

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE MODULE OF THE SUBJECT TAUGHT FOR THE SESSION 2026-2027

(ODD SEMESTER)

Course Syllabi with CO's

Academic Year: 2026 – 2027							
Department: Computer Science and Engineering							
Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
BCS515B	ARTIFICIAL INTELLIGENCE	Elective	-	3	0	0	40
Objectives	- Learn the basic principles and theories underlying artificial intelligence, including machine learning, neural networks, natural language processing, and robotics. - Apply AI techniques to solve real-world problems, including search algorithms, optimization, and decision-making processes. - Understand the ethical, legal, and societal implications of AI, including topics such as bias, fairness, accountability, and the impact of AI on the workforce and privacy.						
Topics Covered as Per Syllabus							
Module 1:							
Introduction: What Is AI? The State of The Art.							
Intelligent Agents: Agents and environment, Concept of Rationality, The nature of environment, The structure of agents.							
Chapter 1 - 1.1, 1.4							
Chapter 2 - 2.1, 2.2, 2.3, 2.4							
Module 2:							
Problem-solving: Problem-solving agents, Example problems, Searching for Solutions							
Uninformed Search Strategies							
Chapter 3 - 3.1, 3.2, 3.3, 3.4							
Module 3:							
Problem-solving: Informed Search Strategies, Heuristic functions							

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Logical Agents: Knowledge-based agents, The Wumpus world, Logic, Propositional logic, Reasoning patterns in Propositional Logic

Chapter 3 - 3.5, 7.6

Chapter 7 - 7.1, 7.2, 7.3, 7.4

Module 4:

First Order Logic: Representation Revisited, Syntax and Semantics of First Order logic, Using First Order logic, Knowledge Engineering In First-Order Logic

Inference in First Order Logic: Propositional Versus First Order Inference, Unification, Forward Chaining

Chapter 8- 8.1, 8.2, 8.3, 8.4

Chapter 9- 9.1, 9.2, 9.3

Module 5:

Inference in First Order Logic: Backward Chaining, Resolution

Classical Planning: Definition of Classical Planning, Algorithms for Planning as State-Space Search, Planning Graphs

Chapter 9-9.4, 9.5

Chapter 10- 10.1,10.2,10.3

List of Text Books

1. Stuart J. Russell and Peter Norvig, Artificial Intelligence, 3rd Edition, Pearson, 2015

Course Outcomes

The student will be able to:

1. Explain the architecture and components of intelligent agents, including their interaction with the AI environment.
2. Apply problem-solving agents and various search strategies to solve a given problem.
3. Illustrate logical reasoning and knowledge representation using propositional and first-order logic.
4. Demonstrate proficiency in representing knowledge and solving problems using first-order logic.
5. Describe classical planning in the context of artificial intelligence, including its goals, constraints, and applications in problem-solving.

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The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Course Code: BCS515B												
List of Course Outcomes	Program Outcomes											Total
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	
CO-1	3	2	2	2	-	-	-	-	-	-	2	11
CO-2	3	3	3	2	-	-	-	-	-	-	2	13
CO-3	3	3	2	2	-	-	-	-	-	-	2	12
CO-4	3	3	3	2	-	-	-	-	-	-	2	13
CO-5	3	3	3	2	-	-	-	-	-	-	2	13
Total	15	14	13	10	-	-	-	-	-	-	10	62

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution 0 = No Contribution

The Correlation of Course Outcomes (CO's) and Program Outcomes (PSO's)

Subject Code: BCS515B		Course Title: ARTIFICIAL INTELLIGENCE	
List of Course Outcomes	Program Specific Outcomes		Total
	PSO-1	PSO-2	
CO-1	2	-	1
CO-2	2	-	2
CO-3	2	-	1
CO-4	2	-	2
CO-5	2	-	2
Total	8	-	8

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution 0 = No Contribution