Ministry of Higher Education and Scientific Research - Iraq
University of Technology
Department of Computer Science

MODULE DESCRIPTOR
وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	Principles of Artificial Intelligence	**Module Delivery**	
Module Type	Core	1. **Theory** 1. **Lecture** 2. **Lab** 3. **Tutorial** 4. **Practical** 5. **Seminar**	
Module Code	POAI115		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Hanaa Mohsin Ahmed	**e-mail**	Hanaa.m.ahmed@uotechnology.edu.iq
Module Leader's Acad. Title	Prof. Dr.	**Module Leader's Qualification**	AI
Module Tutor	None	**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

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	1-Introduction to Artificial Intelligence: Provide an overview of the field of artificial intelligence, its history, key concepts, and its role in various domains. 2-Problem Solving and Search: Explore different problem-solving techniques and search algorithms used in artificial intelligence. 3-Knowledge Representation and Reasoning: Study methods and languages used to represent and manipulate knowledge in artificial intelligence systems. 4- AI applications: Examining real-world applications of AI in various domains, such as healthcare, finance, autonomous vehicles, robotics, and recommendation systems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-Understand the fundamental concepts and principles of artificial intelligence and its various subfields. 2- Understand the AI problem-solving techniques. 3-Explore real-world applications of artificial intelligence in various domains and understand the challenges and opportunities associated with their implementation.
Indicative Contents المحتويات الإرشادية	Data-Information-Knowledge (DIK Hierarchy). Knowledge base building. Knowledge discovery. Knowledge acquisition. Knowledge engineering. Knowledge representation. Problem fundamentals and characteristics. Problem state space. Problem solving approach. Different problems in AI world. Shortest path problem. Travelling salesman problem.The 2 jug problem. Monkey and banana problem.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
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.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	AI definition, history, concept, and applications, AI goals and AI environment
Week 2	Alan Turing Test
Week 3	Data-Information-Knowledge (DIK Hierarchy)
Week 4	Knowledge base building
Week 5	Knowledge discovery, Knowledge acquisition
Week 6	Knowledge engineering. Knowledge representation
Week 7	**Midterm Exam**
Week 8	Problem fundamentals and characteristics
Week 9	Problem state space

Week 10	Problem solving approach
Week 11	Problem solving approach
Week 12	Different problems in AI world
Week 13	Shortest path problem. Travelling salesman problem
Week 14	2 jug problem, Monkey and banana problem
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1-Rich, E., & Knight, K. (1991). Artificial Intelligence. McGraw-Hill. 2-Luger, G. F., & Stubblefield, W. A. (2004). Artificial Intelligence: Structures and Strategies for Complex Problem Solving. Addison Wesley.	Yes
Recommended Texts	Russell, S. J., & Norvig, P. (2016). Artificial Intelligence: A Modern Approach.	No
Websites		

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB 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.