Faculty of Computers and Information Technology

Artificial Intelligence

Information :

Course Code :	CS341	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours

Department : Department of Computer Science

Instructor Information :

Title	Name	Office hours
Associate Professor	Osama Fathy Saleh Hegazy	2
Lecturer	HEBA MOHSEN MOHAMED MOSAAD HUSSIEN	5
Lecturer	HEBA MOHSEN MOHAMED MOSAAD HUSSIEN	5
Assistant Lecturer	Hadeer Khalid Tawfik El Zayat	
Assistant Lecturer	Hadeer Khalid Tawfik El Zayat	
Teaching Assistant	Belal Taha Fathi Taha Hussien	
Teaching Assistant	Kareem Hossam Mahmoud Shamseldeen	
Teaching Assistant	Omar Khaled Mohamed Mohey Eldein Ahmed El Azhary	
Teaching Assistant	Salma Mohamed Shalaby Abdelaziz	

Area Of Study :

Use and adopt fundamental and advanced mathematics, basic sciences and computer science theories in all development phases of knowledge Base Systems.
Understand knowledge that enhances skills in analyzing and interpreting knowledge in Artificial Intelligence area.
Evaluate effectively the merits of Artificial Intelligence Science using appropriate analytical skills.
Comprehend deeply the basic concepts of computer science to be ready for further and continuous learning in field of Artificial Intelligence.

Description :

Knowledge Representations: Predicate Calculus, Structured Representations, Network Representations. State Space Search: trees and graphs, heuristic search, model based reasoning, case-based reasoning, reasoning with uncertain or incomplete knowledge. Overview of AI languages, Overview of AI Application Areas. In particular, we consider the use of Prolog for database querying, parsing, meta-programming, and problem solving in AI. The programming assignments can be coded in SWI_Prolog or XSB.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Define the principles and techniques of different Artificial Intelligence areas.
2 -	Explain different qualitative and quantitative methods for knowledge analysis.
3 -	Describe the fundamental mathematical logic to solve problems in AI field.

b.Intellectual Skills: :	
1 -	Evaluate and justify different solutions using well-defined criteria in the field of Artificial Intelligence.
2 -	Select appropriate methodologies and techniques for a given problem solution and setting out their limitations, restrictions and errors in the field of Artificial Intelligence.
3 -	Identify main ideas, patterns, components, attributes and detect relationships between these components in the field of Artificial Intelligence.
c.Professional and Practical Skills: :	
1 -	Deploy effective supporting tools to develop and document of Knowledge base systems.
2 -	Apply, design methodologies, AI programming languages and different supporting tools to develop Knowledge base systems.
3 -	Analyze, Design, Implement and test Knowledge Based Systems.
d.General and Transferable Skills: :	
1 -	Apply communication skills in presentations and report writing using various methods and tools
2 -	Work in a team to develop the requirement documentation.

ABET Course outcomes :	
1 -	Understand knowledge that enhances skills in analyzing and interpreting knowledge in Artificial Intelligence subject areas.
2 -	Use appropriate mathematics and basic sciences in designing different Artificial Intelligence applications
3 -	Recognize the different machine learning techniques.
4 -	Develop applications utilizing Artificial Intelligence concepts.
5 -	Effectively evaluate the merits of Artificial Intelligence using appropriate analytical skills.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction to AI Concepts	4	2	2
Introduction to AI Concepts	4	2	2
Problems and Problem space	4	2	2
Problem Characteristics	4	2	2
Problem Characteristics	4	2	2
AI-Search	4	2	2
AI-Search	4	2	2
Knowledge Acquisition	4	2	2
Mid Term	2		
Knowledge Acquisition	4	2	2
Knowledge representation	4	2	2
Geometric analogy net	4	2	2
Recording Cases	4	2	2
Final Exam	2		

Teaching And Learning Methodologies :

Interactive Lectures including discussion

Practical Lab Sessions
Self-Study (Project / Reading Materials / Online Material / Presentations)
Problem Solving

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	10.00		
Final Exam	40.00	14	
Midterm Exam (s)	20.00	9	
Others (Participation)	10.00		
Quizzes	10.00	5	
Team Work Projects	10.00		

Course Notes :

Course Notes are available with all the slides used in lectures in electronic form on Learning Management System (Moodle)

Recommended books :

Ivan Bratko, Prolog: programming for artificial intelligent, Addison Wesley, , (last edition).

Web Sites :

IEEE intelligent systems & their applications
IEEE transactions on pattern analysis and machine intelligence
Intelligence : new visions of AI in practiceinternational journal of robotics & automationAI magazine
Technological Innovations Artificial Intelligence Periodical
www.ekb.eg
www.ai.com
Åwww.robotics.com