COURSE INFORMATON					
Course Title	*Code*	*Semester*	*L+P+L Hour*	*Credits*	*ECTS*
Data Mining	CIS 517		3+0+0	3	10

Prerequisites	-

Language of Instruction	English
Course Level	Master's Degree
Course Type	Elective
Course Coordinator	Assoc. Prof. Dr. Aşkın Demirağ
Instructors	Assoc. Prof. Dr. Aşkın Demirağ
Assistants	-
Goals	Fundamentals of data mining, data, information and knowledge, knowledge discovery in databases, the traditional statistical methods, neural networks, decision trees, Bayesian theorem, association rules, data warehouses, business applications, and advanced techniques to know and understand.
Content	The course provides an overview of leading data mining methods and applications. The topics covered include: data, information and knowledge, knowledge discovery in databases, traditional statistics, artificial neural networks, decision trees, Bayesian learning, association rules, data warehousing, commercial tools, feature selection and advanced techniques.

Learning Outcomes	**Program Learning Outcomes**	**Teaching Methods**	**Assessment Methods**
Have a good knowledge about the concept of data mining.	7,8	1,2,3	A,B,C
What is data mining models and techniques to learn.	7,8	1,2,3	A,B,C
Implements descriptive statistical techniques on statistical a package program.	7,8	1,4	A,E
Knows about forecast models.	7,8	1,4	A,E
Knows about classification analysis.	7,8	1,4	A,E
Knows about association rules.	7,8	1,4	A,E
Have a good knowledge about web mining.	7,8	1, 4	A,C,E

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Discussion, 4: Lab Work
Assessment Methods:	A: Testing, B: Presentation C: Homework D: Project E: Laboratory

COURSE CONTENT		
Week	**Topics**	**Study Materials**
1	Data mining concepts	
2	Data mining models and techniques	
3	Data warehouses and OLAP	

4	Data warehouses and OLAP
5	Descriptive statistical techniques
6	Decision trees
7	Forecast models
8	Midterm Exam
9	Cluster analysis
10	Link discovery analysis
11	Link discovery analysis
12	Web mining
13	Presentations
14	Presentations
15	Final Exam

RECOMMENDED SOURCES	
Textbook	DATA MINING Concepts and Techniques, Jiawei HAN- Micheline KAMBER, Morgan Kaufman Pub.,2001
Additional Resources	DATABASE SYSTEMS, Thomas CONNOLLY-Carolyn BEGG, Pearson Education, 4. Edition

MATERIAL SHARING
Documents
Assignments
Exams

ASSESSMENT		
IN-TERM STUDIES	**NUMBER**	**PERCENTAGE**
Mid-term	1	70
Project	1	20
Homework	1	10
	Total	100
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		40
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		60
	Total	100

COURSE CATEGORY	Expertise/Field Courses

COURSE'S CONTRIBUTION TO PROGRAM							
No	Program Learning Outcomes	Contribution					
		1	2	3	4	5	
1	Information Systems graduates have the knowledge and the skills to design and develop the complete systems for multi-media visual user interface.			X			

2	Information Systems graduates have advanced the knowledge and skills to design, develop and install the application systems for multimedia.	X	
3	Information Systems graduates have the knowledge and the skills to design, develop and apply algorithms and data structures to solve the basic problems of information processing, within the framework of discrete mathematics.	X	
4	Information Systems graduates have the knowledge and the skills to design and develop computer applications, based on user specified requirements, using modern structured development tools and install them on various hardware platforms and deploy their usage.		x
5	Information Systems graduates have the knowledge and the skills to design and develop computer applications, based on user specified requirements, using modern object-oriented development tools and install them on various hardware platforms and deploy their usage.	x	
6	Information Systems graduates know the logic of computer operating systems, the basic set of system commands, how to control access to system resources by users of different departments and how to monitor the running of jobs in the system.	x	
7	Information Systems graduates have the knowledge and the skills to design and develop data models serving different requirements, database applications that would access and process data using various types of software, including queries, reports and business applications.		x
8	Information Systems graduates have the knowledge and the skills to design and develop business applications that would provide data access, modification and processing for data kept in enterprise database systems.		x
9	Information Systems graduates have the knowledge about computer networks, and have the skills to design, develop and monitor computer networks, how to configure them and how to maintain their performance.	x	
10	Information Systems graduates have the knowledge and the skills to design and develop visual user interfaces for the web, web-based applications for n-tier client/server configurations, how to deploy them in enterprises.	x	

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Including the exam week: 16x Total course hours)	14	3	42
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Homework	10	10	100
Quizzes	10	1	10
Midterm	**1**	10	10
Final	**1**	10	10
Total Work Load			242
Total Work Load / 25 (h)			9.6
ECTS Credit of the Course			10