Hashemite University
College of Engineering
Department of Mechatronics
Artificial Intelligence 110405532
(3 Credit Hours)

Instructor	
Name	Eng. Fadwa Momani
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Office:	
Office hours:	Announced on the office door

Grading info	
Mid	30
Project	30
HW	0
Final	40

Class Info	
Days	**Mon.+ Wed.**
Time	12:30-2:00
Location	

Course	
Course Number: 110405532	
Prerequisite:	(110405331)
Textbook:	Michael Negnevitsky (2005). Artificial Intelligence: A guide to intelligent systems, 2nd edition. Addison Wesley .
Course Description (as in the catalog):	Introduction to intelligent systems and their application in modeling and control, basic concepts of fuzzy logic elements, design, tuning and operation, basic concepts of neural network elements, architecture, and training, basic concepts of genetic algorithms.
Specific Outcomes of Instruction (Course Outcomes):	CLO (1) : Understand history, definition and applications of intelligent systems in engineering.(j) CLO (2): Build and analyze a fuzzy logic system. (a, e, g, k) CLO (3): Analyze a neural network system (a, k) CLO (4): Analyze a hybrid Artificial intelligent systems (a, k) CLO (5): Understand the basic concepts of genetic algorithms (k)
Important material	
References:	• Timothy J. Ross, Fuzzy logic with engineering applications, Wiley, 2004, Second Edition . • Fausett, Laurene , Fundamentals of neural networks : architectures, algorithms, and applications , Prentice-Hall, 1994 . • S. Russell and P. Norvig Artificial Intelligence: A Modern Approach Prentice Hall, 2003, Second Edition

Major Topics Covered and Schedule in Weeks:

Topic	**# Weeks**	**# Contact hours**
1. Introduction (Chapter 1)	1	3
2. Fuzzy expert systems (Chapter 4)	2,3,4	9
3. Fuzzy expert systems (Matlab)	5,6	6
4. Artificial neural networks (Chapter 6)	7,8,9	9
5. Artificial neural networks (Matlab)	10,11	4
6. Mid exam (7-11-2018, Wednesday)	11	1
7. Hybrid intelligent systems (Chapter 8)	11, 12,13	6
8. Hybrid intelligent systems (matlab)	13	1
9. Basic concepts of genetic algorithms	14,15	5
10. Project presentation and evaluation	15,16	4
Total	16	48

Course Policy

Attendance is mandatory and absence is allowed up to 15% lectures

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Student Outcomes (SO) Addressed by the Course:

#	*Outcome Description*	*Contribution*
(a)	an ability to apply knowledge of mathematics, science, and engineering	***M***
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	
(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	
(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify, formulate, and solve engineering problems	***L***
(f)	an understanding of professional and ethical responsibility	
(g)	an ability to communicate effectively	***L***
(h)	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i)	a recognition of the need for, and an ability to engage in life-long learning	
(j)	a knowledge of contemporary issues	***L***
(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	***H***

H=High, **M**= Medium, **L**=Low