



## Course Specifications

<b>Course Title:</b>	Artificial Intelligence
<b>Course Code:</b>	CSI 411
<b>Program:</b>	B.Sc. in Computer science
<b>Department:</b>	CSI Department
<b>College:</b>	Collegue of Science
<b>Institution:</b>	Majmaah University.

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## A. Course Identification

<b>1. Credit hours:</b>
<b>2. Course type</b>
a. University <input checked="" type="checkbox"/> College <input checked="" type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b> 7
<b>4. Pre-requisites for this course (if any):</b> CSI 321: Design and Analysis of Algorithms
<b>5. Co-requisites for this course (if any):</b> N/A

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	<input checked="" type="checkbox"/>	80%
2	Blended	<input checked="" type="checkbox"/>	10%
3	E-learning	<input checked="" type="checkbox"/>	5%
4	Distance learning		
5	Other	<input checked="" type="checkbox"/>	5%

### 7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	20
3	Tutorial	10
4	Others (specify)	-
	<b>Total</b>	<b>60</b>

## B. Course Objectives and Learning Outcomes

### 1. Course Description

Artificial Intelligence (AI) technology is increasingly prevalent in our everyday lives. It has uses in a variety of industries from gaming, economics and finance, as well as in the state-of-the-art research fields from robotics, medical diagnosis, and automated reasoning. In this course you'll learn the basics and applications of AI, including: automatic reasoning, robotics, computer vision, and natural language processing, web search.



## 2. Course Main Objective

The course provides an introduction to the types of problems and techniques in Artificial Intelligence. Problem-Solving methods and major structures used in Artificial Intelligence programs, constraint satisfaction problems. Study of knowledge representation techniques such as predicate logic, non-monotonic logic, and probabilistic reasoning. Application areas of AI such as game playing, expert systems, Machine learning and natural language processing.

Project: cover some course areas using a logic programming tool (Prolog language for example).

## 3. Course Learning Outcomes

CLOs		Aligned PLOs
1	<b>Knowledge and Understanding</b>	
1.1	Have an understanding of space search and search algorithms, logic-based knowledge representation of issues in reasoning methods.	K2
1.2	Have an understanding of the limitations of current symbolic AI paradigm.	K2
1.3		
1...		
2	<b>Skills :</b>	
2.1	Attempt to generate new ideas and innovations using different types of communication methods.	S4
2.2	Be able to understand AI applications in real life.	S4
2.3		
2...		
3	<b>Values:</b>	
3.1	Attempt to generate new ideas and innovations using different types of communication methods.	c2
3.2	Be able to understand AI applications in real life.	C1
3.3	Work in a group and learn time management.	c2
3...	Learn how to search for information through library and internet.	S2

## C. Course Content

No	List of Topics	Contact Hours
1	1. Introduction	4
2	2. Intelligent Agents	4
3	3. Problem Solving	8
4	4. Prolog programming	4
5	5. Informed search methods	4
6	6. Constraint Satisfaction Problems	4
7	7. Adversarial Search	4
8	8. Logical Agents	4
9	9. First-Order Logic	4
10	10. Inference in First-Order Logic	8
11	11. Knowledge Representation	8
12	12. Learning from Observations	4



**Total**

## D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding</b>		
1.1	Have an understanding of space search and search algorithms, logic-based knowledge representation of issues in reasoning methods.	Written Exam Homeworks Lab assignments Class Activities Presentations	
1.2	Have an understanding of the limitations of current symbolic AI paradigm.	Written Exam Homeworks Lab assignments Class Activities Presentations	
...			
<b>2.0</b>	<b>Skills</b>		
2.1	Attempt to generate new ideas and innovations using different types of communication methods.	Written Exam Homeworks Lab assignments Class Activities Presentations	
2.2	Be able to understand AI applications in real life.	Written Exam Homeworks Lab assignments Class Activities Presentations	
...			
<b>3.0</b>	<b>Values</b>		
3.1	Attempt to generate new ideas and innovations using different types of communication methods.	Class Activities and presentation; Assignment reports	
3.2	Be able to understand AI applications in real life.	Class Activities and presentation; Assignment reports	
...	Work in a group and learn time management.	Class Activities and presentation; Assignment reports	
	Learn how to search for information through library and internet.	Class Activities and presentation; Assignment reports	

### 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	First written mid-term exam	6	10%
2	Second written mid-term exam	12	10%
3	Presentation, class activities, and group discussion	Every week	10%
4	Homework assignments	After Every chapter	10%
5	Practical exam	15	20%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
6	Final exam	16	40%
7			
8			

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

## E. Student Academic Counseling and Support

**Office Hour:** Monday 8-10  
**Contact Email:** h.brahim@mu.edu.sa

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	Artificial Intelligence A Modern Approach, Stuart Russell & Peter Norvig, Prentice Hall, Published Date: Dec 1, 2009.
<b>Essential References Materials</b>	George F. Luger, Artificial Intelligence: structures and strategies for complex problem solving, Addison-Wesley; 6 edition, (March 9, 2011)
<b>Electronic Materials</b>	<ul style="list-style-type: none"> <li><a href="http://nptel.ac.in/courses/106105077/">http://nptel.ac.in/courses/106105077/</a></li> </ul>
<b>Other Learning Materials</b>	Video and presentations that available with the instructor

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Laboratories, as those that are available at the college of science at AzZulfi
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Smart Board with supporting software / computers with updated versions of software as required to understand the subject concepts.
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N/A

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Analysis of students' results.		
Observation during class work.		
Students' evaluations.		
Colleagues' evaluations.		

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Evaluation questionnaire filled by the students.		

**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	