



MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS INSTITUTION – UGC, GOVT. OF INDIA)

**B.Tech
Aeronautical
Engineering**

Department of AERONAUTICAL ENGINEERING



**ARTIFICIAL INTELLIGENCE AND MACHINE
LEARNING (R20A0566)**

COURSE COVERAGE SUMMARY

Prepared by:

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MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF AERONAUTICAL ENGINEERING

B.Tech III-II ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

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Unit	Title of the unit	Topics of the unit	Name of the Text Book	Chapter No.	Page No
I	Introduction	Introduction: AI problems, Agents and Environments, Structure of Agents, Problem Solving Agents Basic Search Strategies: Problem Spaces, Uninformed Search (Breadth- First, DepthFirst Search, Depth-first with Iterative Deepening), Heuristic Search (Hill Climbing, Generic Best-First, A*), Constraint Satisfaction (Backtracking, Local Search)	Kinnison, H.A Russell, S. and Norvig, P, Artificial Intelligence: A Modern Approach, Third Edition, Prentice- Hall, 2010., Aviation Maintenance Manageent, McGraw – Hill – 2004	1	1-36
II	Advanced Search	Advanced Search: Constructing Search Trees, Stochastic Search, A* Search Implementation, Minimax Search, Alpha-Beta Pruning Basic Knowledge Representation and Reasoning: Propositional Logic, First-Order Logic, Forward Chaining and Backward Chaining, Introduction to Probabilistic Reasoning, Bayes Theorem	Russell, S. and Norvig, P, Artificial Intelligence: A Modern Approach, Third Edition, Prentice- Hall, 2010.	2	63-180
III	Machine Learning	Machine-Learning: Introduction. Machine Learning Systems,Forms of Learning: Supervised and Unsupervised Learning,reinforcement, Supervised Learning, Unsupervised Learning, reinforcement 3 Theory of learning – feasibility of learning – Data Preparation–training versus testing and split.	Mastering Machine Learning with Python in Six Steps: A Practical Implementation Guide to Predictive	3	208-344

IV	Supervised Learning	Regression: Linear Regression, multi linear regression, Polynomial Regression, logistic regression, Non-linear Regression, Model evaluation methods, Classification: – support vector machines (SVM) , Naïve Bayes classification	Mastering Machine Learning with Python in Six Steps: A Practical Implementation Guide to Predictive	4	651-789
V	Unsupervised learning	Nearest neighbor models – K-means – clustering around medoids – silhouettes ,hierarchical clustering – k-d trees, Clustering trees – learning, ordered rule lists – learning unordered rule. Reinforcement learning- Example: Getting Lost -State andAction Spaces	Mastering Machine Learning with Python in Six Steps: A Practical Implementation Guide to Predictive	5	823-925

Text Books:

1. Russell, S. and Norvig, P, Artificial Intelligence: A Modern Approach, Third Edition, Prentice- Hall, 2010.
2. Mastering Machine Learning with Python in Six Steps: A Practical Implementation Guide to Predictive

References:

1. Introduction to Machine Learning with Python