OSTIM TECHNICAL UNIVERSITY
FACULTY OF ENGINEERING
SOFTWARE ENGINEERING
UNDERGRADUATE COURSE

COURSE SYLLABUS FORM
2021-2022 FALL

YZL 401 Machine Learning and Artificial Intelligence

Course Name	Course Code	Term	Hour	Practice	Lab	Credit	ECTS
Machine Learning and Artificial Intelligence	YZL 401	7	3	0	0	3	4

Language of the Course	English
Type of Course	Mandatory
Course Level	Undergraduate
Method of Teaching	Face-to-face
Course Learning and Teaching Techniques	Lecture, Q/A, Homework

Purpose of the Course

The aim of this course is to give students the examination of different aspects of Artificial Intelligence.

Learning Outcomes

Students who successfully complete this course;

- They will recognize the concepts of artificial intelligence,
- will be able to use artificial intelligence algorithms,
- Will be able to design artificial intelligence systems that try to do a job better using learning,
- Will be able to use logic as a way of representing information in artificial intelligence systems.

Course Content

This course introduces Artificial Intelligence. In this course, theories and algorithms, which are the most basic elements of computational intelligence, are examined.

Weekly Plan and Related Preparation Studies

Week	Subjects
1	Introduction to Artificial Intelligence
2	Introduction to Data Mining
3	Data Processing Methods
4	Decision Trees
5	Artificial neural networks - 1
6	Artificial neural networks - 2
7	Fuzzy Logic - 1
8	Midterm Exam
9	Fuzzy Logic - 2
10	Artificial Immune Systems
11	Genetic Algorithms
12	K-Nearest Neighbour Algorithm
13	Naive Bayes
14	K-Means
15	Project Presentation
16	Final Exam

Resources (Textbook and supplementary book)

1. Michael Negnevitsky, Artificial Intelligence: A Guide to Intelligent Systems (3rd Edition) 3rd Edition,
2. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, Third Ed., Prentice Hall, 2010, ISBN10: 0132124114.

Evaluation System

Studies	Number	Contribution
Attendance		
Lab		
Application		
Field Study		
Course Specific Internship (if applicable)		
Quizzes/Studio/Critical		
Homework		
Presentation		
Projects		
Report		
Seminar		
Midterm Exams/Midterm Jury	1	%40
General Exam/Final Jury	1	% 60
Total		**% 100**
Contribution of Mid-Semester Studies to Success Grade		% 50
Contribution of End of Semester Studies to Success Grade		% 50
Total		**% 100**

Course Category

Basic Vocational Courses	
Specialization/Field Courses	x
Support Lessons	
Communication and Management Skills Lessons	
Transferable Skills Lessons	

Course Learning Outcomes and Program Qualifications

No	Program Qualifications / Outcomes	Contribution Level				
		1	2	3	4	5
1	Ability to apply mathematics, science and engineering				x	
2	Ability to design and conduct experiments and to analyze and interpret experimental results.					
3	Ability to design a system, component, and process and according to specified requirements.				x	
4	Ability to work in an interdisciplinary team.				x	
5	Ability to identify, formulate and apply engineering problems.					x
6	Identifies, defines, formulates, solves complex Software Engineering problems and chooses and applies analysis and modelling methods suitable for this purpose.				x	
7	Develops, selects, uses modern techniques and tools necessary for the analysis and solution of complex problems encountered in Software Engineering applications and uses information technologies effectively.				x	

ECTS/Workload Table

Activities	Count	Duration (Hour)	Total Workload
Lesson hours (Including the exam week: 16 x total lesson hours)	16	3	48
Lab			
Application			
Course Specific Internship			
Field Study			
Out of Class Study Time			
Presentation/Seminar Preparation			
Projects			
Reports			
Homework			
Quizzes/Studio Critic			
Preparation Time for Midterm Exams/Midterm Jury	1	30	30
Preparation Time for the General Exam/General Jury	1	42	42
Total Workload	**(ECTS 120/30 = 4)**		**120**