Introduction to Medical Informatics FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Introduction to Medical Informatics**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOMU0302015**				
ECTS Credits	6				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		1
Administering Department		الأنظمة الطبية الذكية	**College**	العلوم	
Module Leader	م.م. قصي منير دياب		**e-mail**	qusai.muneer.deyab@uomus.edu.iq	
Module Leader's Acad. Title		Assistant Lecturer	**Module Leader's Qualification**		M.Sc.
Module Tutor	م.م. قصي منير دياب		**e-mail**	qusai.muneer.deyab@uomus.edu.iq	
Peer Reviewer Name		ا.د مهدي عبادي مانع	**e-mail**	mahdi.ebadi@uomus.edu.iq	
Scientific Committee Approval Date		1/10/2025	**Version Number**		2.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Health informatics is a multi-disciplinary field at the intersection of information science, computer science, and health care. Health informatics is growing at a rapid pace and will continue to grow well into the future. A brief introduction to health informatics covers the key concepts, background disciplines, historical overview, and challenges ahead. Students will be introduced to the definitions and concepts of knowledge hierarchy: data, information, knowledge and wisdom, and the building blocks of Health Informatics: algorithms, medical decision-making, and clinical process modeling. Knowledge management systems and health IT standards will be also covered. • This course will provide an overview of information technology including system analysis and design, data and network management, and information systems architecture and how each directly impacts clinical healthcare personnel. The students will also be introduced to the terminology, practices, and processes found in clinical and business operations. Communication between direct patient care individuals and technology personnel will be explored and appropriate methods fostered. This course has two areas of focus.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Introduce students to problems and challenges that health informatics addresses 2. Introduce students to the research and practice of health informatics 3. Provide all students with basic skills and knowledge in health informatics to apply in their future health-related careers 4. Lead students in discussion around ethical and diversity issues in health informatics 5. Provide additional direction to those interested in further (i.e., graduate) study in the field
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Methods of digital medical informatics. Registration, formalization and transmission of medical data. Information compression algorithms, standard forms of information exchange. Digital medical tools. Services. Applications.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم

Strategies	The goal is to have respectful discussions that do not violate the community space created for these conversations. Here are some productive ways to engage in this course: • **Participate:** This is a community. Read what others have written and listen to recordings others have posted and share your thoughts. • **Stay curious:** Learn from experts and each other by listening and asking questions, not making assumptions. • **Keep your passion positive:** When replying to a discussion forum post, respond with thoughts on what was said, not about the person who posted. Avoid using all caps, too many exclamation points, or aggressive language. • **Acknowledge discomfort:** The topics discussed in this course might be challenging or hard to talk about. Stick with it and remember the benefits of having these tough conversations that surface from multiple perspectives.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	3, 8	LO # 2, 3, 4 and 5
	Assignments	2	10% (10)	2, 12	LO # 2, 3, 4 and 5
	Projects / Lab.	4	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 2, 3, and 4
Summative assessment	**Midterm Exam**	3 hr	10% (10)	7	LO # 2, 3, and 4
	Final Exam	3 hr	50% (50)	16	All

Total assessment	100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	• Overview of Health Informatics
Week 2	• Health Data, Information, and Knowledge
Week 3	• Electronic Health Records
Week 4	• Health Information Exchange
Week 5	• Midterm Exam 1
Week 6	• Healthcare data Analytics
Week 7	• Fdqlfdo#Ghflvlrq#Vxssruw#Vwhp v#FGVV
Week 8	• Khdowk#Lqirup dwlrq#Sulydf|#Olqg#Vhfxulw|
Week 9	• Mobile health (mHealth)
Week 10	• Introduction to data science
Week 11	• Bioinformatics
Week 12	• Translational Bioinformatics
Week 13	• Natural Language Processing
Week 14	• Safety, Quality, and Value
Week 15	Wrap Up
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to Python basics for data science
Week 2	Completion Introduction to Python basics for data science
Week 3	Software installation and writing first program in python

Week 4	Completion Software installation and writing first program in python
Week 5	Learning Variables, Expressions, and Statements
Week 6	Completion Learning Variables, Expressions, and Statements
Week 7	Review
Week 8	Midterm Exam
Week 9	Learning Conditional Execution
Week 10	Completion Learning Conditional Execution
Week 11	Learning Conditional And LOOP Execution
Week 12	Completion Learning Conditional And LOOP Execution
Week 13	Review
Week 14	Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	HoytRE,YoshihashiAK.HealthInformatics:PracticalGuideforHealthcareandInformationTechnology Professionals(6thEd.):InformaticsEducation;2014.(ISBN:9781304791108)	No
Recommended Texts	A list of readings will also be provided on the course site. Students will have at least 3 readings per topic.	No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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.

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