The American University in Cairo
School of Business

School of Business Executive Education

Course Syllabus

I. OVERVIEW

Program: Hospital Management and Operational Excellence Diploma

Course Title: Information Driven Healthcare

Course Code: BHOE 523 Run 11

Timing & Location: Mondays & Thursday, 6pm: 9pm - Live Online

Course Pre-requisite (if any): N/A

Instructor's Name: Amr Hassab

Instructor's Email: ahassab@aucegypt.edu

Program Officer: Mai Mohamady

Email: healthcareprograms@aucegypt.edu

II. COURSE INFORMATION

A. Course Description:

Information has been and will always be the base to make decisions. For healthcare, the quality of care, informed decisions, and planning are all centered around the right information to be available at the right time. Health informatics is a multidisciplinary field at the intersection of health care, information science, and computer science. Health informatics is growing at a rapid pace and will continue to grow well into the future. The field is devoted to the optimal use of data, information, and knowledge to advance individual health, health care, public health and health-related organizations.

The course will introduce the definitions and concepts of knowledge hierarchy: data, information, knowledge and discuss the health information technology standards. It will go through the pathway to select and adopt a hospital information system. Also, it will navigate into the new trends and technology such as Big data and AI applications in the healthcare sector and its impact on the information delivery and quality of care.

B. Learning Outcomes

By the end of this Course, participants will be able to:

- Realize the role and importance of information in healthcare.
- Understand the building blocks of patient medical records within healthcare systems.
- Recognize the most common coding standards used in healthcare.
- Identify the step by step approach to adopt and implement HIS.
- Acquire the basic knowledge of new technologies application in the healthcare sector.

C. Course Schedule:

Date & Session #	Titles/Subtitles	Material & Resources/Readings	Assignments
Session.1 **18/7/22**	**Review Error burden in healthcare** **Recognize and differentiate Data concepts** **Understand International coding systems to support patient safety** **Identify EMR, HER and PHR and its impact**	• Pre-session (1): Watch the following video https://www.youtube.com/watch?v=hSG78X_8mv0&t=7s • EMR & EHR https://www.youtube.com/watch?v=bboJpjwGifs	**Group Assignments: (40%)** Participants will be divided into 4 groups; each will present one topic in session 4 - AI - Big Data - Digital Transformation - Telemedicine Handout is on the Moodle
Session.2 **21/7/22**	**Define HIS concept and components** **Importance of HIS in healthcare facilities** **Role of Automation in Decision making process** **Identify the organization readiness for HIS**	• **HIS** **https://www.youtube.com/watch?v=4cPOoXRxNPY**	**Individual Assignment (30%)** Details and due date is on the Moodle
Session. 3 **25/7/22**	**HIS Selection Process** **HIS Implementation Process** **Expected Challenges of HIS implementation**	• Critical Success Factors for Implementation https://www.youtube.com/watch?v=ww_xWtt39mQ • Introduction to patient flow in hospitals https://www.youtube.com/watch?v=aHDkFSPvGao	
Session. 4 **1/8/22**	**New Trends:** • **Digital Transformation** • **Telemedicine** • **Big Data** • **Artificial Intelligence**	• What is Digital Transformation https://www.youtube.com/watch?v=8Rb6fSaHmjU • How the internet of things can change healthcare https://www.youtube.com/watch?v=Jfmg1cBsKhU	**In-Class Presentation of Group Assignment**

		• How AI can change the future of healthcare https://www.youtube.com/watch?v=Q0kGcTI3NcY&t=5s • Telehealth Vs Telemedicine https://www.youtube.com/watch?v=CyGN6E42GpM	

Recommended References:

- Bilge, A. (2020). From data-driven to information-driven? https://www.bi-kring.nl/195-intelligente-organisatie-1/943-from-data-driven-to-information-driven
- Blumenthal, D., & Seervai, S. (2021). David Blumenthal. https://www.commonwealthfund.org/person/david-blumenthal#:~:text=David%20Blumenthal%2C%20M.D.%2C%20M.P.P.%2C,is%20formerly%20the%20Samuel%20O.
- Institute of Medicine; Committee on Quality of Health Care in America; Linda T. Kohn. (1999, November 29). To Err Is Human: Building a Safer Health System https://www.nap.edu/catalog/9728/to-err-is-human-building-a-safer-health-system
- Imhoff, Michael & Webb, Andrew & Goldschmidt, Andreas. (2001). Health Informatics. Intensive care medicine. 27. 179-86. 10.1007/PL00020869
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- WHO, W. (2019). Classification of Diseases (ICD). https://www.who.int/standards/classifications/classification-of-diseases
- AMA, A. (2021, January 14). AMA releases 2021 the latest CPT code set. https://www.ama-assn.org/
- Lionc, (2017, March 03). What LOINC is. https://loinc.org/get-started/what-loinc-is/
- DICOME Definition (2019, April 20). Radiology and Physical Medicine. http://www.radiologyandphysicalmedicine.es/
- SNOMED International (2020, March 1). SNOMED CT Archives. https://www.nlm.nih.gov/healthit/snomedct/archive.html#:~:text=Version%3A%20September%202016&text=The%20release%20also%20includes%20the,marks%20the%20last%20RF1%20release.
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- EHR Infographic, (2019, August 29). Electronic Health Records Infographic. https://www.healthit.gov/infographic/electronic-health-records-infographic
- SAS, S. (2020). What is Natural Language Processing? https://www.sas.com/en_us/insights/analytics/what-is-natural-language-processing-nlp.html
- IBM Cloud, E. (2020, July 2). What is Natural Language Processing?

https://www.ibm.com/cloud/learn/natural-language-processing

- Mehdipour, Yousef & Zerehkafi, Hamideh. (2013). Hospital Information System (HIS): At a Glance. Asian Journal of Computer Science and Information Technology. 01. 2321-5658.
- RFI:

https://trainingindustry.com/wiki/outsourcing/request-information-rfi/

- RFP:

https://trainingindustry.com/wiki/outsourcing/request-proposal-rfp/

- RFQ:

https://trainingindustry.com/wiki/outsourcing/request-quotation-rfq/

- Making your EMR Implementation a True Success:

https://www.youtube.com/watch?v=5SmrTM0I57k

- Tips for successful implementation:

https://www.healthcareitnews.com/video/involving-key-stakeholders-ehr-selection-process
https://www.healthdatamanagement.com/news/ehr-vendor-selection-process-is-fraught-with-risks-in-alienating-docs
https://ehrintelligence.com/news/ama-offers-guidance-for-ehr-vendor-selection-in-new-playbook

- Digital Transformation:

https://www.mckinsey.com/business-functions/organization/our-insights/unlocking-success-in-digital-transformations
https://consoltech.com/blog/digital-transformation-healthcare/

- How technology can change healthcare:

https://www.youtube.com/watch?v=cM4aep7VXb8
https://www.netsolutions.com/insights/digital-transformation-in-healthcare/

- The change of cloud & AI can do in Healthcare:

https://www.healthcareitnews.com/news/apac/cloud-and-ai-leading-explosion-change-health-it
https://www.youtube.com/watch?v=5KXD-yHHhKk
https://www.outsystems.com/blog/posts/cloud-computing-in-healthcare/
https://www.foreseemed.com/artificial-intelligence-in-healthcare
https://youtu.be/VePHPymCy2U
https://vimeo.com/269854293
https://healthcareweekly.com/artificial-intelligence-in-healthcare/

- Big Data for Information Driven Healthcare:

https://www.softwareadvice.com/resources/what-is-big-data-in-healthcare-and-whos-already-doing-it/
https://www.testingxperts.com/blog/Big-Data-Analytics-Healthcare
https://www.youtube.com/watch?v=SN4M71c-N3g
https://www.youtube.com/watch?v=_mXrZEIpNMw
https://www.youtube.com/watch?v=y8yMlMBCQiQ

- Is Telemedicine the future of healthcare?

https://www.youtube.com/watch?v=PLp6U5mUMQQ

- EHR Implementation Checklist

https://www.altexsoft.com/blog/electronic-health-record-implementation-checklist/

- Case Study: Cairo University Hospitals

https://fount.aucegypt.edu/cgi/viewcontent.cgi?article=2095&context=etds

- Readiness Assessment Tool

https://digital.ahrq.gov/sites/default/files/docs/medicaid/CommunityClinicEHRReadinessAssessmentTool.pdf

III. COURSE REQUIREMENTS

A. Assessment/ Grading Criteria

Group Assignment (Presentation)	**40%**
Individual Assignment	**30%**
Reflective log / Forum Discussion	**20%**
Participation	**10%**

Late Assignments Submission Policy:

Participants are expected to hand in their work on time. Late submissions will have a negative effect on your grades. If you encounter any problems to meet deadlines or submission dates you must communicate this with the instructor well in advance (by email), at the very latest, one day in advance.

IV. UNIVERSITY POLICIES

A. Grading System

A minimum grade of 73% in each course is required for a participant to pass the course and qualify for graduation.

For the program **core courses**, the following grading system applies:

A	93 – 100	Excellent
A-	90 – 92	Excellent
B+	87 – 89	Very good
B	83 – 86	Good
B-	80 – 82	Good
C+	77 – 79	Pass
C	73 – 76	Pass
F	Below 73	Fail

The online **business acumen courses and field visits** follow a pass-or-fail grading system.

B. Attendance Policy

A minimum attendance of 75% is required in each course to qualify for graduation. In case the participant did not fulfill the 75% attendance, he will receive an F as a final course grade.

Attendance is mandatory for the entire time period of the class. Attendance is recorded by the Instructor on Moodle at the end of part I of the session. Arrival after the attendance is taken, the participant will be considered absent.

Participants who miss a class are responsible for making up any work they missed.

C. Academic Integrity

Participant Responsibilities

In academic matters, mutual responsibility between participants, faculty, administrators and staff, requires cooperation and trust in maintaining the details and spirit of the AUC Code of Academic Ethics. This ensures that a high level of integrity and honesty will be maintained within the academic programs.

Participants will be responsible for:

1. Knowing and complying with the AUC Code of Academic Ethic
2. Signing the AUC Code of Academic Ethics Agreement upon admission to AUC.
3. Upholding the highest standards of academic integrity in all of the participant's own work at AUC.
4. Upholding the highest standards of academic integrity by refusing to tolerate violations of the AUC Code of Academic Ethics as specified in the Definition of Standards in this document.
5. Reporting any suspected violation of the code to an appropriate faculty, administration or participant judicial board member.
6. Respecting the rights of others, which includes the obligation to refrain from behavior that violates or adversely affects the rights of other members of the AUC community.

Follow this link to obtain complete information on AUC's policy on violation of academic integrity from: https://www.aucegypt.edu/academics/academic-integrity/academic-integrity-students

Follow this link to read the Best Practices for Participants:
https://documents.aucegypt.edu/docs/academics_integrity_Students/BestpracticesStudents1.pdf