



T.C.

ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ

FACULTY OF SCIENCES

MATHEMATICS AND COMPUTER SCIENCES DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Data Mining	821617010

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
7	3	0		5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	X			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	This course introduces basic concepts, tasks, methods, and techniques in data mining. The emphasis is on various data mining problems and their solutions
Short Course Content	Data Mining

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Understand the fundamental concepts and techniques of data mining.	1, 2, 5	1, 6, 7	A
2	Students will develop a broad perspective in the field of data mining by learning its topics.	2, 3,4	1, 2, 5	A
3	Students will be able to analyze data sets using data mining techniques.	3, 4, 5	6, 10	A
4	Students will develop solutions to real-world data problems using data mining.	4, 5, 6	6, 10	A

Main Textbook	W Han, J. and Kamber, M., Data Mining: Concepts and Techniques, 2nd Edition, Morgan Kaufmann, 2006 .
Supporting References	P. Tan, M. Steinbach and V. Kumar, Introduction to Data Mining, Addison Wesley, 2006.
Necessary Course Material	None

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Course Schedule	
1	Introduction
2	Data preprocessing
3	Classification
4	Decision trees
5	Bayesian
6	Backpropagation
7	Rule-based classification
8	Midterm Exam
9	kNN
10	YSA
11	Clustering
12	Hierarchical clustering
13	Density-based methods
14	Cluster evaluation
15	Association rule mining
16	Final Exam
17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	20	20
Final Exam	1	2	2
Studying for Final Exam	1	30	30
Total workload			138
Total workload / 30			4,6
Course ECTS Credit			5

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Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	The ability to apply knowledge of Mathematics and Computer Sciences	2
2	To have sufficient theoretical and practical knowledge of Mathematics at international level	3
3	The ability of describing, modelling and solving mathematical problems in Mathematics and related subjects	2
4	The skill to solve and design a problem process in accordance with a defined target	2
5	Skills to analyze data, interpret and apply to other data and using these data on computer	3
6	The skill to use the modern techniques and computational tools needed for mathematical applications	3
7	The skill to make teamwork within the discipline and interdisciplinary	3
8	The ability to improve oneself by following the developments in other modern, scientific, and technological subjects as well as Mathematics and Computer Sciences	2
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking	3
10	The skill to have professional and ethical responsibility	2
11	The skill to have consciousness for quality issues and scientific research	2
12	The skill to be sensitive to environmental issues related to problems and development of living area and consistent in social relations	2
13	Ability to solve problems in the working life faced to find an appropriate algorithms via mathematical modeling and to write computer programs	2
14	The skill to develop design of software systems at different complex levels	2
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning	3

LECTUTER(S)				
Prepared by	Doç. Dr. Özer Çelik			
Signature(s)				

Date:06.06.2024

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