



Jordan University of Science and Technology
Faculty of Computer & Information Technology
Computer Engineering Department

CPE480 Artificial Intelligence
Second Semester 2022-2023

Course Catalog
3 Credit Hours. Introduces representations, techniques, and architectures used to build applied systems and to account for intelligence from a computational point of view. Applications of rule chaining, heuristic search, constraint propagation, constrained search, inheritance, and other problem-solving paradigms. Applications of identification trees, neural nets, genetic algorithms, and other learning paradigms. Speculations on the contributions of human vision and language systems to human intelligence.

Text Book	
Title	Artificial Intelligence: A Modern Approach,
Author(s)	Stuart Russell & Peter Norvig
Edition	3rd Edition
Short Name	Ref #1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #2	Artificial Intelligence: Structures and strategies for complex problem solving	M. Tim Jones	5th Edition	

Instructor	
Name	Dr. Mazen AIWadi
Office Location	M2 L2, N2 L1
Office Hours	
Email	mgalwadi@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Mon, Wed : 10:00 - 11:00

Room: G2121

Prerequisites

Line Number	Course Name	Prerequisite Type
1713112	CPE311 Object-Oriented Software Analysis & Design	Prerequisite / Study
1753010	NES301 Probability And Queuing Theory	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Introduction	From Ref #1
Week 2	Intelligent Agents	From Ref #1
Weeks 3, 4	Solving problems by searching	From Ref #1, From Ref #2
Week 5	Informed Search & Local Search	From Ref #1
Week 6	Adversarial Search	From Ref #1, From Ref #2
Week 7	Constraint Satisfaction Problems	From Ref #1
Weeks 8, 9	Logical Agents	From Ref #1, From Ref #2
Week 10	Uncertain Knowledge and Reasoning	From Ref #1, From Ref #2
Week 11	Neural Networks	From Ref #1
Weeks 12, 13	Machine learning	From Ref #1, From Ref #2
Week 14	Biometrics	From Ref #1

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Describe the key components of the artificial intelligence field [1SO1]	5%	
Analyze and solve problems involving various forms of search algorithms, including the design of heuristic functions to improve the efficiency of such solutions [1SO1, 1SO2]	25%	
Describe minimax search and alpha-beta pruning in game playing [1SO1]	10%	

Apply Backtracking algorithm to solve constrained satisfaction problems. [1SO1, 1SO2]	10%	
Use propositional logic to represent a problem and use inference to deduce new statements [1SO1]	10%	
design and implement an artificial intelligence based programs [1SO3, 1SO4, 1SO5, 1SO6]	10%	
Describe and apply probability theorem on Bayesian networks [1SO3]	10%	
Understand the concepts of Neural Networks and how to use them in classification problems. [1SO1]	15%	
Grasp an overview of AI in identification of humans through bioinformatics. [1SO1, 1SO2, 1SO4]	5%	

Relationship to Program Student Outcomes (Out of 100%)																	
A	B	C	D	E	F	G	H	I	J	K	SO1	SO2	SO3	SO4	SO5	SO6	SO7
											59.17	19.17	12.5	4.17	2.5	2.5	

Evaluation	
Assessment Tool	Weight
Midterm exam	30%
final exam	40%
Quizzes/Projects	30%

Policy	
Attendance	Excellent attendance is expected. In accordance with university regulations, students missing more than 20% of total classes are subject to failure. No excuses will be accepted. If you miss class, it is your responsibility to find out about any announcements or assignments you may have missed. Attendance will be recorded at the beginning or end of each class.
Participation	You are expected to participate in class. Participation includes asking and answering questions, raising issues, and suggesting solutions to the discussed problems.
Project	Students are expected to work on a project within a group of 2-3 students. The project could be a small software project that implements a game based on the studied material.
Exams	Exams are meant to test your UNDERSTANDING of course.
Makeups	Makeup exam should not be given unless there is a valid excuse. Arrangements to take an exam at a time different than the one scheduled MUST be made prior to the scheduled exam time. In accordance with university regulations, students should bring a valid excuse authenticated through valid channels in JUST.
Workload	Average work-load student should expect to spend is 6 hours/week.
Code of Conduct	Home works and exams need to be done individually. Copying of another student's work, even if changes are subsequently made, is inappropriate, and such work will not be accepted. Cheating or copying from neighbor on exam is an illegal and unethical activity and standard JUST policy will be applied. All graded assignments must be your own work.

Date Printed: 2023-02-23