

COURSE DESCRIPTIONS

Faculty	Science and Information Technology				
Department	Computer Science	NQF level	6		
Course Title	Artificial Intelligence	Code	501352	Prerequisite	501292
Credit Hours	3	Theory	3	Practical	0
Course Leader	Prof. Dr. Mohammad Al-Batah	email	albatah@jadara.edu.jo		
Lecturers	Prof. Dr. Mohammad Al-Batah	emails	albatah@jadara.edu.jo		
Lecture time	8.30-10.00	Classroom	Distance learning		
Semester	First	Production		Updated	2021-2022
Awards	Bachelor Degree	Attendance	Fulltime		

Short Description

Artificial intelligence (AI) introduces AI and its scope and applications. Agent Types .AI programming languages. Knowledge representation. Heuristic Search and Problem-Solving with different strategies for solving different types of problems. Introduction to knowledge based systems. Expert Systems. Natural Language processing. Machine learning. Other AI applications. In problem solving by searching, we will provide some of the informed, uniformed, heuristic, local search algorithms and optimization problems. In knowledge representation, we will show how to use first-order logic to represent the most important aspects of the real world, such as actions, space, time and mental events.

Course Objectives

Upon completion of this course, students should be able to:

- Choose the appropriate representation for an AI problem or domain model
- Choose the appropriate algorithm for reasoning within an AI problem domain
- Design and analyze the performance of an AI system or components
- Describe AI algorithm and representations and explain their performance

Learning Outcomes

A. Knowledge - Theoretical Understanding

The student upon completion this course will be able to

a1: recognize the artificial intelligence fundamentals, history, and its foundation (K1)

B. Knowledge - Practical Application

The student upon completion this course will be able to

a2: Apply basic principles of AI in solution that require problem solving , inference, knowledge representation and learning (K5)

C. Skills - Generic Problem Solving and Analytical Skills

The student upon completion this course will be able to b1: distinguish between various applications of AI techniques in intelligent Agents, expert systems, artificial neural networks and other machine learning models (S2)
D. Skills - Communication, ICT, and Numeracy
b2: demonstrate an ability to share discussion in AI and its application in different discipline (S3)
E. Competence: Autonomy, Responsibility, and Context
Teaching and Learning Methods
Distance Learning
Assessment Methods
By quizzes, home works and exams

Course Contents					
Week	Hours	CLOs	Topics	Teaching & Learning Methods	Assessment Methods
1	3	a1	Introduction to Artificial Intelligence	Presentation & discussions	
2	3	a1	Intelligent Agents	Presentation & discussions	Quizzes
3	3	a1,a2	Solving problem by searching/ BFS algorithm	Presentation & discussions	Quizzes& Assignment
4	3	a2	Solving problem by searching / DFS	Presentation & case studies	Quizzes
5	3	a2, a1	Informed search /greedy algorithms /A* algorithm	Presentation & discussions	Assignment
6	3	a2	Informed search /local search algorithms and optimization problem	Presentation & case studies	
7	3	a2	Informed search /local search algorithms and optimization problem	Presentation & discussions	Quizzes
8	1:30	a2, b1	Informed search /local search algorithms and optimization problem	Presentation & case studies	Quizzes& Assignment
8	1:30	a1,a2, b1	Midterm Exam		
9	3	b1	Informed search / genetic algorithm	Presentation & case studies	Quizzes
10	3	a1, a2	Knowledge representation	Presentation & discussions	Quizzes& Assignment
11	3	a1,b1	Learning / machine learning algorithm	Presentation & case studies	Quizzes
12	3	a1, b2	Learning / machine learning algorithm	Presentation & case studies	Quizzes or assignment
14	2	a1,a2, b1,b2	Final exam		

Infrastructure	
Textbook	Artificial Intelligence A Modern Approach: Stuart Russel. Peter Norvig 3d edition or more
References	ISBN 0-13-080302-2
Required reading	
Electronic materials	Available on : http://elearning.jadara.edu.jo/CourseContent/index/10774/
Other	Any other book related to artificial intelligence

Assessment Method		Grade				
			a1	a2	b1	b2
First (Midterm)		30	16	11	3	
Second (if applicable)						
Final Exam		50	18	4	18	10
Coursework		20	5	6	6	3
Coursework assessment methods	Assignments	5	1	1	2	1
	Case study					
	Discussion and interaction	10	2	3	3	2
	Group work activities					
	Lab tests and assignments					
	Presentations					
	Quizzes	5	2	2	1	
Total		100	39	21	27	13

Plagiarism
<p>Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code).</p> <p>Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.</p>