CSEL 581: Introduction to Artificial Intelligence and Expert Systems

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Pre-requisite:

- *Exposure to Algorithms, Data structure and MathematicalLogic.*

Objectives:

- *Explore basic concepts of AI and expertsystems.*

Outcomes:

- *Ability to explore logic for solving various AI problems.*

Module -I:Introduction ***(9hrs)***

AI – Foundations of AI, Intelligent Agents – Agents and Environments – Good Behaviour – Nature of Environments – Structure of Agents.

Module - II:Problemsolving ***(9hrs)***

Problem Solving Agents – Searching for solutions- Uninformed Search Strategies – Informed Search Strategies, heuristic functions.

Module - III:SearchAlgorithms ***(9hrs)***

Local search algorithms and optimization problems – Searching with nondeterministic Actions, Constraint satisfaction problems.

Module - IV:Expertsystems ***(9hrs)***

Expert systems – Introduction – Difference between expert system and conventional programs – Expert system organization – Architecture of Expert system – Knowledge representation techniques- Knowledge acquisition techniques - Inference Engine- Explanation systems.

Module - V: LanguagesandTools ***(9hrs)***

Working with LISP, Prolog – Apache Spark.

Text Book(s):

1. *Stuart J Russell and Peter Norvig, Artificial Intelligence – A Modern Approach, PHI Learning, Third Edition,2010.*
2. *Patterson W D, Introduction to Artificial Intelligence and Expert Systems, PHI Learning, First Edition, 1995.*

Reference Book:

1. *Elaine Rich and Kelvin Knight, Artificial Intelligence, TMH, Third Edition,2009.*