# SES's L. S. RAHEJA COLLEGE OF ARTS AND COMMERCE (AUTONOMOUS)

**Syllabus of Introduction to Artificial Intelligence under NEP 2020 vertical - OE with effect from 2024-25**

**Department of Information Technology and Data Science**

**HoD/Sr. Person of the Department: Prajakta Joshi**

**Date of approval by the BoS: 27/04/4024**

**Approved by the Academic Council: 29/04/2024**

**Ratified by the Governing Body on: 06/05/2024**

| Programme: FYBFM | | | | Semester : II | |
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| Course : Introduction to Artificial Intelligence<br>Academic Year: 2024-2025 Batch: 2024-2027 | | | | Code: UGBFMIIOE224 | |
| Teaching Scheme | | | Evaluation Scheme | | |
| **Lectures** | **Practical** | **Tutorials** | **Credits** | **Internal Continuous Assessment (ICA) (weightage)** | **Term End Examinations (TEE) (weightage)** |
| **30** | **Nil** | **Nil** | 2 | 20 | 30 |

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| **Learning Objectives :** | **1. Study the concepts of Artificial Intelligence.**<br>**2. Learn the methods of solving problems using Artificial Intelligence.**<br>**3. Learn the knowledge representation techniques, reasoning techniques and search algorithms.**<br>**4. Study real-world AI based applications.** |
| **Learning Outcomes :** | **1. Familiar with Artificial Intelligence, its foundation and principles.**<br>**2. Identify appropriate AI methods to solve a given problem.**<br>**3. Examine the useful search techniques, knowledge representation techniques, learn their advantages, disadvantages and comparison.**<br>**4. Illustrate real-world AI based applications.** |
| **Pedagogy:** | **Real-world application based learning, problem-based learning, peer learning** |

| Module | Module Content | Module Wise Pedagogy Used | Module Wise Duration |
|---|---|---|---|
| **I** | **Introduction:** What is Artificial Intelligence? Definition and Examples of Artificial intelligence, Foundations of AI, history, the state of art AI today, Applications and use cases of Artificial Intelligence in real word, Advantages and disadvantages of AI, Describe and match method, Generate and Test method<br>**Intelligent Agents:** agents and environment, good behavior, nature of environment, the structure of agents.<br>**Solving Problems:** Problem solving agents, examples problems, searching for solutions<br>**Blind Methods:** Search Tree, Depth First Search and Breadth First Search Tree | Real-world application based learning, problem-based learning, peer learning | **15** |

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| **II** | **Reasoning:** British Museum Procedure, goal trees and problem-solving, rule-based expert systems.<br>**Searching algorithms:** uninformed search, informed search strategies, heuristic functions, Hill climbing, beam, optimal, branch and bound, A* Algorithms<br>**CSP, Game Playing and Logics:** Constrain Satisfaction Problems examples, Approaches to solve CSPs, Test and generate method, backtracking. Game Playing, Min Max algorithm<br>**Case Study:** AI in stock market, E-commerce, Agriculture, healthcare, social media the challenge of AI: data security | Real-world application based learning, problem-based learning, peer learning | **15** |

REFERENCE BOOKS


1. Patrik Henry Winston, Artificial Intelligence, Addison- Wesley
2. Stuart Russel and Peter Norvig, Artificial Intelligence: A Modern Approach, Pearson
3. Deepak Khemani, A First Course in Artificial Intelligence, TMH