Ganpat University
॥ विद्यया समाजोत्कर्षः ॥
Faculty of Computer Applications

Programme	B.Sc. IT Honours (Artificial Intelligence & Machine Learning)	**Branch**	Computer Applications
Semester	I	**Version**	1.0.0.0
Effective from Academic Year	2026-27	**Effective for the batch Admitted in**	June 2024
Subject code	U81E6AI	**Subject Name**	INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Teaching scheme						**Examination scheme(Marks)**			
(Per week)	**Lecture (DT)**		**Practical (Lab.)**		**Total**		**CCE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	25	25	50
Hours	2	-	-	-	2				

Objective:

To learn the basic principles, techniques, and applications of Artificial Intelligence

Pre-requisites:

One should have basic Knowledge of probability and statistics

Learning Outcome:

Name of CO	Description
CO1	Understanding the Fundamentals of AI
CO2	Problem-Solving Using AI Search Techniques
CO3	Knowledge Representation and Reasoning
CO4	Managing Uncertainty in AI Systems
CO5	Learn Advanced AI Structures and Natural Language Processing

Mapping of CO and PO:

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	1	1	1	2	1	1	1	1	1
CO2	2	3	2	3	2	1	1	1	1	1	1	1
CO3	2	2	3	2	2	2	1	1	3	3	1	1
CO4	2	2	2	2	1	1	1	1	1	2	1	1
CO5	2	2	3	3	3	1	2	3	2	3	3	3

Content:

Unit	Content	Hrs.
1	**Basics of Artificial Intelligence:** Introduction of AI, Advantages and Disadvantages of AI, Applications of AI, Types of AI, AI Techniques, Agents in AI, Types of AI Agents.	06
2	**Problems, State Space Search & Heuristic Search Techniques:** Defining The Problems As A State Space Search, Production Systems, Production Characteristics, Production System Characteristics, Issues In The Design Of Search Programs, Additional Problems.	06

	Generate-And-Test, Hill Climbing, Best-First Search, Problem Reduction, Constraint Satisfaction, Means-Ends Analysis	
3	I**ntroduction to Knowledge representation:** Representation and mappings, approaches of knowledge representation, Issues in knowledge representation, Representing simple facts in logic, representing Instance and Is a relationships, Computable functions and Predicates, Resolution, Natural deduction, Procedural versus declarative knowledge, logic programming, forward versus backward reasoning	06
4	**Symbolic reasoning under uncertainty, Statistical Reasoning, Weak slot and filler structures:** Non monotonic reasoning, default reasoning, Minimalist reasoning, Dependency directed backtracking, non-dependency directed back tracking, Justification based truth maintenance system, logic-based truth maintenance system, Probability and bays' theorem, Bayesian Network, Dempster-Shafer theory, Semantic nets, Partitioned semantic nets, Frames	06
5	**Strong slot and filler structures, Parallel and distributed AI, Natural language processing:** Conceptual dependency, Scripts, CYC, Psychological modelling, Parallelism in reasoning systems, Distributed reasoning systems, Syntactic processing, Analysis, discourse and pragmatic processing	06

Practical Content:	
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Reference Books:	
1	Artificial Intelligence Elain Rich: , McGraw Hill
2	Principles of AI & ES Development, David W. Rolston, McGraw Hill
3	Artificial Intelligence An Engineering Approach, Robort J. Sctialkaff, McGraw Hill
Web Reference:	
1	www.javatpoint.com/artificial-intelligence-tutorial
MOOC/Certificate Course:	
1	www.coursera.org/learn/ai-for-everyone
2	www.coursera.org/learn/artificial-intelligence-an-overview
Question Paper Scheme:	
	End Semester Examination Duration: (1 Hour Theory Examination) Note for Examiner: - Q-1 Any one out of Two (05 Marks) Q-2 Any one out of Two (05 Marks) Q-3 Any one out of Two (05 Marks) Q-4 Any one out of Two (05 Marks) Q-5 Any one out of Two (05 Marks) *The question paper must comprehensively address all Course Outcomes (COs), align with Bloom's Taxonomy levels, and ensure complete syllabus coverage.