Supply Chain Management
Course Number: 22:799:651
Course Title:Healthcare Innovation & Technology Management

COURSE OVERVIEW

It is commonly held that the implementation of health information technology (HIT) can addressed pressures facing healthcare providers to reduce costs while improving quality, patient satisfaction, safety and other important outcomes. Unfortunately, some healthcare providers struggle to effectively implement HIT. For example, Cedars Sinai Medical Center invested $34 million in an EHR system only to find that "physicians found that it took much, much longer to use the new computer system than did the same ordering with pen and paper… [and placed] severe limitations on their ability to make medical judgments," (Smelcer, Jacobs-Miller, & Kantrovich, 2009: p. 70). Similarly, Kaiser Permanente reported that clinicians were taking 30 to 75 minutes longer per day to do their work with an EHR system (Scott, Rundall, Vogt, & Hsu, 2005) , although things are reportedly better now.

The course examines, from a managerial perspective, the critical issues in planning and implementation of healthcare technologies such as electronic health record (EHR), Radio Frequency Identification (RFID), telemedicine, social media and mobile devices, personal health records, and other emerging technologies. It examines salient issues such as benefits from, selection of, and user support of, EHR. It examines the emerging concepts of Regional Health Information Exchanges. It also provides an overview of Practice Management Systems.

COURSE MATERIALS

Reading Materials

To keep pace with the evolution of HIT in practice, this course will incorporate articles, case studies, textbook content, and guest speakers from industry. The textbook contains cases.

The required text is currently:

Brown, G.D., Patrick, T.B. and Pasupathy, K.S. (2013). Health Informatics: A systems perspective, 2nd Edition. Health Administration Press: Chicago, IL.

COURSE OBJECTIVES

The objective of the course is to provide students with the practical aspects of planning, implementing, and managing HIT and integrate HIT into the organization to effectively support work flows. This course offers best practice methods to improve quality, patient satisfaction, safety and other important outcomes through the effective selection and use of HIT. Specific objectives include:

1. To describe the current HITs and their potential to improve healthcare delivery.
2. To highlight effective methods for valuation, selection and implementation of EHR systems.
3. To examine the role of clinical decision support in extracting value from HIT.
4. To describe E-Health and consumer health informatics.
5. To explore health information privacy and security.

LEARNING OUTCOMES

- Understanding current HITs and their potential to improve healthcare delivery.
- Learning effective methods for valuation, selection and implementation of EHR systems.
- Understanding the role of clinical decision support in extracting value from HIT.
- Learning about E-Health and consumer health informatics.
- Understanding health information privacy and security.

CLASS STRUCTURE

This is 1 credit hybrid class that meets over 4 weeks only—() from () through (). All lectures (except the first) will be recorded either by me or delivered via webcast, The lectures will be about 60-75 minutes in length.

(), will be our only in person class and we will:

- Review the Syllabus
- Class Structure
- Regular Q&A schedule by Skype for weeks 2-4.
- Schedule
- Grading
- Assign Teams 3, 4-person teams
- Cover Chapters 1-2. Please read and carefully review the questions at the end of each Chapter, Case Studies, and, the Case Study questions as we will be discussing them in the first class.

Lectures for Chapters 4 through 15 will be posted to the Canvas after our first class. Teams may choose from a list of short research projects or suggest one of their own.

Additional required readings:

https://www.slideshare.net/HINZ/11001130-anthony-hill-health-disability-update-thurs-unzipptx

https://www.healthit.gov/sites/default/files/page/2018-04/Optimizing_Strategies_508.pdf

---

ACADEMIC INTEGRITY

I do NOT *tolerate cheating*. Students are responsible for understanding the RU Academic Integrity Policy
http://academicintegrity.rutgers.edu/

I will strongly enforce this Policy and pursue *all* violations. On all examinations and assignments, students must sign the RU Honor Pledge, which states, "On my honor, I have neither received nor given any unauthorized assistance on this examination or assignment." I will screen all written assignments through *SafeAssign* or *Turnitin*, plagiarism detection services that compare the work against a large database of past work. Don't let cheating destroy your hard-earned opportunity to learn. See business.rutgers.edu/ai for more details.

COURSE RELATIONSHIP WITH OTHERS IN THE PROGRAM

This course is going to complement other courses offered in the MS-HSM program by discussing important and timely technology issues facing healthcare providers. Discussions of information security and privacy will complement content in the Healthcare Legal and Ethics course. HIT implementation requires a robust understanding of workflows which will involve topics covered in the Healthcare Services Management and Lean Six Sigma & Service Process Quality courses. Course content regarding E-Health and consumer health informatics will complement material from the Healthcare Marketing courses.

Two Most Closely Related Courses and description of the differences from the proposed course;

> **22:799:696 · New · Healthcare Services Management (3 credits)**
> This course provides students with strategies, techniques, and best practices to improve unit, organizational, and integrated delivery system performance by applying key concepts from operations and supply chain management to the healthcare context. The Health Information Technology Management course complements this course by covering the critical issues in planning and implementation of healthcare technologies.

> **22:799:676 · Lean Six Sigma & Service Process Quality (3 credits)**
> This course covers the fundamentals of Lean and Six Sigma, and will equip students with important control tools and strategies to improve the performance of general service processes. The Health Information Technology Management course is different from this course because it focuses on the planning and implementation of HIT in facilitating service processes.

RESEARCH PROJECT

Using what you have learned, each team may pick 1 project from the list below:

- Compare and contrast Medicare's Blue Button program to the program provided by your health plan. All major health plans have something similar. A team that that has four or five different health plans would be good here.
- Evaluate the functionality of https://www.medicare.gov/hospitalcompare/search.html. Make specific recommendations on how to improve it.
- Interoperability has plagued the Electronic Health Record environment since its inception. MTBC recently announced a block chain solution (https://globenewswire.com/news-release/2018/06/27/1530349/0/en/MTBC-Takes-Electronic-Health-Records-to-the-Next-Level-with-Blockchain-Technology.html). Research what they are doing and determine how well they address the considerations for inoperability, clinical decision making, e-health, consumer health informatics and security and privacy. Be sure and provide any needed background on block chain as it is NOT covered in the text.
- Genomic medicine is evolving rapidly. Chapter 12 describes the many areas where informatics plays a role. For each of the key concepts listed in the text, describe what analytical tools (from your Operations Analysis course) could be deployed to help with the implementation. Briefly explain why the tools you select would be appropriate for the task.
- In (), IDx received approval for the first fully autonomous AI diagnostic system for the early detection of diabetic retinopathy. This means that healthcare providers who are not eyecare specialists can use the technology to test for diabetic retinopathy. Research what the company is doing (https://www.eyediagnosis.net/) and discuss the potential for disruptive effects on delivery of care to patients with diabetes ages 22-65. To what degree is the IDx model a blueprint for other disruptive diagnostic technologies? Explain.
- A team may select another project if approved by the instructor.

Teams will prepare a powerpoint presentation with a voiceover. Each team member must present and clearly introduce themselves (first and last name) when they begin speaking. Each of these topics are expected to take about the same amount of work to do well. My estimate is the presentations should take between 25-40 minutes.

GRADING POLICY

Grading Criteria

- 80% case presentations
  - Members of the team will anonymously grade each other using a 1-page form and submit to me. This will comprise 25% of the presentation grade.
  - Each student will grade the presentations of the other 2 teams and submit grades to me on the Canvas. This will comprise 25% of the presentation grade.
  - I will grade the other 50% of the presentation.

- 20% Quiz. Note, these questions will be simple to answer if you have kept up with the course and take no more than 1 hour to complete. The quiz will be taken on the Canvas.

Presentations must be received on the Canvas by (). Class members will have until () to review the presentations, submit feedback on the presentations, and submit feedback anonymous feedback on members of their team.

The Instructor makes the final grade decision based on interactions, observations, evaluations and consideration of input received.

Note: Numeric grades converted to Alpha Grades as follows:

A	90.00 – 100	C	70.00 – 76.99
B+	87.00 – 89.00	D	60.00 – 69.99
B	80.00 – 86.99	F	59.99 and Lower
C+	77.00 – 79.99		

Final grades will be posted to the Canvas on or before ().

COURSE SCHEDULE

Curriculum
In Class. Review Syllabus, Formulate Team, Select Class Project, Lecture and Discussion on Chapters 1-2. After class, release questions on Chapters 1-2. Read Chapters 3-5, ().
() Q&A Webcast Chapters on 3-5. Review Case Studies Chapters 3, 5. Answer questions. After webcast, read Chapters 6, 7, 12, and 13. Quiz Posted.
() Quiz Due. Webcast Chapters 6, 7, 12 & 13.   Review Case Studies Chapters 7, 13. Answer questions.
Class project loaded to Canvas by teams.

Students submit review of projects as well as anonymous review of fellow team members.
Instructor posts grades to Canvas

SUPPORT SERVICES

If you need accommodation for a ***disability***, obtain a Letter of Accommodation from the Office of Disability Services. The Office of Disability Services at Rutgers, The State University of New Jersey, provides student-centered and student-inclusive programming in compliance with the Americans with Disabilities Act of 1990, the Americans with Disabilities Act Amendments of 2008, Section 504 of the Rehabilitation Act of 1973, Section 508 of the Rehabilitation Act of 1998, and the New Jersey Law Against Discrimination. More information can be found at ods.rutgers.edu.

[Rutgers University-New Brunswick ODS phone (848)445-6800 or email dsoffice@echo.rutgers.edu]

[Rutgers University-Newark ODS phone (973)353-5375 or email ods@newark.rutgers.edu]

If you are ***pregnant***, the Office of Title IX and ADA Compliance is available to assist with any concerns or potential accommodations related to pregnancy.

[Rutgers University-New Brunswick Title IX Coordinator phone (848)932-8200 or email jackie.moran@rutgers.edu]

[Rutgers University-Newark Office of Title IX and ADA Compliance phone (973)353-1906 or email TitleIX@newark.rutgers.edu]

If you seek ***religious accommodations***, the Office of the Dean of Students is available to verify absences for religious observance, as needed.

[Rutgers University-New Brunswick Dean of Students phone (848)932-2300 or email deanofstudents@echo.rutgers.edu]

[Rutgers University-Newark Dean of Students phone (973)353-5063 or email DeanofStudents@newark.rutgers.edu]

If you have experienced any form of ***gender or sex-based discrimination or harassment***, including sexual assault, sexual harassment, relationship violence, or stalking, the Office for Violence Prevention

and Victim Assistance provides help and support. More information can be found at http://vpva.rutgers.edu/.

[Rutgers University-New Brunswick incident report link: http://studentconduct.rutgers.edu/concern/. You may contact the Office for Violence Prevention and Victim Assistance at (848)932-1181]

[Rutgers University-Newark incident report link: https://cm.maxient.com/reportingform.php?RutgersUniv&layout_id=7 . You may also contact the Office of Title IX and ADA Compliance at (973)353-1906 or email at TitleIX@newark.rutgers.edu. If you wish to speak with a staff member who is confidential and does **not** have a reporting responsibility, you may contact the Office for Violence Prevention and Victim Assistance at (973)353-1918 or email run.vpva@rutgers.edu]

If students who have experienced a temporary condition or injury that is adversely affecting their ability to fully participate, you should submit a request via https://temporaryconditions.rutgers.edu .

If you are a military *veteran* or are on active military duty, you can obtain support through the Office of Veteran and Military Programs and Services. http://veterans.rutgers.edu/

If you are in need of *mental health* services, please use our readily available services.

[Rutgers University-Newark Counseling Center: http://counseling.newark.rutgers.edu/]

[Rutgers Counseling and Psychological Services–New Brunswick: http://rhscaps.rutgers.edu/]

If you are in need of *physical health* services, please use our readily available services.

[Rutgers Health Services – Newark: http://health.newark.rutgers.edu/]

[Rutgers Health Services – New Brunswick: http://health.rutgers.edu/]

If you are in need of *legal* services, please use our readily available services: http://rusls.rutgers.edu/

Students experiencing difficulty in courses due to *English as a second language (ESL)* should contact the Program in American Language Studies for supports.

[Rutgers–Newark: PALS@newark.rutgers.edu]

[Rutgers–New Brunswick: eslpals@english.rutgers.edu]

If you are in need of additional *academic assistance*, please use our readily available services.

[Rutgers University-Newark Learning Center: http://www.ncas.rutgers.edu/rlc

[Rutgers University-Newark Writing Center: http://www.ncas.rutgers.edu/writingcenter]

[Rutgers University-New Brunswick Learning Center: https://rlc.rutgers.edu/]

[Optional items that many faculty include:

  - Students must sign, date, and return a statement declaring that they understand the RU Academic Integrity Policy.

  - Students must sign, date, and return a statement declaring that they understand this syllabus.]