Artificial Intelligence

Classroom: 15A-01
Sessions Schedule: Friday from 10:30 to 13:30
Schedule for Exam: Thursday: 08h00 to 10h00

#	Date		Activity Scheduled	Homework
1	May	5	Fundamentals of Artificial Intelligence: Learning Community, Syllabus, Schedule. Introduction to AI. Definitions and History	
2	May	12	Techniques for solving AI problems and phases of development: Goal and Data Driven Search. Generate and Test. Blind, Exhaustive Search: Breadth First, Depth First	
3	May	19	Techniques for solving AI problems and phases of development: Heuristic Search, Hill Climbing, Simulated Annealing, Best First. Algorithms A and A*. Admissibility Theorem. Backtrack Algorithm.	#1
4	June	2	Knowledge Representation: Knowledge Representations Schemas. Logic, Semantic Nets, Frames, Rules. Logic and Propositional Calculus. Predicates	
5	June	9	Artificial reasoning and inference: First Order Calculus. Semantics in Predicate Calculus. Unification, Inference rules: Modus Ponens, Tolens, EA, IA, UI, EI. Applications.	
6	June	16	The artificial Inference Process: Resolution Theorem, Applications and Exercises.	#2
7	June	23	The artificial Inference Process:Management of Uncertainty: Certainty Theory. Confidence Factors. Classic Probabilistic Methods and Bayes. Fuzzy Theory, Introduction and Definitions.	Project proposals
8	June	29	First Examination (15A-03)	
9	July	7	The artificial Inference Process: Management of Uncertainty: Fuzzy Logic, Variables and Linguistic Modifiers.The Extension Principle. Fuzzy Systems and applications	Proposals feedback
10	July	14	The artificial Inference Process: Management of Uncertainty: Cognitive Maps and Applications. Production Systems: Rule representation, Rule Based Systems, Advantages and Disadvantages	#3
11	July	21	Knowledge Based Systems: Introduction to Expert Systems, definition, Characterization and Structure. Intelligent System Development Cycle. Examples and applications	
12	July	28	Machine Learning: Introduction, Regression, Classification. Neural Nets, Biological, Artificial, the Perceptron, Transfer Functions	#4
13	August	4	Machine Learning: Neural Nets Topologies, Learning and Use of Neural Nets, Applications	
14	August	18	Genetic Algorithms: What are they?, Algorithm Structure, Representation Methods.. Methods for selecting the individuals and exchange, Advantages and Limitations, Applications.	
15	August	25	Final Projects due	
16	August	31	Second Examination (15A-03)	
17	September	14	Third Examination (15A-03)	

Homework and projects due
Exams
No class