

Course Name	Course Code	semester	T + P	Credit	ECTS
Artificial neural networks			3+0	3	6

Prerequisite Courses	None
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Language of Course	Turkish
Course class	Technical Elective
Coordinator of Course	
Instructor	
Course Assistant	
Objective of Course	This course is aimed at general purpose students; various artificial neural network approaches, basic concepts, solutions of problems requiring search, ways of expressing information, learning algorithms, knowledge and skills in advanced artificial intelligence.
Course Learning Output	Students who have successfully completed this course: <ul style="list-style-type: none"> • Describe the concepts of artificial neural networks, • Design intelligent programs, • Describe the various applications of artificial neural networks.
Course Contents	Information and inquiry; learning theory, learning types, artificial neural networks, uncertainty, probability, planning, natural language processing, image, low level image and classification, genetic algorithms, advanced artificial intelligence applications; learning, image detection, questioning in case of uncertainty.

Weeks	Topics
1	Introduction to artificial neural networks
2	Artificial intelligence approaches and basic concepts
3	Artificial neural networks and basic elements
4	Multi-layer artificial neural networks and backpropagation algorithm
5	Machine Learning Algorithms
6	Algorithms classification and evaluation
7	Blind Search Algorithms
8	MIDTERM
9	Intuitive Search Algorithms
10	Local Search Algorithms
11	Introduction to genetic algorithms and basic concepts
12	Sample problem solutions with genetic algorithms
13	Application programs for artificial intelligence algorithms
14	Sample applications with artificial intelligence algorithms
15	FINAL EXAM

General Sufficiency
It is important for students to be able to design algorithms with artificial neural networks and to develop software with this inland programming language.
References
<ul style="list-style-type: none">• Jiawei Han, Micheline Kamber, Data Mining: Concept and Techniques, 2001• Mitchell Tom M., Machine Learning 1997• Cawsey, A: The Essence of Artificial Intelligence, Prentice-Hall, 1998• Russell S J & Norvig P, Artificial Intelligence: A Modern Approach, (2 nd edition) (ISBN 0-13-080302). Prentice-Hall Inc., 2003• Winston P H, Artificial Intelligence (3rd Edition) (ISBN 0-201-533-774). Addison Wesley 1992• Rich E & Knight K, Artificial Intelligence (2nd Edition), (ISBN 0-070-522-634). McGraw Hill 1991
Assessment
Midterm exam: 40%, Final exam: 60%; Project or homework evaluations can be made at the beginning of the semester.