## MCA 2<sup>nd</sup> Semester

Course: 201: Artificial Intelligence

Course Code	201								
Course Title	Artificial Intelligence								
Credit	4								
Teaching per Week	4 Hrs								
Medium of Instruction	English								
Minimum weeks per Semester	15 (Including Classwork, examination, preparation, holidays etc.)								
Effective From	June 2020								
Purpose of Course	The purpose of the course is to make the student capable of implementing the								
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	implementation in Knowledge-Based Systems Course Objective To acquaint							ıaint	
	students with concepts of Artificial Intelligence and its applications.								
Course Objective	To make students acquainted with concepts of Artificial Intelligence and its applications.								
Course Outcome	CO1 : Exp	olain stuc	lents the	insight of	the histo	rical and	fundame	ntal aspe	cts the
	artificial	intelliger	ice.						
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		edicate L	ogic (FOF	L), Se mar	ntic Netw	ork, Cond	eptual Gr	aphs, Scr	ripts, and
	Frames.								
	CO3: Train students to apply various searching algorithms fall under infor uninformed search methods to solve complex problem of AI domain.						ormed and		
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	within m			dents to d	eai with	the unce	rtainty th	atinnerei	ntiyiles
				with the a	analysis a	nd daval	nment n	rocass of	the
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Ī.	knowledge based system development. CO6: Explain students to utilize the AI problemsolving techniques in the advance								
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	CO6 : Exp	olain stuc	lents to u	tilize the	AI proble				
	CO6 : Exp Al proble	olain stuc	lents to u		AI proble				
	CO6 : Exp	olain stuc	lents to u in like Na	tilize the	AI proble				
Mapping between COs with PSOs	CO6 : Exp Al proble (CV)	olain stuc	lents to u	tilize the	AI proble				
Mapping between COs with PSOs	CO6 : Exp Al proble	olain stud em doma	lents to u in like Na	tilize the tural Lang	Al proble guage Pro	ocessing (	NLP) and	Compute	erVision
Mapping between COs with PSOs	CO6 : Exp Al proble (CV)	olain stud em doma	lents to u in like Na	tilize the tural Lang	Al proble guage Pro	ocessing (	NLP) and	Compute	erVision
Mapping between COs with PSOs	CO6 : Exp Al proble (CV) CO1	olain stud em doma	lents to u in like Na	tilize the tural Lang	Al proble guage Pro	ocessing (	NLP) and	Compute	erVision
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	2.2 Searching
	2.2.1 Search Problem
	2.2.2 Initial State, action, transition model, goal test, the cost function
	2.2.3 Uninformed Search
	2.2.3.1 Depth First Search
	2.2.3.2 Breadth-First Search
	2.2.3.3 Iterative Deepening Search
	2.2.4 Informed Search
	2.2.4.1 Heuristics
	2.2.4.2 A* Search
	2.2.4.3 Minimax
	2.2.4.5 Hill-Climbing Method
	2.2.4.6 Constraint Satisfaction Search
	Unit 3:
	3.1 Uncertainty
	3.1.1 Probability
	3.1.2 Conditional Probability
	3.1.3 Baye's Rule
	3.1.4 Joint Probability
	3.1.5 Probability Rules
	3.2 Introduction to Hidden Markov Model
	Unit 4:
	4.1 Knowledge Acquisition
	4.1.1 Knowledge gathering
	4.1.2 Learning Models
	4.1.2.1 Introduction to Supervised Learning
	4.1.2.2 Introduction to Unsupervised Learning
	4.1.2.3 Reinforcement Learning
	4.1.3 Performance of Learning Model
	Unit 5:
	5.1 Expert System
	5.2 Characteristics of Expert System
	5.3 Architecture of Expert System
	5.4 Application of Al in Natural Language Processing
Deference Deeks	5.5 Application of Al in Computer Vision
Reference Books	1. Artificial intelligence, 3 <sup>rd</sup> Edition, Kevin Knight, Elaine Rich, B. Shivashankar
	Nair, McGraw Hill  2. Russell Stuart Jonathan and Norvig Peter, Artificial Intelligence: A Modern
	Approach, 3rd Edition, Prentice-Hall, 2010
	3. A First Course in Artificial Intelligence, Deepak Khemani, McGraw Hill
	4. Introduction to artificial intelligence, Akerkar, Rajendra, PHI Learning
	5. Foundation of Artificial Intelligence and Expert Systems by V.S. Janakiraman,
	K. Sarukesi, P. Gopalakrishnan, Mc Millan  6. Evapert Systems Principles and Programming (2rd Edition) by Giarratana &
	6. Expert Systems Principles and Programming (3rd Edition) by Giarratano & Pilov, Thomson (Vikas Publishing House)
Teaching Methodology	Riley, Thomson (Vikas Publishing House)
Teaching Methodology Evaluation Method	Classwork, Discussion, Self-Study, Seminars and/or Assignment
Lvaluation Method	30% Internal assessment based on class attendance, participation, class test,
	quiz, assignment, seminar, internal examination, etc.
	70% External based on semester end University examination