Course Description

Course Code	YS 417
Course Name	INTRODUCTION TO DATA MINING
Prerequisite Courses	
Language of the Course	The English
Course Coordinator	
Instructor(s)	
Course Assistants	
The aim of the course	The course is designed to provide conceptual and algorithmic aspects of data mining techniques by introducing data mining problems. These problems can be listed as classification, clustering, anomaly detection and association rule mining.
Course Content	Introduction, what is data?,data analysis, association rule mining, classification, clustering, anomaly detection, spatial and spatio-temporal data analysis, other data mining subjects

Weekly Course Content

Week 1	Introduction, what is the data?
Week 2	Data analysis
Week 3	Data analysis
Week 4	Association analysis
Week 5	Association analysis
Week 6	Classification
Week 7	Classification
Week 8	Midterm exam.
Week 9	Clustering
Week 10	Anomaly detection
Week 11	Anomaly detection
Week12	Data mining applications
Week 13	Data mining applications
Week 14	Other data mining topics
Week 15	Final exam.

Course Learning Outcomes

1	The ability to define data mining problems
2	The ability to use algorithms to solve data mining problems
3	The ability to use clustering algoritms
4	The ability to use classification algoritms
5	The ability to use anomaly detection algoritms
6	The ability to use association rule mining algoritms

Contribution of the Course to Program Qualifications

		Contribution Level
01	The student will have the ability to apply analytical approach, mathematics and science knowledge in software and engineering issues.	2
02	The student will have the ability to identify, define, formulate and solve a problem in software and computer systems.	2
03	The student will have gains scientific research skills in software and engineering problems, has the ability to design a system, part or process.	3
04	The student will have the ability to use the design capability, techniques and tools required for engineering applications.	3
05	The student will have the ability to design, implement and interpret experimental work and software projects by analyzing the results.	2
06	The student will have the ability to work between disciplines and teamwork.	3
07	The student will have the ability to work in international environments and adapt to different cultures.	3
08	The student will have verbal and written communication skills in Turkish and English.	3
09	The student will have the awareness of the necessity of lifelong learning and the ability to realize it.	2
10	The student will gain knowledge of legal issues with the awareness of professional and ethical responsibility.	3
11	The student will have managerial skills (leadership, organization, time and risk management, quality awareness, efficiency, etc.).	3
12	The student will have the ability to participate in social activities, to acquire regular sports habits and to use time in the best way.	4
13	The student will have the ability to find unusual ways and produce projects.	2
14	The student will have professional self-confidence, being an entrepreneur and taking initiative.	3
15	It is sensitive about the problems of the age and looks after the national interests.	3

ECTS WORKLOAD

	Number	Duration (hours)	Number*Duration
Face to face education	14	2	28
Out-of-class study time (pre-study, reinforcement)	14	1	14
Homeworks	4	5	20
Presentation / Seminar preparation	0	0	0
Quizzes	0	0	0
Preparation for midterm exams	1	8	8
midterm exams	1	2	2
Project (Semester assignment)	0	0	0
Lab	0	0	0
field work	0	0	0
Preparation for the final exam	1	10	10
Semester final exam	1	2	2
Research	0	0	0
TOTAL WORKLOAD			**84**
ECTS			**3**

Evaluation

SEMESTER EVALUATION	Number	Contribution Percentage
Midterm	1	20
Quiz	0	0
Homework	4	20
SEMESTER TOTAL		**40**
Contribution rate of mid-term evaluations to success		40
Contribution rate of the final exam to success		60
GRAND TOTAL		**100**

RESOURCES	
Textbook	Introduction to Data Mining, P. N. Tan, M. Steinbach, V. Kumar, Addison Wesley
Helpful Resources	