Syllabus for HIMT 450
Healthcare Information and Technology – Standards

Course Description

Healthcare is the fastest growing employment sector in the United States. The ways in which healthcare is given and ministered, and funded or budgeted differ from the way healthcare worked in the past. These changes have resulted in the use of technologies in nearly every aspect of healthcare and the ways that health information is stored, shared, and used. This has resulted in a broad need for professionals to manage and work in the healthcare information technology and management areas.

This course will be an introduction to healthcare information technology standards, including standards and regulations for documentation. The course also investigates software applications and enterprise architecture in healthcare and public health organizations.

Prerequisite: HIMT 400 Healthcare Information and Technology - Data

Course Learning Objectives

Upon completion of this course, you will be able to:

- Evaluate how HIT links to the business side of healthcare operations and how it impacts the decision making of medical professionals (clinical decision support).
- Evaluate how EMRs are designed from the view of the designer and the user.
- Understand the software development life cycle.
- Discuss how HIT systems should be implemented.
- Discuss processes that can be used to manage and improve HIT operations, including governance of HIT by government and standard bodies.
- Understand how risk is defined relative to HIT and how it can be mitigated.
- Understand HIT privacy, security, and the risks with metadata.
- Discuss the effectiveness of HIT and how reliability is independently verified by CCHIT (for meaningful use and compliance).
- Understand how HIT designers look at HIT.
- Evaluate the process of design and how problems with defective code can be resolved.

HIM Curriculum Competencies

This course presents the content, knowledge, and skills required for the following 2014 AHIMA bachelor's degree competencies:

- I.B.2. - Compile organization-wide health record documentation guidelines.
- I.B.3. - Interpret health information standards.
- II.B.4. - Analyze the security and privacy implications of mobile health technologies.
- V.C.1. - Determine policies and procedures to monitor abuse or fraudulent trends.
- VI.F.1. - Identify departmental and organizational survey readiness for accreditation, licensing, and/or certification processes.
- VI.F.7. - Facilitate the use of enterprise-wide information assets to support organizational strategies and objectives.

Course Materials

Required Cases

Required Book

- *Healthcare Information Technology Exam Guide for CompTIA Healthcare IT Technician and HIT Pro Certifications* (2012), by Kathleen McCormick and Brian Gugerty. **ISBN-13: 978-0071802802**
- *Quality: Tenets on Leadership* (2011), by Russell Roberson. **ISBN-13: 978-1460982808**

Course Activities

The course consists of the following activities and assessments.

Activity	***Assessment***
Textbook reading Viewing the slide commentaries (as available)	Discussions, papers
Discussion participation	Graded discussion p
Writing cases, minor papers (2), and a major paper	Graded
Exams (3)	Graded

Course Outline

The course is organized into 15 modules with the 16th unit as the final exam unit.

- Module 1: Health Information Technology Revolution
- Module 2: EMR and the Physician Office; Clinical Decision Support; Leadership Behavior and HIT

- Module 3: Meaningful Use, Standards, EMR Benefits & Risks, Litigation
- Module 4: EMR Functionality and Human Factors Analysis
- Module 5: Clinical Decision Support; Order Sets
- Module 6: Online Exam
- Module 7: Governance, System Management and Improvement, Training
- Module 8: HIT Trust Framework; Risk, Failure Modes Effects Analysis, Misues Modes Effects Analysis
- Module 9: Privacy and Security; CLOUD; Identity Proofing; Metadata
- Module 10: Reliability; Cybersecurity, Encryption, CCHIT
- Module 11: Online Exam
- Module 12: Computer Hardware and Architecture for HIT
- Module 13: Networks, Software Development Life Cycle, Root Causes of Defective Code
- Module 14: External Focal Areas Linked to HIT
- Module 15: Course Summary
- Module 16: Final Exam

Course Policies

Instructor Biography

- Vice President, Quality and Regulatory Affairs (major medical device manufacturer)
- 30 years of experience in medical drugs and devices (magnetic resonance imaging, blood transfusion, blood substitutes, cancer therapies, cardiovascular and drugs).
- 16 years of experience teaching at the university level, in the areas of leadership, ethics, statistics, and quality.
- Licensed professional engineer; holds professional certifications in the areas of quality engineering, software engineering, Six Sigma, and auditing.
- Active in several professional societies and on the national board of trustees for his college fraternity.
- Served on several professional certification exam committees and has served on U.S. congressional committees regarding medical device regulations.
- Publications in many areas and the author of three books: in the areas of leadership, statistics, and cancer management.
- Frequent speaker at global conferences; presenting on such topics as software design, regulatory affairs, statistics, cancer management, and quality management systems.
- Survived two battles with cancer, in 1991 and 2006 (non-Hodgkin’s lymphoma).

Slide Strategy

- Provide enough information that the student can download the slides and actually learn from the material and such that the student can use the slides in his or her current or future place of work.

- Provide enough information such that with the voice-overs the material is meaningful to the student.
- Provide enough information to link together the holistic courses of the degree program.

Discussion Strategy

- Engage students in discussions that have an application focus.
- Challenge the student's and conventional method of thinking relative to the unit's study area.
- Expectations of students: students are expected to be in EACH discussion questions 2 days during the academic unit. The posts must demonstrate an understanding of the material - using information from the text, the lecture notes / slides, and / or research to support their points. In extreme situations (as determined by the instructor), the student may submit a one page, single spaced answer to each discussion question in lieu of participation. This must be approved by the instructor in advance and must be submitted within one week of the unit closure.

Writing Strategy

- Cases and Minor Papers: Reinforce the concepts of the class; prepare the student for the major paper.
- Major Paper: Allow the student to focus on the challenges of HIT leadership given the current and future environments of the HIT field.

Exam Strategy

- Reinforce the concepts of the class.
- To do well in the class, students must have read the material in the text and the slides.

Grading

Weighting of Assignments

This is how the required work in the course will be weighted:

Assignments	**Units Due**	**Percentages**
Discussion Questions	1-15	20%
Minor Papers	3 & 8	10%
Major Paper	15	20%
First Exam	6	15%
Second Exam	11	15%

Assignments	Units Due	Percentages
Final Exam	16	20%
Total		**100%**

Grading Scale

Grade	Scale
A	90–100%
B	80–89.99%
C	70–79.99%
D	60–69.99%
F	< 60.00%

Course Calendar

All discussions, assignments, and exams are due on Sunday 11:59 p.m. of each unit, except for the final exam, which is due on Friday of the final unit in the semester.

Dates	Topics	Readings	Course Activities	Exams
Unit 1 9/6-9/11	Health Information Technology Revolution	HIT Exam Guide: Read Chapters 1, 2, 3, & 4	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 2 9/12-9/18	EMR and the Physician Office; Clinical Decision Support; Leadership Behavior and HIT	HIT Exam Guide: Read Chapters 5, 6, 7, 8, & 9	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 3 9/19-9/25	Meaningful Use, Standards, EMR Benefits & Risks, Litigation	HIT Exam Guide: Read Chapters 10, 11, 12, 13, & 14 Paperless Healthcare: Progress and Challenges of an IT-Enabled Healthcare System [Note: Purchase of this	Discussion Questions Study the multiple-choice questions at the end of each chapter. Using the material from Units 1, 2, & 3 AND the case (Paperless Healthcare: Progress and Challenges of an IT-Enabled Healthcare System), write a 5-page	

		case is required for the course.]	paper on benefits and risks associated with HIT. The paper should detail out both long- and short-term benefits of HIT. Regarding the 5-page paper, the 5 pages are independent of the title page and reference page.	
Unit 4 9/26-10/2	EMR Functionality and Human Factors Analysis	HIT Exam Guide: Read Chapters 15 & 16	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 5 10/3-10/9	Clinical Decision Support; Order Sets	HIT Exam Guide: Read Chapters 17, 18, & 19	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 6 10/10-10/16				This is a 3½-hour timed exam. There are 12 questions on the exam. Answer ALL of questions listed. Each answer should be 2 to 3 paragraphs in length and should demonstrate knowledge of the material. Linking your answers to the text, to the course slides, and to the course discussions is one way (not the only way) to demonstrate your knowledge of the material.

Unit 7 10/17-10/23	Governance, System Management and Improvement, Training	HIT Exam Guide: Read Chapters 20, 21, 22, & 23	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 8 10/24-10/30	HIT Trust Framework; Risk, Failure Modes Effects Analysis, Misuse Modes Effects Analysis	HIT Exam Guide: Read Chapters 24 & 25	Discussion Questions Study the multiple-choice questions at the end of each chapter. Using the case Electronic Medical Records System Implementation at Stanford Hospital and Clinics, write a 5-page analysis of how the implementation process could be improved. Use the HIT Trust Framework as a guide. Include an additional page that utilizes the SWEATT model to illustrate the points of your paper.	
Unit 9 10/31-11/6	Privacy and Security; Cloud; Identity Proofing; Metadata	HIT Exam Guide: Read Chapters 26, 27, & 28	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 10 11/7-11/13	Reliability; Cybersecurity, Encryption, CCHIT	HIT Exam Guide: Read Chapters 29, 30, & 31	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 11 11/14-11/20				This is a 3½-hour timed exam. There are 10 questions on the exam. Answer ALL of questions listed. Each answer should be 2 to 3 paragraphs in length and

				should demonstrate knowledge of the material. Linking your answers to the text, to the course slides, and to the course discussions is one way (not the only way) to demonstrate your knowledge of the material.
Unit 12 11/21-11/27	Computer Hardware and Architecture for HIT; Software Languages; Legacy Code; Waterfall Method; Agile Method; Database Applications in Healthcare; Data Warehousing; Big Data	HIT Exam Guide: Read Chapters 32, 33, & 34	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 13 11/28-12/4	Networks, Software Development Life Cycle, Root Cause of Defective Code	HIT Exam Guide: Read Chapters 35, 36, & 37	Discussion Questions Study the multiple-choice questions at the end of each chapter.	
Unit 14 12/5-12/11	External Focal Areas Linked to HIT		Discussion Questions	
Unit 15 12/12-12/18	Summary of Course Material		Discussion Questions Submit a 10-page paper, double-spaced, on the topic of HIT. Your paper should focus holistically on the challenges facing HIT and how HIT should adapt to an ever-uncertain and changing environment. Use the information that you have studied in this class for a	

			document that can be used to propel further knowledge in this area. Include a minimum of 5 references; you may use references provided in this class. The cover page, executive summary page, and reference page must be separate from the paper submission and do not count as part of the 10-page requirement.	
Unit 16 12/19-12/23				This is a 3½-hour timed exam. There are 12 questions on the exam. Answer ALL of questions listed. Each answer should be 2 to 3 paragraphs in length and should demonstrate knowledge of the material. Linking your answers to the text, to the course slides, and to the course discussions is one way (not the only way) to demonstrate your knowledge of the material.