Course Number and Name
BCS603-ARTIFICIAL INTELLIGENCE & EXPERT SYSTEMS

Credits and Contact Hours
3 and 45

Course Coordinator's Name
Ms R.Priya

Text Books and References

TEXT BOOKS

1. Elaine Rich, Kevin Knight, "Artificial Intelligence", 3/e, Tata McGraw Hill, 2009.
2. Russell , " Artificial intelligence :A modern Approach , Pearson Education ,3rd edition,2013

REFERENCE BOOKS

1. Artificial Intelligence and Expert system by V.Daniel hunt, Springer press,2011.

2. Nilsson N.J., "Principles of Artificial Intelligence", Morgan Kaufmann.1998.

3. http://www.ggu.ac.in/download/Class-Note13/Artificial %20 Intelligence %20 and %20 Expert %20 System24.10.13.pdf

Course Description
The purpose of this course is to impart concepts of Artificial Intelligence and Expert System.

Prerequisites	Co-requisites
Nil	Nil

required, elective, or selected elective (as per Table 5-1)
selected elective

Course Outcomes (COs)

CO1:   Describe the modern view of AI as the study of agents that receive percepts from the Environment and perform actions.

CO2:   Demonstrate awareness of informed search and exploration methods.

CO3:   Explain about AI techniques for   knowledge representation, planning and uncertainty Management.

CO4:   Develop knowledge of decision making and learning methods.

CO5:   Describe the use of AI to solve English Communication problems.

CO6:   Explain the concept of Knowledge Representation.

Student Outcomes (SOs) from Criterion 3 covered by this Course

COs/SOs	a	b	c	d	e	f	g	h	i	j	k
CO1		H		H							
CO2	M			H		M					
CO3				H		M	M				
CO4		M		H							
CO5	M			H		H					
CO6	L	M		M		M					

List of Topics Covered

UNIT- I

PROBLEMS AND SEARCH   **9**

Searching strategies- Uninformed Search- breadth first search, depth first search, uniform cost seart, depth limited search, iterative deepening search, bidirectional search - Informed Search- Best first search ,Greedy Best first search , A* search – Constraint satisfaction problem , Local searching strategies.

UNIT II   **9**

REASONING

Symbolic Reasoning Under Uncertainty- Statistical Reasoning - Weak Slot-And-Filler-Structure - Semantic nets – Frames- Strong Slot-And-Filler Structure-Conceptual Dependency-Scripts- CYC.

UNIT III   **9**

KNOWLEDGE REPRESENTATION

Knowledge Representation - Knowledge representation issues - Using predicate logic - Representing Knowledge Using Rules. Syntactic- Semantic of Representation – Logic & slot and filler - Game Playing – Minimal search- Alpha beta cutoffs –Iteratic deepening planning – component of planning system – Goal stack planning.

UNIT IV   **9**

NATURAL LANGUAGE PROCESSING

Natural Language Processing –Syntactic processing, semantic analysis-Parallel and Distributed AI-Psychological modeling- parallelism and distributed in reasoning systems – Learning - Connectionist Models – Hopfield networks, neural networks

UNIT V

EXPERT SYSTEMS   **9**

Common Sense –qualitative physics, commonsense ontologies- memory organization -Expert systems –Expert system shells- explanation – Knowledge acquisition -Perception and Action – Real time search- robot architecture.