



Course Specification

Course Name:[Artificial Intelligence]

Course Code:[CS361]

I. Basic Course Information

Major or minor element of program:Both Major and Minor
Department offering the course:[Computer Science Department]

Academic level:[300 Level]

Semester in which course is offered:[Second (Spring) Semester]

Course pre-requisite(s): [CS112 Programming – 1

AndCS215 -File Organization and Processing]

Credit Hours:3

Contact Hours Through:

Lecture	Tutorial*	Practical*	Total
2.5	0.0	1.5	4.0

* 1.5 hours for **either** Tutorial or Practical

Approval date of course specification: January 2015

II. Overall Aims of Course

The primary aim of this course is to provide an introduction to the basic principles, techniques, and applications of Artificial Intelligence. Artificial Intelligence is the science and engineering of making intelligent machines, especially intelligent computer programs.]

III. Program ILOs covered by course

Program Intended Learning Outcomes (By Code)			
Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
[K13,K14,K16,K17]	[I10,I11,I14,I15]	[P4,P12,P14]	[G2,G4,G6,G9]



Course Specification

IV. Intended Learning Outcomes of Course (ILOs)

a. Knowledge and Understanding

On completing the course, students should be able to:

- K.1 Distinguish between different knowledge representation techniques such as production system, frame based system, semantic network and logic.
- K.2 Use logic and proof (such as resolution) as a basis for knowledge representation and automated reasoning.
- K.3 Differentiate between blind search techniques as well as informed search.
- K.4 Recognize the value of problem solving methods.]

b. Intellectual/Cognitive Skills

On completing the course, students should be able to:

- I.1 Retrieve required knowledge from some problem statement.
- I.2 Select the most suitable way to represent extracted knowledge.
- I.3 Apply any search technique to any problem.
- I.4 Apply the suitable heuristic to any problem.
- I.5 Select the most suitable search technique to any problem.]

c. Practical/Professional Skills

On completing the course, students should be able to:

- P.1 Differentiate between declarative and procedural languages.
- P.2 Discover the working process of prolog inference engine.
- P.3 Solve different AI problems such as constraint satisfaction problem using prolog language.]

d. General and Transferable Skills

On completing the course, students should be able to:

- G.1 Work as a part of a team to produce reports.
- G.2 Work as a part of a team to find a solution for practical problems and projects.
- G.3 Write structural reports.
- G.4 Make oral communication skills by making report presentation.
- G.5 Make specific task in certain period of time “training problems in labs”.]

V. Course MatrixContents

	Main Topics / Chapters	Duration (Weeks)	Course ILOs Covered by Topic (By ILO Code)			
			K & U	I.S.	P.S.	G.S.
1-	[Introduction To AI & prolog]	[2]	[K2]	[I1]	[P1,P2]	[G5]
2-	[Knowledge Representation& using prolog]	[4]	[K1,K2]	[I1,I2]	[P2]	[G2]
3-	[Search as problem solving method using prolog]	[3]	[K3,K4]	[I3,I5]	[P2]	[G1,G5]
4-	[constraint satisfaction problem using prolog]	[2]	[K4]	[I4]	[P3]	[G1,G2,G4,G5]
5-	[game playing]	[1]	[K3,K4]	[I5]	[P2]	[G2,G4,G5]
6-	[discuss term report]	[1]	[K4]	[I1]	[P1]	[G3,G4]
	Net Teaching Weeks	13				



Course Specification

VI. Course Weekly Detailed Topics / hours / ILOs

Week No.	Sub-Topics	Total Hours	Contact Hours	
			Theoretical Hours	Practical Hours*
1	Introduction to AI	2.5	2.5	
2	Introduction to Prolog	4	2.5	1.5
3	Knowledge Representation "Propositional Logic" -1	4	2.5	1.5
4	Knowledge Representation "First Order Predicate Logic" - 2	4	2.5	1.5
5	"Knowledge Representation" Semantic Networks and Frames	4	2.5	1.5
6	"Knowledge Representation" Rule Based System	4	2.5	1.5
7	Midterm Exam			
8	"Blind Search Techniques - 1 "	4	2.5	1.5
9	"Blind Search Techniques - 2 "	4	2.5	1.5
10	"Informed Search Techniques "	4	2.5	1.5
11	Game Playing Search	4	2.5	1.5
12	constraint satisfaction problem -1	4	2.5	1.5
13	constraint satisfaction problem -2	4	2.5	1.5
14	Project Discussion	4	2.5	1.5
15	Final Exam			
Total Teaching Hours		51	33	18

* No Practical/Tutorial during the first week of the semester

VII. Teaching and Learning Methods

Teaching/Learning Method	Selected Method	Course ILOs Covered by Method (By ILO Code)			
		K & U	Intellectual Skills	Professional Skills	General Skills
Lectures & Seminars	X	All	All		
Tutorials					
Computer lab Sessions	X	K3		P1,P2	
Practical lab Work	X	K3	All	P3	G2,G5
Reading Materials	X	All	I1,I2,I3	P1,P2	
Web-site Searches	X		I1,I2,I4,I5	P2	G3
Research & Reporting					
Problem Solving / Problem-based Learning	X		All	P2,P3	
Projects					
Independent Work					
Group Work	X				G1,G2,G5
Case Studies	X		All	P3	
Presentations	X				G4
Simulation Analysis					
Others (Specify):					



Course Specification

VIII. Assessment Methods, Schedule and Grade Distribution

Assessment Method	Selected Method	Course ILOs Covered by Method (By ILO Code)				Assessment Weight / Percentage	Week No.
		K & U	I.S.	P.S.	G.S.		
Midterm Exam	X	All	I1,I2,I3			10%	7
Final Exam	X	All	I1,I2,I3			60%	15
Quizzes	X						
Course Work	X	All	All	P2,P3		10%	
Report Writing	X				G3,G5	5%	
Case Study Analysis	X		All	All		5%	
Oral Presentations	X				G1,G4,G5	2%	
Practical	X		All	All	G1,G2,G5	2%	
Group Project	X		All	P2,P3	G1,G2,G5	6%	
Individual Project							
Others (Specify):							

IX. List of References

Essential Text Books	<ul style="list-style-type: none"> Russell, S. and Norvig, P. Artificial Intelligence A Modern Approach. Prentice Hall, 2nd edition, 2003. this book will cover the following topics "knowledge representation, search, planning" Artificial Intelligence” - 5th Edition - George F. Luger. this book will cover the following topics "knowledge representation, search, planning" “Prolog Programming for Artificial Intelligence” - Ivan Bratko. this book will cover the following topic "prolog inference engine"]
Course notes	• None
Recommended books	• None
Periodicals, Web sites, etc ...	<ul style="list-style-type: none"> PowerPoint presentation of all course materials. all lab materials www.fci-students.com]

X. Facilities required for teaching and learning

<p>List the facilities required</p> <ul style="list-style-type: none"> This course will use sicstus prolog tool to apply practical work]
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Course coordinator:[Prof. Reem Bahgat andProf. Abeer E] Korany

Head of Department:[Prof. Abeer El Korany]

Date:January 2015