

| COURSE CODE | COURSE TITLE | L | T | P | C |
|-------------|-------------------------|---|---|---|---|
| 1152IT124 | ARTIFICIAL INTELLIGENCE | 3 | 0 | 0 | 3 |

Course Category:

~~Foundation (0) / Program Core (1) / Program Elective (2) / Allied Elective (3) / University Elective (4) / Value Education Elective (5) / Independent Learning (6) / Industry – Higher Learning Institute Interaction (7).~~

a. Preamble :

Artificial intelligence (AI) is the [intelligence](#) exhibited by machines or software. It is also the name of the academic [field of study](#) which studies how to create computers and computer [software](#) that are capable of intelligent behavior

b.Prerequisite Courses:

Fuzzy logic,neural networks

c.Related Courses:

Robotics, soft computing

d.Course Educational Objectives :

Students undergoing this course are expected:

- Realize the intelligent human behaviors on a computer.
- AI is to make a computer that can learn, plan, and solve problems autonomously.

e. Course Outcomes:

Upon the successful completion of the course, students will be able to:

| CO Nos. | Course Outcomes | Knowledge Level (Based on revised Bloom’s Taxonomy) |
|---------|--|---|
| CO1 | Use various symbolic knowledge representation to specify domains and reasoning tasks of a situated software agent to solve a problem | K2 |
| CO2 | Use different logical systems for inference over formal domain representations, and trace how a particular inference algorithm works on a givenproblem specification | K2 |
| CO3 | Analyze a problem, and plan according to solve those problems | K2 |
| CO4 | Discuss the uncertainty by using various models | K2 |
| CO5 | Demonstrate learning from observation using various methods | K2 |

f. Correlation of COs with POs :

| COs | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| CO1 | M | | | | | | | | | | | |
| CO2 | | M | | | | | | | | | | |
| CO3 | | | M | | | | | | | | | |
| CO4 | | M | | | | | | | | | | |
| CO5 | | M | | M | | | | | | | | |

H- High; M-Medium; L-Low

g. Course Content :

UNIT I PROBLEM SOLVING

Introduction – Agents – Problem formulation – uninformed search strategies – heuristics– informed search strategies – constraint satisfaction

UNIT II LOGICAL REASONING

Logical agents – propositional logic – inferences – first-order logic – inferences in firstorder logic – forward chaining – backward chaining – unification – resolution

UNIT III PLANNING

Planning with state-space search – partial-order planning – planning graphs – planning and acting in the real world

UNIT IV UNCERTAIN KNOWLEDGE AND REASONING

Uncertainty – review of probability - probabilistic Reasoning – Bayesian networks – inferences in Bayesian networks – Temporal models – Hidden Markov models

UNIT V LEARNING

Learning from observation - Inductive learning – Decision trees – Explanation based learning – Statistical Learning methods - Reinforcement Learning

b. Learning resources

i. TEXT BOOK:

1. S. Russel and P. Norvig, “Artificial Intelligence – A Modern Approach”, Second Edition, Pearson Education, 2003.

ii. REFERENCES:

1. David Poole, Alan Mackworth, Randy Goebel, ”Computational Intelligence : a logical approach”, Oxford University Press, 2004.
2. G. Luger, “Artificial Intelligence: Structures and Strategies for complex problem solving”, Fourth Edition, Pearson Education, 2002.

3. J. Nilsson, “Artificial Intelligence: A new Synthesis”, Elsevier Publishers, 1998.

ONLINE RESOURCES

<http://www.annaunivedu.in/2012/09/cs2351-artificial-intelligence-syllabus.html#ixzz3awNdEdX2>