

Form 4.2

Faculty member + student

Course syllabus for Artificial Intelligence-CS370D

1. Faculty member information:

Name of faculty member responsible for the course

Dr.Abeer Mahmoud

Office Hours

Office Number

2.501.13

Email

ammahmoud@pnu.edu.sa

2. Course overview and general information:

College / Department

Computer Sciences and Information Sciences / Computer Sciences

Course Name and code

Artificial Intelligence / CS 370D

Number of credit hours

3 contact hours: lecture (3)+ 1 lab

Program or programs that offer this course

The Bachelor of Computer and Information Sciences in Computer Sciences

Year/course level

Level 8 / 4th year

Prerequisites for this course (if any)

None

Current requirements for this course (if any)

None

Site (to be given if not inside the main building of the institution)

The Main campus

3. Objectives of the course:

- Understand the fundamental concepts of Artificial Intelligence
- Understand different methods of search and optimization in AI
- Able to develop small application using heuristic functions to solve any search problem in AI
- Understand the learning strategies
- Understand and implement searching techniques
- Understand the fundamental concept of logic in AI Understand the knowledge areas
- Learn PROLOG language used to implement Artificial Intelligence Systems

4. Course description:

Week	Date	Topic	Activity	Intended learning outcomes	Assessment methods
1		<ul style="list-style-type: none"> What is AI? History of AI. Applied Areas of AI. What's involved in Intelligence? Turing Test 	<p>Student should read the assigned chapters before classes.</p> <p>Student is responsible for all material covered in the class.</p>	Recognize the basics of Artificial Intelligence concepts,	<p>Class participation, Bi-weekly quizzes, POP quizzes, research paper and/or presentation given in class. Final written exam and Labs evaluation.</p>
2,3		<ul style="list-style-type: none"> Intelligent Agents and environments Structure of agents Problem solving agents 	<p>Instructors should teach students how to study, analyze, and think attentively and critically.</p>	<p>1-understand meaning of intelligent agent</p> <p>2-differentiate between agent types</p>	
4,5,6		<ul style="list-style-type: none"> Solving problem by searching for solutions Uniformed search strategies (blind) Informed search strategies (heuristic) 	<p>Instructors should teach students to think independently and engage in group discussions.</p>	<p>1-Solve problems using different blind search algorithms</p> <p>2- Solve problems using different heuristic search algorithms</p>	
7,8		<ul style="list-style-type: none"> Local search algorithm Hill-Climbing Search. Simulated Annealing 	<p>Encouragement of students to be creative in their presentation.</p> <p>Teaching</p>	<p>1- Use Different AI Optimization algorithms in solving problems</p>	

		<p>Search.</p> <ul style="list-style-type: none"> Local Beam Search. Genetic Algorithms. Constraint Satisfaction Problems(CSP) 	<p>students to analyze data logically.</p> <p>Teaching students how to write programs in prolog.</p>		
9		<ul style="list-style-type: none"> Introduction to game theory First order logic 	<p>Use different styles of references and various scientific journals....etc.</p>	<p>1-Understand and differentiate between different types of logic, gaming</p>	
10,11		<ul style="list-style-type: none"> Knowledge representation 	<p>Individual counseling on research projects and scientific writing</p>	<p>1- Use different knowledge representation techniques to represent a problem</p>	
12,13		<ul style="list-style-type: none"> Forms of learning Learning from Examples Neural Network Decision Trees 		<p>1- -Solve problems using different learning techniques such as artificial neural network and decision trees</p>	
14		<ul style="list-style-type: none"> Prolog syntax and semantics Arithmetic & Boolean Expressions List Processing 		<p>1-Understand Prolog syntax 2-Write simple and advanced programs using PROLOG.</p>	
15		<ul style="list-style-type: none"> Robotics 			

5. Books and references:

1. Elaine Rich and Kevin Knight: Artificial Intelligence 2nd Ed , Tata McGraw Hill
2. Ivan Bratko :PROLOG Programming 2nd Ed., Pearson Education
3. Stuart Russel and Peter Norvig: Artificial Intelligence – A Modern Approach, 2nd Edition Pearson

6. Assessment methods and the division of grades:

Assessment method (Write an essay - test - a collective project - a final test ...)	Assessment Week	Grade	Percentage from overall grade	Comments
1 st Med Term	7 th week	15	15%	
2 nd Med Term	12 th week	15	15%	
quiz	9 th week	10	10%	
Lab	exam	20	20%	
Final exam (Theory) “Two academic hours“.	After 15	40	40	
Total		100	100	

7. Instructions (if any):