MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Introduction To Artificial Intelligence**			**Module Delivery**	
Module Type	**BASIC**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOMU0209013**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	**1**		**Semester of Delivery**	1	
Administering Department	**AIET**		**College**	AL-Mustaqbal University	
Module Leader	Dr. Murtada Dohan		**e-mail**	murtada.dohan@uomus.edu.iq	
Module Leader's Acad. Title	Dr. Murtada Dohan		**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name	M.S.C Zahraa Hussein Jasim		**e-mail**		
Scientific Committee Approval Date	24/12/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives أهداف المادة الدراسية	**A- Cognitive Objectives** 1. Understanding and learning the principles and concepts of intelligent systems. 2. Enabling students to acquire knowledge and practical computer skills and their applications. 3. Ensuring students comprehend all components and theoretical skills of artificial intelligence systems, as well as their operation. 4. Facilitating students' acquisition of knowledge and understanding of all components of intelligent systems and the benefits of each component. 5. Enabling students to understand the various types of tasks performed by intelligent systems and how they operate. **B – Skill Objectives Specific to the Program** 1. Explaining the skills in detail and applying them practically on the computer while emphasizing the importance of ethical and professional safety rules for students. 2. Equipping students with information and methods to solve practical problems related to all skills. 3. Presenting topics of all applications both practically and theoretically. 4. Adapting the work in skills to ensure active student participation in practical tasks.
Module Learning Outcomes	**Learning Outcomes for the Course** 1. Preparing students academically and practically to work in the field of Artificial Intelligence Engineering. 2. Building and equipping students psychologically to fulfill their role as reliable engineers in this domain. 3. Developing students capable of competing with other engineers globally for job opportunities and securing advanced study positions. 4. Enabling students to qualify for external exams conducted by local, regional, or international organizations for further studies or employment. 5. Encouraging students to innovate and think critically in specialization projects, keeping pace with advancements in the field. 6. Providing students with scientific, practical, and personal skills that enable them to solve practical problems and address them using scientific concepts.

Indicative Contents	• **Introduction to Artificial Intelligence**
	  • Definition and history of AI.
	  • Key characteristics of AI systems.
	  • Differences between AI, Machine Learning (ML), and Data Science.
	• **Foundations of AI**
	  • Logic and reasoning in AI.
	  • Mathematical foundations: linear algebra, probability, and statistics.
	  • Overview of algorithms and computational thinking.

	• **Types and Categories of AI**
	  • Narrow AI vs. General AI vs. Super AI.
	  • Reactive machines, limited memory systems, theory of mind, and self-aware AI.
	• **AI Techniques and Approaches**
	  • Symbolic AI (rule-based systems).
	  • Machine Learning: supervised, unsupervised, and reinforcement learning.
	  • Neural Networks and Deep Learning.
	• **Applications of AI**
	  • Natural Language Processing (NLP): chatbots, language translation.
	  • Computer Vision: image recognition, facial recognition.
	  • Robotics: autonomous systems and industrial automation.
	  • Expert Systems and Decision Support Systems.
	  • Healthcare, finance, transportation, and entertainment.

Learning and Teaching Strategies	
Strategies	**Evaluation Methods** 1. Conducting daily exams with practical and theoretical questions. 2. Allocating grades for participation in challenging competitive questions among students. 3. Assigning grades for homework and reports required from students. 4. Administering semester exams for the curriculum, in addition to a mid- year exam and a final exam.

Student Workload (SWL) الحمل الدرا س للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem)	64	**Structured SWL (h/w)**	4.26
Unstructured SWL (h/sem)	86	**Unstructured SWL (h/w)**	5.73
Total SWL (h/sem)	**150**		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	15% (10)	3,5 adn10	LO #1, #2 -#4, #5 #10, #11
	Assignments	3	15% (10)	4 ,6 and 12	LO #2, #3 -#4, #5and #6, #7
	Projects /Lab.	-	-	-	-
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوع النظري

	Material Covered
Week 1	Introduction to artificial intelligence
Week 2	Artificial intelligence types
Week 3	Artificial intelligence applications
Week 4	Introduction to machine learning
Week 5	Machine learning types
Week 6	Machine learning applications
Week 7	Principles of neural networks
Week 8	Advanced neural networks
Week 9	Principles of fuzzy logic
Week 10	Introduction to optimizations
Week 11	Optimizations types
Week 12	Optimizations applications
Week 13	Artificial intelligence ethics
Week 14	Artificial intelligence future
Week 15	Revision
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	The Internet.	Yes
Recommended Texts	MECH6028 - Mechanical Workshop Practice 2 - CIT Modules	No
Websites	https://www.coursera.org/browse/workshop-and-engineering/workshop -	

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.