

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Semester: III

Mechanical (Production Engineering)

Subject Name: **Artificial Intelligence in Manufacturing**
(Major Elective - IV)

Subject Code: **732802**

Sr No.	Course Content
1	Introduction: AI is an exciting and rewarding discipline. Students can use AI to solve complex problems in CAD/CAM and Engineering.
2	ITS ROOTS AND SCOPE: Definitions, overview of AI application areas, AI as Representation and search: the predicate calculus, application
3	STRUCTURES AND STRATEGIES FOR STATE SPACE SEARCH: Introduction, Graph theory, Strategies for state space search using the state space to represent, Reasoning with the Predicate Calculus.
4	HEURISTIC SEARCH: algorithm, admissibility, informedness, using heuristic in Games and complexity issues.
5	CONTROL AND IMPLEMENTATION OF STATE SPACE SEARCH: Recursion based Search, Pattern-Directed search and production systems.
6	MACHINE LEARNING: Symbol based, connectionist, social and emigrant.
7	ADVANCED TOPICS: AI Problem Solving: Automated reasoning and Understanding natural language.
8	RECENT DEVELOPMENT: Knowledge based systems, Expert Systems and AI in manufacturing as case studies published in research papers.

Reference Books:

1. Artificial Intelligence- Structures and Strategies for Complex Problem Solving
George F. Luger-Pearson Education Asia.
2. Artificial Intelligence by Elaine Rich & Kevin Knight, Tata McGraw Hills.
3. Introduction to Artificial Intelligence by Dan W. Petterson, PHI Publishers