

School of Communication / New Media and Communication Systems

2024 - 2025 Academic Year

DATA MINING

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
DATA MINING	YMİ4113728	Fall Semester	1+2	2	5
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Elective				
Course Coordinator	Assoc.Prof. Başak GEZMEN				
Name of Lecturer(s)	Assist.Prof. Alaattin ASLAN				
Assistant(s)					
Aim	To learn the basic concepts of data mining and to obtain useful information by drawing meaningful conclusions from the data.				
Course Content	This course contains; Data Science, Getting to know the course and explaining the content, Definition of data, working with datasets, Manipulating Datasets with the Pandas Library, Analysis and Summarization of Data, Data Visualization definition and key components, Exploratory Data Analysis techniques, Application: Data Collection, Exploratory Data Analysis, Application: Data Visualization applications, Machine learning fundamentals, machine learning algorithms, Application: Linear Regression, Classification Problems, Application: Classification Application, Deep learning basic concepts.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
Understands Data Collection methods.			16, 6, 9	A, E	
Performs Data Sets Management analysis.			16, 6, 9	A, E	
Analyzes Data Visualization categories			16, 6, 9	E	
Teaching Methods	16: Question - Answer Technique, 6: Experiential Learning, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, E: Homework				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Data Science, Getting to know the course and explaining the content	Reading the topics mentioned from relevant sources			
2	Definition of data, working with datasets	Reading the topics mentioned from relevant sources			
3	Manipulating Datasets with the Pandas Library	Reading the topics mentioned from relevant sources			
4	Analysis and Summarization of Data	Reading the topics mentioned from relevant sources			
5	Data Visualization definition and key components	Reading the topics mentioned from relevant sources			
6	Exploratory Data Analysis techniques	Reading the topics mentioned from relevant sources			
7	Application: Data Collection, Exploratory Data Analysis	Reading the topics mentioned from relevant sources			
8	Application: Data Visualization applications	Reading the topics mentioned from relevant sources			
9	Machine learning fundamentals	Reading the topics mentioned from relevant sources			
10	machine learning algorithms	Reading the topics mentioned from relevant sources			
11	Application: Linear Regression	Reading the topics mentioned from relevant sources			
12	Classification Problems	Reading the topics mentioned from relevant sources			
13	Application: Classification Application	Reading the topics mentioned from relevant sources			
14	Deep learning basic concepts	Reading the topics mentioned from relevant sources			
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			

Resources
Florin Gorunescu. Data Mining- Concepts, Models and Techniques. Springer Publishing, 2011
Graham J. Williams Simeon J. Simoff, Data Mining Theory, Methodology, Techniques, and Applications, Springer, 2006
Joel Grus , Data Science from Scratch: First Principles with Python, O'Reilly Media, 2019