



National Computing Education Accreditation Council
NCEAC



NCEAC.DOC.001-E

COURSE DESCRIPTION

NAME OF INSTITUTION	Lahore Garrison University
PROGRAM (S) TO BE EVALUATED	Computer Science , Spring 2022

Course Description :

Course Code	CSC363																							
Course Title	Artificial Intelligence																							
Credit Hours	3+1																							
Prerequisites by Course(s) and Topics																								
Assessment Instruments with Weights (homework, quizzes, midterms, final, programming assignments, lab work, etc.)	SESSIONAL (Quizzes, Assignments, Presentations) =25 % Midterm Exam =25 % Final Exam = 50%																							
Course Coordinator																								
URL (if any)																								
Current Catalog Description																								
Textbook (or Laboratory Manual for Laboratory Courses)																								
Reference Material																								
Course Goals																								
Course Learning Outcomes (CLOs):	<table><tr><td>At the end of the course the students will be able to:</td><td>Domain</td><td>BT Level*</td></tr><tr><td>1-Understand historical perspective of AI and its foundations.</td><td>BT</td><td>2</td></tr><tr><td>Understand the basic principles of AI toward problem solving, inference, perception, knowledge representation, and learning.</td><td>BT</td><td>2</td></tr><tr><td>Implement classical and local search techniques as well as self- learning algorithms.</td><td>BT</td><td>3</td></tr><tr><td>Analyze the outcomes of classical and local search techniques as well as self-learning algorithms to specific set of problems.</td><td>BT</td><td>4</td></tr><tr><td>Evaluate the performance of AI techniques under particular problem domain.</td><td>5</td><td></td></tr><tr><td colspan="3">* BT= Bloom's Taxonomy, C=Cognitive domain, P=Psychomotor domain, A= Affective domain</td></tr></table>			At the end of the course the students will be able to:	Domain	BT Level*	1-Understand historical perspective of AI and its foundations.	BT	2	Understand the basic principles of AI toward problem solving, inference, perception, knowledge representation, and learning.	BT	2	Implement classical and local search techniques as well as self- learning algorithms.	BT	3	Analyze the outcomes of classical and local search techniques as well as self-learning algorithms to specific set of problems.	BT	4	Evaluate the performance of AI techniques under particular problem domain.	5		* BT= Bloom's Taxonomy, C=Cognitive domain, P=Psychomotor domain, A= Affective domain		
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Topics Covered in the Course, with Number of Lectures on Each Topic (assume 15-week instruction and one-hour lectures)	Week	Lecture	Topics Covered
	Week 1	1	Introduction to Artificial Intelligence.
		2	Foundations and history of AI.
	Week 2	3	Types of AI, Basic components of AI.
		4	Artificial agents, types of agents.
	Week 3	5	Agent's environment, types of environments.
		6	State space graphs and search trees, solving problems by searching, problem solving agents.
	Week 4	7	Uniformed search: Depth-First search with examples.
		8	Uniformed search: Breadth-First search with examples.
	Week 5	9	Uniformed search: Uniform Cost with examples.
		10	Informed Search: Greedy search.
	Week 6	11	Informed Search: A* search.
		12	Beyond classical search: Hill-climbing search.
	Week 7	13	Beyond classical search: random restart hill climb search, Simulated annealing.
		14	Beyond classical search: local beam search.
	Week 8	1 hours	Mid Term
	Week 9	15	Beyond classical search: Genetic algorithm.
		16	Revision.
	Week 10	17	Adversarial Search: Minimax algorithm.
		18	Adversarial Search: Efficiency of Minimax Algorithm, Optimal decisions in games.
	Week 11	19	Adversarial Search: alpha-beta pruning.
		20	Constraint satisfaction problem: Part I.
	Week 12	21	Constraint satisfaction problems: Part II
		22	Logical agents: Knowledge-based agents
	Week 13	23	Logical agents: Propositional logic
		24	Logical agents: Forward chaining
	Week 14	25	Logical agents: Backward chaining
		26	First-order logic: representation revisited, Knowledge engineering in first-order logic
	Week 15	27	First-order logic: Knowledge engineering in first-order logic
		28	Learning: Regression and Classification
	Week 16	29	Learning from examples: Artificial Neural Networks
		30	Advanced Applications
	Week 17	2 hours	Final Term
Laboratory Projects/Experiments Done in the Course			
Programming Assignments Done in the Course			

Instructor Name
Instructor Signature
Date