MIT326 Electronic Medical Record (EHR) Design

Syllabus- Spring 2023

Faculty: Evadne Harrison-Madu, PhD, MSN, RN

Assistant Professor

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Contact Information:

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5- 6:00 p.m.

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COURSE: MIT 326 ELECTRONIC MEDICAL RECORDS (EhR) Design

To Students,
Greetings from Dr. Evadne A. Harrison-Madu

This course covers the theories and principles in the application of project management for Electronic Medical Records Design and Implementation. There is no required textbook, all materials will be provided on slides and handouts. I will post slides the weeks that we're meeting and will discuss in further detail during lecture, you are strongly encouraged to attend class as participation impacts your grade.

The course is NOT a hands-on approach to developing medical records, there are numerous vendors i.e., Epic, Cerner, Meditech etc. and each contains anywhere from 20-50 different modules i.e., Nursing, Pharmacy, Lab, Radiology. You will learn each module including registration, billing, and interfacing. MIT326 is the framework for all Meaningful Use and Health Information Exchange (HIE), you will find that this course will provide you with all that you require out in the field to be successful in roles such as:

Academic Integrity

There will be 2 presentations: one at midterm and a final presentation

It is my expectation for each to student to research thoroughly and apply their findings in their work, I do NOT however penalize for copying from web sites to complete your presentations, must be cited. Most assignments require presentations, it is in your presentation that I expect you to have acquired some fundamental understanding of the material through your research and how you are able to speak to your findings in correlation to the associated lecture.

All presentations are to be done in PowerPoint and a copy emailed to me the day of the presentation.

"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing, or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu"

Grade Structure

Class Activity	Points Per Activity
2 Homework Assignments	5 Points (x 2) =10 points
Midterm Project	35 Points
Final Project	40 Points
Class Participation/Discussion	15 Points
Totals	100 Points

Homework Assignments

#1 5 - questions asking for short answers relevant to Medical Records/ Electronic Health Records

 # 2 – 2 questions requesting short answers.

Project: Midterm and Final Project will be related to you building your own Electronic Health Records

By midterm you should be able to access information to build your own electronic health care

System and present the information in a PowerPoint.

Final Projection should be a continuation of the mid-term information and the finalization of

the project.

Attendance and Make Ups

Attendance is mandatory. If unable to attend a class, please email me before class indicating that you will not attend.

Make-ups will be given the following session with a ten-point deduction. Deduction will only be waived for extenuating circumstances. Per NJIT policy the following applies when invoking extenuating circumstances.

When a student invokes extenuating circumstances for any reason (late withdrawal from a course, request for a make-up exam, request for an Incomplete grade) the student should be sent to the Dean of Students Office. The Dean of Students will be making the determination of whether extenuating circumstances exist or not and will be notifying the instructor accordingly.

Week 1: COURSE DESCRIPTION

EXPLANATION, & RESPONSIBILITES

Student Learning Outcomes

- Define electronic medical records
- Explain the purpose of medical records
- Development of your own medical records

Week 2 : MEDICAL RECORDS/EHR

Why is the meaningful use and relevance for Medical Records/EHR

- Recap summary of medical record
- Importance of medical records documentation
- Impact of Medical records on delivering patient care

Student Learning Outcomes:

1. Discuss the factors related to the history of Medical Records/Electronic Health records (EHR).
2. Describe and discuss the impact of medical records on patient care.

Week 3: Components of an Electronic Medical Records

- Clinical documentation and order entry for nurses and physicians
- Order entry (Different types of orders)
- Signed Orders
- Deficiency tracking
- H&Ps (History and Physical)
- Interdisciplinary Notes

Student Learning Outcomes:
1. Discuss the factors related to the history of Medical Records/Electronic Health records (EHR).
2. Describe and discuss the impact of medical records on patient care.

Week 4: MEDICAL TERMINOLOGY and the (EHR) SYSTEMS
EMRs (electronic medical records) are more effective when extracting medical data for the examination of possible trends and long-term changes in a patient.

Technologist should be aware of the Medical Terminology

- Time
- Comparison with paper-based records
- Emergency medical services
- Technical features
- Philosophical views
- Implementation
- Quality

- Costs

Student Learning Outcomes:

1. Discuss the factors related to medical records documentation and real time.

2. Identify and discuss the impact of medical records Emergency medical services

3. Explain and discuss some of philosophical views

4. Discuss implementation as it relates to medical electronic records

Week 5: HIPPA LAWS and REGULATIONS

Transparency, portability, and accessibility acquired by the adoption of the electronic medical records

- o HIPPA regulation
- o Cyber security

Student Learning Outcomes:

1. Discuss the factors related to HIPPA laws and regulations

2. Identify and discuss the impact of HIPPA procedures and regulation on transfer of patient information

3. Explain and discuss Cyber security interventions

Week 6: RADIOLOGY INFORMATION SYSTEMS

- What is a Radiology Information System?
- What are CTs, MRIs, X-rays, US, Mammograms?
- Radiology Workflow
- **What is DICOM?**

Student Learning Outcomes:

1. Discuss the factors related to Radiology information Systems

2. Identify and discuss the impact of CTs, MRIs, X-rays, US, Mammograms information

3. Explain and discuss Radiology Workflow

4. Describe and discuss DICOM

Week 7: PHARMACY INFORMATION (PIS)

- What is a Pharmacy Information System?
- Drug / Drug Interactions
- Drug dispensing systems
- What is Medication Reconciliation?

Student Learning Outcomes:
1. Discuss the factors related to Radiology information Systems
2. Identify and discuss the impact of CTs, MRIs, X-rays, US, Mammograms information

3. Explain and discuss Radiology Workflow
4. Describe and discuss DICOM

Week 8: MIDTERM PRESENTATION

- Session # 1: Individual Presentation of the Project Status

Week 9:   MIDTERM PRESENTATION

- Session # 2: Individual Presentation of the Project Status

Week 10: LABORATORY & NURSING INFORMATION

- What is a Laboratory Information System?
- Microbiology
- Chemistries, Hematology, Panels, Pathology
- Importance of trend analysis
- How does nursing profession document medical records?
- Reporting and sharing patient information
- Importance of trend analysis

Student Learning Outcomes:
1. Discuss the factors related to Radiology information Systems
2. Identify and discuss the impact of CTs, MRIs, X-rays, US, Mammograms information
3. Explain and discuss Radiology Workflow
4. Describe and discuss DICOM
5. Discuss the factors related to nursing profession repost and sharing patient information
6. Describe some procedures in transferring patient information
7. Explain and discuss the Nursing reporting Workflow

Week 11: DATA MINNING in HEALTHCARE
Data Mining in Healthcare

- Intro to Analytics
- Intro to Data Mining
- Population Management

Student Learning Outcomes:
1. Discuss the factors related to Analytics
2. Explain the systems being used in Data Mining
3. Describe what is population management

Week 12: FINAL PROJECT READINESS
Time to work on the final projection
    Questions and Answer Sessions
        a. Bring questions to the class for classmates' participation

Week 13: FINAL PROJECT PRESENTATION

Session # 1: Individual Presentation of the Project Status

Week 14: FINAL PROJECT PRESENTATION
Session # 2: Individual Presentation of the Project Status

Week 15: FINAL PROJECT PRESENTATION

Session # 3: Individual Presentation of the Project Status

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REFERENCES

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Examples of Electronic Health Records software (it is supposed to be free)

 Dr chrono educational **video for students**

EHR overview Dr. Chrono
https://www.youtube.com/watch?v=vZH8naIom1Y
Navigating a patient chart
https://www.drchrono.com/resources/ehr-training-video/clinical-navigating-a-patient-chart/
Form Building
https://www.drchrono.com/resources/ehr-training-video/form-builder-overview-of-form-building/
Charting
https://www.youtube.com/watch?v=HX3lfgQI3NE
Billing
https://support.drchrono.com/hc/en-us/articles/360060741472-VIDEO-Billing-for-COVID-vaccines-with-DrChrono
patient education ehrs
https://www.drchrono.com/resources/ehr-training-video/clinical-patient-education/
Charting in Ehr
https://www.drchrono.com/resources/ehr-training-video/charting-charting/
Setting up appointments in EHRs
https://www.drchrono.com/resources/ehr-training-video/setup-appointment-scheduling-appointment-templates/