	Ministry of Higher Education and Scientific Research - Iraq Al-Nahrain University College of Science Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	Artificial Intelligence	**Module Delivery**	
Module Type	CORE		☒**Theory** ☐**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**
Module Code	COMP 340		
ECTS Credits	4		
SWL (hr/sem)	30		
Module Level	Undergraduate (3rd year)	**Semester of Delivery**	1
Administering Department	Computer Science	**College**	College of Sciences
Module Leader	Dr. Sawsan Kamal Thamer	**e-mail**	sawsan.kamal@nahrainuniv.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	
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	The aim of an undergraduate Artificial Intelligence course is to equip students with a comprehensive understanding of the fundamental principles of Artificial intelligence, intelligent agents and search. Students will learn about designing and programming intelligent agents, study different types of search algorithms. And learn how to represent the problem and solve it.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this course, students will: 1. The ability to use Java language, and applying the theory fundamentals of agents and use different search algorithms. 2. Improve the student's analysis and conclusion capabilities. 3. Implement a software agent (service agent, vaccum cleaner)
Indicative Contents المحتويات الإرشادية	1. Introduction to artificial intelligence. 2. The concept of intelligent agents 3. Kinds of intelligent agents 4. Problem definition 5. Search algorithms
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Lectures to explain fundamental concepts. 2. Practical coding sessions to build software agents. 3. Weekly homework assignments to reinforce programming skills. 4. Midterm exams and a final project to assess practical and theoretical knowledge.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.4
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	1	10% (10)	5	All
	Assignments	1	10% (10)	10	All
	Projects / Lab.	1	10% (10)	14	All
	Report	1	10% (10)	14	All
Summative assessment	Midterm Exam	2 hr	10% (10)	7	All
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
الأسبوع الاول	Introduction of Artificial intelligence
الأسبوع الثاني	AI as Study and Design of Intelligent Agents
الأسبوع الثالث	AGENTS AND ENVIRONMENTS
الأسبوع الرابع	THE CONCEPT OF RATIONALITY
الأسبوع الخامس	THE NATURE OF ENVIRONMENTS
الأسبوع السادس	Mid1 Exam
الأسبوع السابع	THE STRUCTURE OF AGENTS -Simple reflex agents -Model based Reflex Agents
الأسبوع الثامن	-Goal-based Agents - Utility-based Agents
الأسبوع التاسع	- Learning Agents
الأسبوع العاشر	PROBLEM SOLVING AGENTS
الأسبوع الحادي عشر	EXAMPLE PROBLEMS
الأسبوع الثاني عشر	SEARCHING FOR SOLUTIONS
الأسبوع الثالث عشر	UNINFORMED SEARCH STRATEGIES(Breadth first search)
الأسبوع الرابع عشر	Mid2 Exam
الأسبوع الخامس عشر	-Depth-first search - A* algorithm

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: General introduction for agent
Week 2	Lab 2: Create Customer, server, agent Classes
Week 3	Lab 3: Connect all of the above classes in one program
Week 4	Lab 4: Make a menu to manage the orders
Week 5	Lab 5: Explain how robots work, Create the ground floor array, vaccum classes
Week 6	Lab 6: Methods for the vaccum moves: right, left, up, and down.
Week 7	Lab 7: Method to Suck the dirt, create different modes for the vaccum work

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Artificial Intelligence: A Modern Approach, 4th ed. by Stuart Russell and Peter Norvig	
Recommended Texts	Artificial Intelligence: Foundations of Computational Agents, 3rd edition by David L. Poole and Alan K. Mackworth	
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.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي