



Ministry of Higher Education and
Scientific Research - Iraq

University of Warith Al-Anbiyaa
Engineering College
Biomedical Engineering Department



MODULE DESCRIPTION FORM

Module Information			
Module Title	Medical Informatics		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	BME-213		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	Two	Semester of Delivery	3
Administering Department	BME	College	ENG
Module Leader	Alaa Akram Jawad		e-mail alaa.ak@uowa.edu.iq
Module Leader's Acad. Title	Assistant Lecture	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	1/6/2025	Version Number	1.0

Relation with other Modules			
Prerequisite module	Computer Science 1	Semester	2
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	The goal of this one-semester course is to provide the students with a broad overview on "Health Informatics" with focus on electronic health services provided by different kinds of software application. This improves the ability to managing electronic health systems, such as the HER, PACS, HIS, ...etc.
Module Learning Outcomes	<ol style="list-style-type: none"> 1. An ability to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics. 2. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw a conclusion. 3. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments which must consider the impact of engineering solutions in global, economic, environment, and social context.
Indicative Contents	<p>Indicative content includes the following.</p> <p>Part A - Theory</p> <p>This semester constitutes the lecture notes to provide undergraduate students of biomedical engineering, the background knowledge of the structure of different health care systems.</p> <p>Part B - Laboratory</p> <p>In this part, we will investigate a sample system of each of the given systems in the theoretical part. We recommend to select an open source health care systems to be demonstrated in the lab.</p>

Learning and Teaching Strategies

Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.
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Student Workload (SWL)

Structured SWL (h/sem)	63	Structured SWL (h/w)	4
Unstructured SWL (h/sem)	12	Unstructured SWL (h/w)	1
Total SWL (h/sem)	75		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10,14	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2,8, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	0	-	-	-
	Report	1	10% (10)	13	All
Summative assessment	Midterm Exam	2 hrs.	10% (10)	7	LO # 1-7
	Final Exam	2 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Introduction to the Health information technology (HIT) and health care systems,
Week 2	PHI (protected or personal health information)
Week 3	Electronic health records (EHRs) systems
Week 4	Personal health records (PHRs) systems
Week 5	Electronic prescribing (E-prescribing) system
Week 6	Clinical decision support system (CDSS)
Week 7	Clinical decision support system (CDSS)
Week 8	Hospital information systems (HIS)
Week 9	Hospital information systems (HIS)
Week 10	picture archiving systems (PACS)
Week 11	picture archiving systems (PACS)
Week 12	Computer Aided Diagnosis (CAD)
Week 13	Medical image processing
Week 14	Molecular bioinformatics
Week 15	Molecular bioinformatics
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Lab 1: Electronic health records (EHRs) system demonstration.
Week 2	Lab 1: Electronic health records (EHRs) system demonstration.
Week 3	Lab 2: Personal health records (PHRs) system demonstration.
Week 4	Lah 2: Personal health records (PHRs) system demonstration.
Week 5	Lab3: Electronic prescribing (E-prescribing) system demonstration.
Week 6	Lab3: Electronic prescribing (E-prescribing) system demonstration.
Week 7	Lab 4: Hospital information systems (HIS) system demonstration.
Week 8	Lab 4: Hospital information systems (HIS) system demonstration.
Week 9	Lab 5: picture archiving systems (PACS) system demonstration.
Week 10	Lab 5: picture archiving systems (PACS) system demonstration.
Week 11	Lah 6: Computer Aided Diagnosis (CAD) system demonstration.
Week 12	Lab 6: Computer Aided Diagnosis (CAD) system demonstration.
Week 13	Lab 7: Medical image processing system demonstration.
Week 14	Lab 7: Medical image processing system demonstration.

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Biomedical Information Technology, by David Dagan Feng	Yes
Websites	Health IT and EHR (https://www.techtarget.com/)	

Grading Scheme			
Group	Grade	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Sufficient	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	(45-49)	More work required but credit awarded
	F – Fail	(0-44)	Considerable amount of work required
<p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>			