SYLLABUS – SPRING 2024

DRAFT

COURSE NUMBER	EMBA 5362.001
COURSE TITLE	Health Information Technology and Informatics
INSTRUCTORS	Joni Padden, DNP, APRN, BC and Susan McBride, PhD, RN, NI-BC, CPHIMS, FAAN
EMAIL	Joni Padden jpadden@uttyler.edu and Susan McBride susanmcbride@uttyler.edu
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OFFICE HOURS	By Appointment
CLASS MEETINGS	Ref. EMBA Cohort Schedule

I. COURSE OVERVIEW

This course addresses Health Information Technology (IT) challenges and strategies in the evolving healthcare landscape. It includes a comprehensive review of the information, applications, and infrastructure needed to manage complex healthcare organizations effectively and safely. The course is grounded in the regulatory requirements and policies that shape the US healthcare system, emphasizing the importance of healthcare IT infrastructure.

Students will explore the role of executive leaders in transforming healthcare delivery systems through the effective deployment of healthcare IT. They will also examine common health IT challenges, design improvement strategies, measurement effectiveness, and study emerging point-of-care technologies.

The course combines conceptual learning, practical application, subject matter experts (SME) and peer dialogue, both online and in-class, on complex informatics and technology issues impacting patient care and population health. It aims to prepare executive leadership for clinical or administrative roles in the healthcare industry, focusing on the practical application of healthcare informatics.

II. CATALOG DESCRIPTION

This course is an in-depth review of the clinical and administrative information, applications, technologies, and infrastructure required to effectively manage complex healthcare organizations. It also covers the IT-related challenges and strategy considerations healthcare executives face in this rapidly changing care delivery and financing environment. Prerequisite: Admission to EMBA-HCM program.

III.

Required Textbook: Health Informatics. (2022). (W. Hersh & K. Hollis, Eds. 8th ed.).
Recommended Text: Lee, P., Goldberg, C., & Kohane, I. (2023). *The AI Revolution in Medicine GPT-4 and Beyond*.

IV. STUDENT LEARNING OUTCOMES

- Understand the fundamentals of Informatics and apply the science of Informatics to real-world problems faced by healthcare executive leaders.

- Evaluate public health policy with respect to health information technology infrastructure and the role of the executive leader.
- Examine common issues with health information technology and unintended consequences of health information technology, applying workflow redesign strategies and other quality improvement tools to address the issues.
- Appraise data management challenges and issues relating to data quality, data management, privacy, and security.
- Identify the impact of existing and emerging technology on healthcare and how leaders can use Health IT innovation for strategic business planning.
- Examine ethical, legal, and policy implications for health information technology.

V. SOULES COLLEGE OF BUSINESS CORE VALUES

Professional Proficiency
Technological Competence
Global Awareness
Social Responsibility
Ethical Courage

VI. GRADING POLICY

Final Grades		
A	=	90% +
B	=	80% - 89%
C	=	70% - 79%
D	=	60% - 69%
F	=	<60%

Grade Distribution	
Module I Policy Dialogue with Panel of Experts	10%
Module II Data Standards and Interoperability Case Study Completion	10%
Module III Enterprise Data Warehouse Strategies and Electronic Clinical Quality Measures Organization Self-Assessment and Presentation	20%
Module IV Informatics and Data Analytics for Strategic Planning and Public Health Lab Participation and Completion	10%
Module V Case Study Risk Assessment Exercise	10%
Module VI Workflow Redesign Case Study Exercise	10%
Module VII New and Emerging Technologies Presentation and Manuscript Preparation DRAFT for peer review publication (optional)	30%
Attendance, preparation and participation in exercises at Weekend Intensives	Pass/Fail
Total	**100%**
***Note: An "F" in P/F activities will result in a failure of the course**	

I. ATTENDANCE/WEEKEND MAKE-UP POLICY

The Executive MBA Healthcare Management program is a face-to-face weekend cohort model. It is expected that executive students are present face-to-face in COB 321 on the outlined weekends. In some cases, extenuating circumstances may warrant special accommodations to be made between the student and faculty member. Students are expected to contact and receive prior approval from the faculty member. Please refer to the specific course policy on attendance as outlined below.

Preparation before the face-to-face and virtual weekend events with reading and review of materials is required for full interactive engagement with applied approaches to understand and addressing health IT challenges in the industry. Please come prepared.

II. CONTENT

Module I: Introduction to Biomedical and Health Informatics

Reading Assignments:
Chapters 1-3: Health Informatics. (2022). (W. Hersh & K. Hollis, Eds. 8th ed.).

Content to be covered in Module I and the first-weekend immersion:

- Orientation to the course:
  - Introduction to the course
  - Course deliverables
  - Final project discussion and potential selection of topics
- Informatics: What's it all about?
- Policy Dialogue with Guest Speakers

Module II: Electronic Health Records, Data Standards and Interoperability (Cover unintended consequences—burden of documentation and burnout)

Reading Assignments:
Chapters 4-5, 10: Health Informatics. (2022). (W. Hersh & K. Hollis, Eds. 8th ed.).
ADDITIONAL RESOURCES TO BE ADDED—VIDEOS AND LINKS ON ALL MODULES

Content to be covered in Module II and the 2nd weekend immersion:

- EHRs
- Data Standards
- Interoperability and Health Information Exchanges (HIE)
- Panel of experts on HIEs in Texas

Module III: Data Management and Analytics: Enterprise Data Strategies for Success (EDW design, dashboards, data structures, outsource versus in-house support)

Reading Assignments:

Online in Canvas

McBride, S., & Barlow, S. (2022). Chapter 17: Strategic Thinking in Design and Deployment of Enterprise Data, Reporting, and Analytics. Nursing Informatics for the Advanced Practice Nurse: Patient Safety, Quality, Outcomes, and Interprofessionalism, 3rd Edition, p. 414-439. (Available in Canvas)

Dardis, M., & McBride, S. (2022) Chapter 23: Electronic Clinical Quality Measures: Building an Infrastructure for Success. Nursing Informatics for the Advanced Practice Nurse: Patient Safety, Quality, Outcomes, and Interprofessionalism, 3rd Edition, pp. 590-611. (Available in Canvas)

Content to be covered in Module III and the 3rd weekend immersion:

- How ready is your organization for Enterprise data?
- Present and discuss findings on your organization's self-assessments done
- Interact with Guest Speakers and Panel of Experts on the following topics:
  - Advanced Analytics: What does it really take?
  - EDW design, dashboards, data structures, outsourcing versus in-house support
  - Importance of data governance to enterprise data strategy

Enterprise Data Warehouse Strategies and Readiness Assessment (10%)

Read Chapter 17 and examine the Enterprise Data Warehouse Assessment within the chapter and the Excel tool within Canvas and think about how an organization would use the tool to assess their organization's readiness for People, Process and Technology. (See Chapter 17 and Tables 17.4 and 17.5).

Read the Chapter 23 posted in Canvas on Electronic Clinical Quality Measures: Building an Infrastructure for Success. Focus your attention in reading on the complexity and importance of valid and reliable data for regulatory and payment reform initiatives and the importance of eCQMs to quality, safety and a healthy bottom line.

Based on these reading assignments and other resources relating to EHR data availability for quality measures, you will complete the Enterprise Data Warehouse Assessment within Canvas as an organization self-assessment and utilize the findings to present your assessment of your organization and your reflections on lessons learned.

Based on the reading assignments relating to EHR data availability for outcome measures, we suggest you interview a content expert within your organization on the availability of a data warehouse and the need for advanced analytics with business intelligence tools. Be prepared to discuss how your organization is addressing these challenges. Use the assessment tool as a guide for the interview.

Module IV: Data Analytics for Strategic Planning and Public Health

Reading Assignments:
Chapters 6 & 19: Health Informatics. (2022). (W. Hersh & K. Hollis, Eds. 8th ed.).

Review a video and dashboards on use of Analytic Business Intelligence (BI) Tools—two examples of leading tools used in healthcare (Microsoft Power BI & Tableau)
https://www.tableau.com/solutions/industries/healthcare-life-sciences#content-496192
Healthcare | Microsoft Power BI

Content to be covered in Module IV and the 4th weekend immersion:

- Public Domain data for Strategic Planning: Inbound and Outbound Market Analysis
- Data Management and Advanced Analytics
- Public Health Informatics
- Hands-on exercise to inform strategic success and health outcomes

Module V: Health Information Technology Governance: Ethical, legal, and policy implications (cover Privacy and Security and risk assessment)

Reading Assignments:
Chapters 13 & 22: Health Informatics. (2022). (W. Hersh & K. Hollis, Eds. 8th ed.).

Content to be covered in Module V and the 5th weekend immersion:

- Criticality of Data Governance
- Data Governance Models
- Privacy and Security and risk assessment: current state and expectations for HIPAA updates
- Case Study discussions
- Protecting your Organization as an Executive Leader: Panel Participation

Module VI: Patient Safety, Quality, Population Health (cover data management and analytics)

Reading Assignments:
Chapters 9 & 23: Health Informatics. (2022). (W. Hersh & K. Hollis, Eds. 8th ed.).

Online in Canvas
McBride, S., & Hoelscher, S. (2022). Chapter 9: Workflow Redesign in a Quality Improvement Modality. Nursing Informatics for the Advanced Practice Nurse: Patient Safety, Quality, Outcomes, and Interprofessionalism, 3rd Edition, p. 209-230. (Available in Canvas)

Content to be covered in Module VI and the 6th weekend immersion:

- Optimizing Technology for Improvement Strategies
- Workflow Redesign Techniques
- Unintended Consequences of Technology: The Good, the Bad and the Ugly
- Electronic Clinical Quality Measures (eCQMs)
- Quadruple Aim: Addressing Burden of Documentation and Clinician Burnout

Workflow Redesign Exercise

Workflow redesign is critical to improving the optimization of electronic health records and other point of care health information technology. Review resources on workflow redesign, fundamentals of patient safety and quality to identify an area in your clinical setting where workflow is either compromised or might be improved with respect to some aspect of health information technology or lack of technology that might improve processes.

During the weekend immersion you will work in teams of 2-3 to identify a process to be addressed in this assignment. Methods such as Failure, Mode, Effect Analysis (FMEA) and/or Fishbone diagrams of the process are tools we encourage the teams to consider utilizing to assess the problem fully and determine where the workflow redesign focus should be within the process.

Faculty will walk you through the mapping process and how to utilize tools such as a fishbone diagram and FMEA to identify opportunities for improvement.

Recommended Reading in preparation for the weekend activities:

Agency for Healthcare Research and Quality. (2023). Workflow assessment for health IT toolkit

Review the Video on Process Mapping

Process Mapping – Learn how to create a process map and swim lane diagram, facilitate a process mapping session for a practice, and help a practice design process improvements.

The following are instructions for the workflow redesign ***in class*** project—review of reading and materials is important for this exercise:

1. Create a workflow diagram of the "as is" state and design a "to be" diagram to improve processes based on measurable metrics for success. Use Microsoft Visio, word or PowerPoint graphic to reflect the workflow process. Samples of workflow are within the resources that will help you think through how to appropriately document a process addressing the "who, what, where and how" of the process. Support your redesign with evidence in the literature that supports how your redesign will improve patient safety, quality or population health, and use appropriate APA for citations and references. Develop a scholarly paper and address the outline below within the paper using APA and a minimum of 5 peer-reviewed articles to support your evidenced-based redesign.
2. Introduction to the problem identified
3. Workflow process your team addressed
4. Assessment of the problem (FMEA and/or Fishbone diagram approach to analysis, see IHI.org resources)
5. Overview of the "to be" and "as is" workflow (as is should be based on evidence to support the redesign)
6. Roles and Responsibilities within an Interprofessional Team
7. Measures pre- and post-your team recommends for measuring the impact of your redesign
8. Conclusion: Summary of the potential impact to the organization and reflect on lessons learned with the workflow mapping exercise.

Your team will present your workflow project within the weekend immersion as a final deliverable for the project.

Module VII: Exploring New and Emerging Technologies

Reading Assignments:
Chapters 8 & 12: Health Informatics. (2022). (W. Hersh & K. Hollis, Eds. 8th ed.).

Final Project

Select an Emerging Technology to research, such as aspects of artificial intelligence, personalized genomics, precision medicine and nanotechnology. Many of these topics are very broad. You should choose one aspect of the topic for your project and address a problem statement or opportunity you identify with your investigation of the topic. Examples might include:

- Connected health devices: These are devices that can monitor, collect, and transmit health data to providers and patients remotely. How might new innovations positively impact your organization?
- Digital therapeutics: These are software-based interventions that can treat, prevent, or manage chronic conditions by changing patient behavior or providing clinical support. How will these data come into the EHR seamlessly? How do these systems work to create this interoperability?
- Artificial intelligence: This is the use of algorithms and machine learning to analyze large amounts of data and provide insights, predictions, or recommendations for healthcare. Any number of questions could be addressed as you explore this topic with a focus, such as predictive analytics driven by AI added to Clinical Decision Support in the EHR, AI addressing burden of documentation in the EHR, privacy and security related to AI, ChatGPT-type tools incorporated into the EHRs (this is happening).

- Telehealth: This delivery of healthcare services and information through digital platforms, such as video calls, mobile apps, or online portals. How did telehealth and other mechanisms use help during the COVID-19 pandemic? What lessons did we learn and what were the implications for payment reform?
- Virtual reality: This is the use of immersive technology to create simulated environments that can enhance patient education, training, or therapy. How will healthcare consider virtual reality for patient education, patient care and training of healthcare professionals?

Students will select the topic related to new and emerging technology to research and present an information technology or informatics topic of interest the final weekend immersion. The intent of the project is to:

1. Investigate and develop a healthcare information technology new and emerging topic of interest
2. Create scholarly dialogue within the cohort on new and emerging technology
3. Examine the topic from a policy, patient safety, quality, and population health perspective
4. Present implications for executive leadership and the topic of interest

The deliverable is a presentation and PowerPoint. You have the option of a draft manuscript for publication that instructors will provide guidance on taking this project on to publication should you elect to do so. This is not a requirement, but we offer this as an option to you all.

Group projects on large topics can be considered, particularly if you take different aspects of the new and emerging technology to cover. For example, a clinician takes the clinical aspect of care component, and a non-clinician selects policy, privacy or security as the focus of the topic.

III. CALENDAR

1	**Module I Introduction to Biomedical and Health Informatics** **CONTENT** Orientation to the Course: Introduction to the course Course deliverables Final project discussion and potential selection of topics Informatics: *What's it all about?*	**Chapters 1-3** **Assigned reading under Module I**	**Weekend Immersion #1 (ON CAMPUS):** January 26th 5pm-9pm and January 27th 8am-10am • Complete Policy Dialogue Assignment and participate in Weekend Intensive #1 • Participate in Panel Discussion Dialogue with Subject Matter Experts

	Policy Dialogue with Guest Speakers		
2	**Module II Electronic Health Records, Data Standards and Interoperability** **CONTENT** EHRs Data Standards Interoperability and Health Information Exchanges (HIE)	**Chapters 4-5, 10 Assigned reading under Module II**	**Weekend Immersion #2 (ON CAMPUS):** February 10th 10am-4pm • Complete Data Standards and Interoperability Case Study Completion • Select topic for final project on new and emerging technologies • Prepare for EDW Module III exercise **Joni and Susan to flush out the agenda**
3	**Module III Data Management and Analytics: Enterprise Data Strategies for Success** **CONTENT** How ready is your organization for Enterprise data? Present and discuss findings on your organization's self-assessments done Advanced Analytics: *What does it really take!* EDW design, dashboards, data structures, outsourcing versus in house support, data governance	**Assigned reading under Module III: McBride/Tietze text Chapter 17 & 23**	**Weekend Immersion #3 (ON CAMPUS):** February 23rd 5pm-9pm and February 24th 8am-10am • EDW Strategies and Advanced Analytics Panel of SMEs • Guest Speaker on Data Governance and Enterprise Data Strategies • Completion of Enterprise Data Warehouse Strategies and Electronic Clinical Quality Assignment & Presentation of Findings • Visit to a Data Science Lab
4	**Module IV Informatics and Data Analytics for Strategic Planning & Public Health** **CONTENT** Hands-on Analytics Strategic Planning	**Chapters 6 & 19 Assigned reading under Module IV**	**Weekend Immersion #4 (VIRTUAL EVENT):** March 2nd 10am-4pm • Completion of Informatics and Data Analytics for Strategic Planning Lab Intensive #4

	With data available in Texas Public Health Informatics Visit to a Data Science lab for those attending.		• IBM SPSS and Data Modeler introduction & discussion on use within large healthcare systems • Guest Speakers: Public Health Informatics and Data Science during a Pandemic and Beyond
5	**Module V: Health Information Technology Governance: Ethical, legal, and policy implications** **CONTENT** Criticality of Data Governance Data Governance Models Privacy and Security and risk assessment: current state and expectations for HIPAA updates Case Study discussions Protecting your Organization as an Executive Leader	**Chapters 13 & 22**	**Weekend Immersion #5 (ON CAMPUS):** March 8 5-9PM and March 9 8-10AM • Guest speakers on privacy, security, risk management • Case Study Risk Assessment Exercise • Presentation and Discussion Bioethical Health IT Challenges **Joni and Susan to flush out the agenda**
6	**Module VI: Patient Safety, Quality and Population Health** **CONTENT** Optimizing Technology for Improvement Strategies Workflow Redesign Techniques Unintended Consequences of Technology: The Good, the Bad and the Ugly Electronic Clinical Quality Measures (eCQMs): Implications for the Future	**Chapters 9 & 23** **Assigned reading under Module** **McBride & Tietze** **Chapter 9 Workflow Redesign**	**Weekend Immersion #6 (VIRTUAL EVENT):** March 30th 10am-4pm • Guest Speakers: Electronic Clinical Quality Measures: Implications for the Future • Faculty facilitated discussion on Unintended Consequences • Workflow mapping exercises in class on addressing unintended Consequences of Health IT
7	**Module VII: New and Emerging Technologies**	**Chapters 8 & 12** *(NOTE: telehealth is not new but*	**Weekend Immersion #7 (ON CAMPUS):** April 12th 5pm-9pm and April 13th 8am-10am

	CONTENT Wrap-up and Final Presentations on New and Emerging Technology Topics of Interest Course Evaluation	*there are innovative new advances)*	• Presentations and Discussions on New and Emerging Technologies • Course wrap-up, evaluation, and recommendations for the future

IV. COHORT SCHEDULE

- EMBA 5362 Healthcare Information Technology and Informatics
- MANA 5350 Strategic Human Resources Management

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
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W4 and W6, verify on-campus commitment within Canvas

V. UNIVERSITY POLICIES

HTTPS://WWW.UTTYLER.EDU/ACADEMIC-AFFAIRS/FILES/SYLLABUS_INFORMATION_2021.PDF