



Course Syllabus

HMI550 – Health & Medical Information Systems Overview

Spring 2015

ON LINE

Instructor: **James F. Ferreira**

Office Hours: **Before or after class
Or by Appointment**

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A. Required Text/Author:

Health Care Information Systems: A Practical Approach for Health Care Management, Third Edition; Karen A. Wager, Frances Wickham Lee, and John P. Glaser; Jossey-Bass, 2013. [ISBN 978-1-118-17353-4 paperback, ISBN-978-1-118-41936-6 (ePDF), ISBN 978-1-118-42093-5 (ePub)]

B. Course Description:

IT systems relating to healthcare and medical records are changing at an incredible pace. Significant investments in Electronic Healthcare Records (EHR), electronic prescriptions (ePrescriptions), together with advances in testing, voice recognition, digital imaging and knowledge management have placed an increased emphasis on the integration of all these components. The further challenge of providing national, integrated access to healthcare data across a disparate set of vendors and applications make this a very complex challenge.

This course provides an overview of the discipline of health informatics including key definitions, concepts, models and theories. The student is introduced to key application areas within Health Informatics, as well as historical, current, and emerging information systems in health care. Students will learn features and functions that are common to most health care information systems. (3 Graduate Credits)

C. Prerequisite: None

D. Learning Outcomes

Upon successful completion of this course, students will:

1. Understand the portfolio of systems in healthcare
2. Be aware of the integration challenges across healthcare systems.
3. Be aware of the integration challenges across healthcare systems.

E. **Requirements:** Each student is expected to:

A. Read the text and prepare homework assignments.

F. **Evaluation:**

The final course grade will be based on the following components and all are required for a passing grade.

1. Case Assignments	65%	Written
2. Term Project	35%	Written

G. **Useful websites**

The Official Web Site for the Medicare and Medicaid Electronic Health Records (EHR) Incentive Programs, <http://www.cms.gov/ehrincentiveprograms/>

HIMSS (Healthcare Information and Management Systems Society)
www.himss.org/

www.Healthit.gov (*the official site for **Health IT** information*)

www.Healthcareitnews.com

www.Healthcare-informatics.com (Healthcare IT Leadership, Vision & Strategy)

H. **Assignments**

Starting with week 2 and through week 6, students will be required to answer the questions that are under the term **Case Number** on pages 5-12 for each week. A successful summary will demonstrate that the student has distilled the key messages from the readings and made critical insights into the issues raised and addressed by the authors. **Late** homework assignments will **not** be accepted for credit.

I. **Term Project**

A final paper (10-15 pages) will be due between the final week of class (February 25, 2015-March 3, 2015). This paper is based on the detail outlined in a separate file called "Term Project".

J. Grading System:

The following grading system will be effective January 1, 2012. All other grading policies described in the student handbook still apply: p. 13 for master degree programs; p. 16 for undergraduate programs

Letter Grade	Numerical Equivalent	Grade Point Value
A	94-100	4.0
A-	90-93	3.7
B+	87-89	3.3
B	84-86	3.0
B-	80-83	2.7
C+	77-79	2.3
C	74-76	2.0
C-	70-73	1.7
D+	67-69	1.3
D	64-66	1.0
D-	60-63	0.7
F	Below 60	0.0

A grade of WP or WF appears on the transcript but is not calculated into the grade point average (G.P.A.). The G.P.A. is determined by multiplying the grade point value by the number of credits for a given course, summing the products and dividing by the number of credits attempted.

At the graduate level a grade below a C is a failing grade.

An *Incomplete Grade (INC)* may be given to a student that denotes that some part of the course, for reasons acceptable to the instructor, has not been completed and the student is to this point passing the course. An Incomplete grade should be given as an exception only, such as a medical emergency. Incomplete grades should not be given to a student with the sole objective of the student receiving a higher grade. The work must be made up within seven weeks after the last session of the course. Any circumstances warranting an extension must be approved by the instructor and the Vice President of the Graduate School and submitted in writing to the Assistant Registrar in the GPS Office.

K. Academic Honesty:

A university is a community of individuals who voluntarily join together for the purpose of learning. At the heart of this sense of academic community is the idea that the behavior of its **members is guided by a shared commitment to the highest standards of academic integrity.** Any form of cheating, plagiarism or assisting others in acts of dishonesty is a violation of such standards. As a student in this course, it is assumed that you pledge that you will neither receive nor give unauthorized assistance during the completion of all my work in this course. You will not engage in plagiarism. (The definition of plagiarism is the deliberate presentation, oral or written, of words, facts, or ideas belonging to another source without proper acknowledgment.)

Please be aware of Endicott College's academic honesty policy. Cheating/ plagiarism (to include the cutting and pasting of unmodified code from the internet) is grounds for failure in the class, and possibly academic dismissal.

L. ADA Policy:

If you as a student qualify as a person with a disability, as defined in Chapter 504 of the Rehabilitation Act of 1973, you may wish to discuss the need for reasonable accommodation with your instructor. You should make this contact at the start of the semester

M. Extra Credit

There is **no** extra credit work in this course.

N. Other College Resources: Endicott Library: (978) 232-2292

O. E-mail Format:

If you e-mail me for any reason, you are requested to use the following format.

jferreir@endicott.edu

Subject: MHI550 (Your Name) (Topic)

P. Course Schedule and Assignments:

**** SYLLABUS IS SUBJECT TO REVISION AT THE INSTRUCTOR'S DISCRETION ****

Class

<u>#</u>	<u>Date</u>	<u>Topic</u>	<u>Read</u>
1	01/21/2015	Course Introduction / Overview	- - - -
	TO	Chapter 1 - Introduction to Health Care Information	Pg. 3-47
	01/27/2015	Chapter 2 – Health Care Data Quality	Pg. 49-65
		Chapter 3 – Health Care Information Regulations, Laws, and Standards	Pg. 67-99
		Case 1: Broad Support For a Capital Project	Pg. 597-599

Questions to be used as a basis for your solution or recommendation.

Assume that the CEO believes that the PACS project is well aligned with Lakeland's strategic goals but that this case hasn't been made clear to the board. How might Lakeland build this case? Who should lead that effort? What work needs to be done that has not occurred yet?

Are the board's concerns about medical staff commitment relevant in this case? Why or why not?

Develop a strategy for addressing the board's concerns and winning their buy-in and approval for the PACS project. Include in your description the who, what, where, when, and how.

Case 2: The Decision to Develop an IT Strategic Plan Pg. 600-601

Questions to be used as a basis for your solution or recommendation.

What steps should the CEO take to develop an IT strategy for the organization?

Are there unique risks to the ability of Meadow Hills Hospital to develop and implement an IT strategy?

Meadow Hills appears to have been successful despite years without an IT strategy. Why is this?

Class

<u>#</u>	<u>Date</u>	<u>Topic</u>	<u>Read</u>
2	01/28/2015	Chapter 4 History and Evolution of Health Care Information Systems	Pg. 103-131
	TO	Chapter 5 Clinical Information Systems	Pg. 133-178
		Chapter 6 Federal Efforts to Enhance Quality of Patient Care through the Use of Health Information Technology	Pg. 179-207
	02/03/2015		

Case 4: Strategic IS Planning for the Hospital ED Pg. 603-606

Questions to be used as a basis for your solution or recommendation.

Outline the steps you would take to initiate a strategic planning process for improving the ED information system. How will you ensure that this plan is in alignment with the hospital's and department's overall strategic plans?

Multiple factors have contributed to the current state of the ED at Newcastle Hospital and are listed in the case. Which of these do you think will be the most difficult to overcome? Why?

The new CEO has good insight into the ED issues. Assuming that his assessment of the situation is accurate, discuss how his continued support could affect the outcome of any ED IS strategic plan.

Assume the CEO has appointed you to spearhead the ED IS strategic planning effort. What are the first steps you will take? Outline a general plan of action for the next three months. Indicate, by title, whom you would involve in the process. Explain your choices.

Case 5: Planning an EHR Implementation Pg. 606-608

What is your assessment of this situation? What are the physician group's possible reasons for deciding to proceed on an independent path?

If you were the CEO, what steps would you take to bring the hospital and physician group IT plans back into alignment? Should the EHR effort proceed or wait until the CPOE initiative is complete? Should you require that both systems come from the same vendor? Explain your rationale.

The LWMC board is concerned that the physicians are being naive about the challenges of EHR implementation, have established no measurable goals for the system, and have only weak incentives to make the implementation successful. How would you address these concerns?

Class

<u>#</u>	<u>Date</u>	<u>Topic</u>	<u>Read</u>
3	02/04/2015	Chapter 7 System Acquisition	Pg. 209-239
	TO	Chapter 8 System Implementation and Support	Pg. 241-270
		Chapter 9 Technologies That Support Health Care Information Systems	Pg. 273-316
	02/10/2015	Chapter 10 Health Care Information System Standards	Pg. 317-350

Questions to be used as a basis for your solution or recommendation.

Case 6: Implementing a Capacity Management Information System Pg.608-609

Do you think the absence of a full-time CIO has had an impact on this acquisition project? Why or why not?

What steps should the CIO take to ensure that the capacity management system will be purchased and implemented? What do you see as the critical first step in this process? Why?

Discuss who you think should serve on the project steering committee. Who should serve as chair? Why?

At this point, what do you think is a realistic time frame for implementation of the capacity management system? What steps can be taken to ensure the new timeline is met despite competing priorities?

Case 7: Implementing a Telemedicine Solution Pg. 609-611

What are the ways in which Grand's early adoption of other health care information system technologies might affect its adoption of telemedicine solutions?

What do you see as the most likely barriers to the success of telemedicine in the areas of radiology, behavioral health, and intensive care? Which of these areas do you think would be the easiest to transition into telemedicine? Which would be the hardest? Why?

If you were charged by Grand to bring telemedicine to the facility within eighteen months, what are the first steps you would take? Whom would you involve in the planning process? Defend your response.

Class

<u>#</u>	<u>Date</u>	<u>Topic</u>	<u>Read</u>
4	02/11/2015	Chapter 11 Security of Health Care Information Systems	Pg. 351-391
	TO	Chapter 12 Organizing Information Technology Services	Pg. 395-436
	02/17/2015	Chapter 13 IT Alignment and Strategic Planning	Pg. 437-465

Questions to be used as a basis for your solution or recommendation.

Case 9: Conversion to an EHR Messaging System Pg. 613-615

Outline the steps that you would take to ensure a successful conversion from the existing call center system to the new EHR compatible system. Defend your response.

Who should be involved in the conversion planning and implementation? Discuss the roles of the people on your list and your reasons for selecting them.

What are some strategies that you would employ to minimize physicians' and other users' resistance to the conversion?

Do you think that making sure all units are running the same EHR functions is a necessary precursor to the conversion to the messaging and prescription writing components? What information would be helpful in making this determination?

Case 10: Concerns and Workarounds with a Clinical Documentation System Pg. 615-617

What is the major problem in this case? What factors seem to have contributed to the current situation?

The nurses at Garrison argue that pediatric hospitals and intensive care units, in particular, are different from adult hospitals and that these differences should be clearly addressed in the implementation of a new clinical documentation system. Do you agree with this argument? Why or why not? Give examples from the literature to support your views.

How might the workflow issues and concerns mentioned in this case been detected earlier?

Assume you part of the leadership team at Garrison. How would you assess the current situation? What would you do first? Next? Explain what steps you would take and why you feel your approach is necessary.

What lessons can be learned from this case and applied to other settings?

Class

<u>#</u>	<u>Date</u>	<u>Topic</u>	<u>Read</u>
5	02/18/2015	Chapter 14 Strategy Considerations	Pg. 467-489
		Chapter 15 IT Governance and Management	Pg. 491-520
TO		Chapter 16 Management's Role in Major IT Initiatives	Pg. 521-553

Questions to be used as a basis for your solution or recommendation.

02/24/2015 **Case 11: Strategies for Implementing CPOE** Pg. 617-620

Assume you are part of a team charged with leading the implementation of CPOE within Health Matters. How would you approach the task? What would you do first? Next? Who should be involved in the team? Lead the team?

The CIO hasn't been hired yet. Do you see that as a problem? Why or why not? What role, if any, might the CIO have in the CPOE implementation project?

To what extent does that fact that Health Matters is a relatively new health system simplify or complicate the CPOE implementation project? How do other health systems typically implement CPOE or other clinical information system projects of this magnitude?

How might you solicit the wisdom and expertise of others who may have undergone CPOE projects like this one? Or who have used Meditech's CPOE application? How might Steve Forthright and Mary White's prior experiences with partially and fully failed implementations affect their views in this case?

Develop a high-level implementation plan of key tasks and activities that will need to be done. How will you estimate the time frame? The resources needed? What role does the vendor have in establishing this plan?

Case 12: Implementing a Syndromic Surveillance System Pg. 620-621

If you were the head of the agency's epidemiology section, how would you address the four challenges described here?

Which of the challenges is the most important to address? Why?

Class

<u>#</u>	<u>Date</u>	<u>Topic</u>	<u>Read</u>
5	02/18/2015	Case 12: Implementing a Syndromic Surveillance System	Continued
	TO	If you were a hospital CEO being asked to redirect IT resources for this project, what would you want in return from the agency to ensure that this system provided value to your organization and clinicians?	
	02/24/2015		
	(Continued)	A strong privacy advocacy group has expressed alarm about the potential problems that the system could create. How would you respond to those concerns?	
6	02/25/2015	Chapter 17 Assessing and Achieving Value in Health Care Information Systems	Pg. 555-593
	TO	Questions to be used as a basis for your solution or recommendation.	
	03/03/2015	Case 13: The Admitting System Crashes	Pg. 621-623
		If you were the CIO of Jones Regional Medical Center during this system failure, what steps would you take during the outage? What steps would you take after the outage to reduce the likelihood of a reoccurrence of this problem?	
		The root cause analysis of the outage showed that process, technology, and staffing factors all contributed to the problem. What are some of the likely factors? Which of these factors do you believe are likely to have been the most important?	
		If you were a member of the audit committee of the Jones board of trustees, what questions would you ask the CIO?	
		What issues and problems should a disaster recovery plan prepare for? How does an organization determine how much to spend to reduce the occurrence and severity of such episodes?	

Class

<u>#</u>	<u>Date</u>	<u>Topic</u>	<u>Read</u>
6	02/25/2015	Case 14: Breaching the Security of an Internet Patient Portal	Pg. 623-625
	TO	How serious was this e-mail security breach? Why did the Kaiser Permanente leadership react so quickly to mitigate the possible damage done by the breach?	
	03/03/2015	Assume that you were appointed as the administrative member of the crisis team created the day the breach was uncovered. After the initial apologies, what recommendations would you make for investigating the root cause(s) of the breach? Outline your suggested investigative steps.	
	(Continued)	How likely do you think future security breaches would be if Kaiser Permanente did not take steps to resolve underlying group and organizational issues? Why?	
		What role should the administrative leadership of Kaiser Permanente take in ensuring that KP Online is secure? Apart from security and HIPAA training for all personnel, what steps can be taken at the organizational level to improve the security of KP Online?	

S-MHI550-Spring 2015