PVP SIDDHARTHA INSTITUTE OF TECHNOLOGY, KANURU, VIJAYAWADA(AUTONOMOUS)
INFORMATION TECHNOLOGY

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

(Professional Elective – II)

Course Code	20IT4601D	**Year**	III	**Semester**	II
Course Category	PE -2	**Branch**	IT	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	-
Continuous Internal Evaluation:	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes		**Blooms Taxonomy Level**
Upon Successful completion of course, the student will be able to		
CO1	Know the challenges and concepts of AI.	L2
CO2	Solve problems using heuristics search algorithms	L3
CO3	Transform knowledge into rules.	L3
CO4	Demonstrate Symbolic reasoning under uncertainty	L3
CO5	Acquainted with expert systems.	L3

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial,2:Moderate,1:Slight)

	PO1	**PO2**	**PO 3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3	3											3	3
CO2	3	3											3	3
CO3	3	3											3	3
CO4		3					3						3	3
CO5		3											3	3

Syllabus		
Unit No	**Contents**	**Mapped CO**
I	**What is AI**: The AI Problems, What is an AI Techniques, Criteria for Successes? Problems and problem spaces and Search: Problem as a state space search, Production systems, Problem Characteristics, Production system characteristics.	**CO1**
II	**Heuristic search technique**: Generate and test, Hill climbing, Best First search, Problem reduction, Constraint satisfaction, Means ends analysis.	**CO2**
III	**Knowledge Representation issues**: Representations and mappings. Predicate logic: Representing simple facts in logic, Resolution. Representing knowledge using rules: Procedural knowledge Vs Declarative knowledge, Forward Vs Backward reasoning, matching.	**CO3**
IV	**Symbolic reasoning under uncertainty**: Introduction to Non monotonic reasoning, Implementation in DFS and BFS. Weak, strong slot and filler structures: Semantic nets, Frames, Conceptual dependency, Scripts.	**CO4**
V	**Game playing**: The min-max search procedure, adding alpha-beta cutoffs. Planning: Goal stack planning, Hierarchical planning. Expert Systems: Expert system shells, Knowledge acquisition. Perception and action: Perception, action, Robot architecture.	**CO5**

Learning Resources

Text Books

1. Artificial Intelligence,2nd Edition, E.Rich and K.Knight(TMH).

References

1. Artificial Intelligence and Expert Systems–Patters on PHI
2. Expert Systems Principles and Programming-Fourth Edn, Giarrantana/Riley, Thomson
3. PROLOG Programming for Artificial Intelligence. IvanBratka-Third Edition–Pearson Education.

e-Resources& other digital material

http://www.jntuk-coeerd.in/
http://nptel.ac.in/video.php?subjectId=106105079
http://nptel.iitk.ac.in/courses/Webcourse-contents/IIT%20Kharagpur/Artificial%20intelligence/New_index1.html