned readings and issues elaborated upon in class discussion. The exam which is essentially ‘open book' will require your responses to a series of short essay questions. The time limit for the exam is approximately 3 hours. The questions will require that you integrate and summarize what has been covered in the course. Pre-exam review suggestions will be provided.

Course Communication

Course announcements. Announcements will be posted on Sakai. Announcements may include information about the week’s work, or other timely information.

Messages. I may use the message tool to send individual messages to you; I may also copy the message to your email address. You can also use the tool to send a message to me.

Email. Email is the best way to contact me. I try to reply to student emails within 48 hours, there are times that it may take me 2-3 days to reply.
Course Outlines

Module 1 – Introduction to EHR concepts and context (Class 1 – 3)

Topics

• Definition of an EHR
• Forces that shape EHR development and implementation
• EHR components and functionality
• The Legal and regulatory context for EHRs
• Implications of EHR for healthcare in the US

Class 1. Tuesday 8/18/15

Introduction to the class and distribution of the syllabus. Important dates, exam, and assignments described.

Material:

1. Video & slides

Class 2. Tuesday 8/25/15

Overview of EHR; platform, standards, applications, and evolution

Material:

1. Video & slides

Class 3. Tuesday 9/1/15

Health data architectures, standards, and protocols.

Material:


Assignment 1 (Virtual Presentation): By August 28, 2015, please select a topic and begin working on your module presentation. Presentations are due September 4, 2015, all comments and responses are due by September 8, 2015.

Module 2 – Supporting Technologies and Standards (Class 4 – 6)

Topics:
• Real-World EHR models
• Health Informatics Standards
• Databases in Healthcare

Class 4. Tuesday 9/8/15

EHR model and database in healthcare.

Material:

1. Video & slides

Class 5. Tuesday 9/15/15

Data modeling in basic and data warehousing contexts.

Material:

1. Video & slides

Class 6. Tuesday 9/22/15

Data modeling in basic and data warehousing contexts. Usability

Material:

1. Video & slides

Assignment 2 (Virtual Presentation): By September 18, 2015, please select a topic and begin working on your module presentation. Presentations are due September 25, 2015, all comments and responses are due by September 30, 2015.

Module 3– EHR in clinical process, workflow (Class 7 – 9)

Topics:

• Business Processes in Clinical Practices
• Understanding Clinical Processes
• Workflow/policy challenges in EHR implementation
• Change Management

Class 7. Tuesday 9/29/15

Data management. Architecture and information exchange platforms
Material:

1. Video & slides
2. Chapter 4. **Carter (2008)**

**Class 8. Tuesday 10/6/15**

Implementing EHR: coding, vocabularies, interfaces, XML, and APIs.

Material:

1. Video & slides

**Class 9. Tuesday 10/13/15 (Fall Break Thursday & Friday)**

Coding and interfacing (contd.). Clinical workflows and clinical processes.

Material:

1. Video & slides
2. Readings: Chapter 8.

- **Assignment 3 (Virtual Presentation):** By October 9, 2015, please select a topic and begin working on your module presentation. Presentations are due October 14, 2015, all comments and responses are due by October 21, 2015.

**Module 4– EHR and Quality of Care; Clinical Decision Support (Class 10 – 12)**

**Class 10. Tuesday 10/20/15**

Evidence-based care and quality improvement I

Material:


**Class 11. Tuesday 10/27/15**
Evidence-based care and quality improvement II.

Material:

1. Video & slides

Class 12. Tuesday 11/3/15

Clinical decision support. Usability of CDS systems.

Material:

1. Video & slides

Assignment 4 (Virtual Presentation): By October 30, 2015, please select a topic and begin working on your module presentation. Presentations are due November 6, 2015, all comments and responses are due by November 11, 2015.

Module 5– EHR Implementation/Evaluation and Meaningful Use (Class 13 – 15)

Topics:

- Defining Meaningful Use
- Evaluation of EHR Features

Class 13. Tuesday 11/10/15

Implementing EHR and evaluating systems. Data Governance. Meaningful use I.

Material:

1. Reading: Chapters 16 and 17

Class 14. Tuesday 11/17/15 & 11/24/15

Data Governance & Meaningful use II.

Material:

1. Video & slides
Class 15. Tuesday 12/1/15

EHR regulations, privacy, and security

Material:

1. Video & slides
2. Reading: Chapters 12 and 13
4. Halamka, J.D. (2010). Making the most of federal health information technology regulations. Health Affairs, 29 (4), 596–600

Assignment 5 (Virtual Presentation): By November 18, 2015, please select a topic and begin working on your module presentation. Presentations are due November 24, 2015, all comments and responses are due by December 2, 2015.

Final Exam

Exams will take place on December 4, 2015 from noon - 3PM EST. Please contact the instructor if you need to schedule an alternate three hour window to complete your final exam.

Policies on Academic Integrity and UNC Honor Code

Chapel Hill has had a student-administered honor system and judicial system for over 100 years. Because academic honesty and the development and nurturing of trust and trustworthiness are important to all of us as individuals, and are encouraged and promoted by the honor system, this is a most significant University tradition. More information is available at http://studentconduct.unc.edu/honorsystem