

İSTANBUL KÜLTÜR UNIVERSITY
DEPARTMENT OF INDUSTRIAL ENGINEERING
IE 014 DECISION SUPPORT AND ARTIFICIAL INTELLIGENCE
SPRING 2011

Instructor: Assist. Prof. Fadime Üney-Yüksektepe

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Class hours: Thursday 15:00 – 17:45

Room: 4B-03-05

URL address for the course material: <http://ie.iku.edu.tr/coursehome.asp?CourseID=599&PeriodID=45>

Textbook: Michael Negnevitsky, *Artificial Intelligence: A Guide to Intelligent Systems*, Second Edition, Addison Wesley, (2005).

Course Description: This course gives an introduction to general structure of artificial intelligence and artificial intelligence's algorithms. By the help of this course, students will be able to develop a practical understanding of what intelligent systems can and cannot do, discover which tools are most relevant for your task and how to use these tools.

Course objectives:

- To present the basic concepts, techniques and algorithms of artificial intelligence.

Evaluation

Project 1 25%, Project 2 25%, Final exam 50%

Project Guidelines

Course project will be done individually. Students should read and analyse an artificial intelligence application article and make a presentation in the class. All reports should be typed with a maximum of 10 pages (1.5 line-spacing, 11 or 12 pt. font size).

COURSE OUTLINE

Week	Date	Topic
1	February 10	Chapter 1 Introduction to knowledge-base intelligent systems
2	February 17	Chapter 2 & 3 Rule-based expert systems, Uncertainty management in rule-based expert systems
3	February 24	Chapter 4 Fuzzy expert systems: Fuzzy logic, Fuzzy Expert Systems: Fuzzy Interface
4	March 3	Chapter 5 Frame-based expert systems
5	March 10	Chapter 6 Artificial neural networks: Supervised learning
6	March 17	Chapter 6 Artificial neural networks: Unsupervised learning
7	March 24	Chapter 7 Evolutionary Computation: Genetic algorithms
8	March 31	PROJECT PRESENTATIONS
9	April 7	Chapter 7 Evolutionary Computation: Evolution strategies and genetic programming
10	April 14	Chapter 8 Hybrid intelligent systems: Neural expert systems and neuro-fuzzy systems; Hybrid intelligent systems: Evolutionary neural networks and fuzzy evolutionary systems
11	April 21	Chapter 9 Knowledge engineering: Building expert and fuzzy systems
12	April 28	Chapter 9 Knowledge engineering: Building neural network based systems
13	May 5	Chapter 9 Data mining and knowledge discovery
14	May 12	PROJECT PRESENTATIONS