



Course Specifications

Course Title:	Artificial Intelligence	
Course Code:	CS424	
Program:	Computer Science	
Department:	Computer Science	
College:	Computer and Information Sciences	
Institution:	Majmaah University	



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A. Course Identification

1. Credit hours:	3 (3,1,0)
2. Course type	
a.	University <input type="checkbox"/> College <input type="checkbox"/> Department <input type="checkbox"/> Others <input checked="" type="checkbox"/> Program
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered:	Level 11
4. Pre-requisites for this course (if any): MH121 – Discrete Mathematics	
5. Co-requisites for this course (if any):	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	44	100%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	33
2	Laboratory/Studio	11
3	Tutorial	
4	Others (specify)	
	Total	44

B. Course Objectives and Learning Outcomes

1. Course Description

Artificial intelligence (AI) is a research field that studies how to realize the intelligent human behaviors on a computer. The ultimate goal of AI is to make a computer that can learn, plan, and solve problems autonomously. The main research topics in AI include: problem solving, reasoning, planning, natural language understanding, computer vision, automatic programming, and machine learning, and so on.

2. Course Main Objective

- Equipping students with necessary knowledge and skills required to be successful in building much needed intelligent computer systems based on the solid foundations of Computer Science and Information Technology.
- Providing students techniques to develop, maintain, and utilize intelligent systems in many life applications.
- Familiarizing students with advanced topics in AI using Lisp and Prolog languages.



- (d) Developing creative capacities for the design, implementation, and analysis of computer programs that reason and/or act intelligently
- (e) Learning to analyze and experimentally evaluate designs and implementations of the intelligent computer programs.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1		
1.2		
1.3		
1...		
2	Skills :	
2.1	Students learn how to design, implement and evaluate an AI algorithm and write the program for the same.	S2
2.2	Students apply science theory and software development to find a solution of practical problem.	S4 [CS]
2.3	Students learn how to apply knowledge of computing to find the best solution to a certain problem.	S5
2...		
3	Values:	
3.1	Students will learn how to build and run an intelligent agent using specific hardware and software programming tools as a team.	V1
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction: Definitions, History of AI	4
2	Intelligent Agents	4
3	Problem Solving by Searching	8
4	Informed Search and Exploration	4
5	Constraint Programming	4
6	Knowledge Representation & Reasoning	4
7	Games & First Order Logic	4
8	Inference	4
9	Machine Learning	4
10	Present and Future of AI	4
Total		44

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		



Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.1			
1.2			
...			
2.0	Skills		
2.1	Students learn how to design, implement and evaluate an AI algorithm and write the program for the same.	Mini Project, Lab Exercises	Lab Based Assignments, Mini Project
2.2	Students apply science theory and software development to find a solution of practical problem.	Mini Project, Graduation Project, Lab Exercises	Lab project
2.3	Students learn how to apply knowledge of computing to find the best solution to a certain problem.	Classroom Teaching	Midterm Exam, Final Exam
3.0	Values		
3.1	Students will learn how to build and run an intelligent agent using specific hardware and software programming tools as a team.	Mini Project, Lab Exercises	Oral Exam
3.2			
...			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Exam 1	5	20%
2	Exam 2	8	20%
3	Lab Project	11	20%
4	Final Exam	12	40%
5			
6			
7			
8			

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

Two office hours per week are dedicated to students.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall; 3rd ed. (2009). ISBN-10: 0136042597, ISBN-13: 978-0136042594
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Essential References Materials	
Electronic Materials	
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom, lab, robots, PCs
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of assessment	Instructor	Direct
Achievement of CLOs	Instructor	Direct

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	