

Course Description	
Course Code	YZ 413
Course Name	NON-RELATIONAL DATABASES
Prerequisite Courses	none
Language of the Course	The English
Course Coordinator	
Instructor(s)	
Course Assistants	
The aim of the course	The aim of the course is to let the students to know and understand database concepts, to learn the concepts of the relational model, to learn and use SQL statements, to realize the conceptual modeling, to iterate the conceptual model to relational model using database modeling principles, to learn database normalization theory and its effect to database design, to learn and apply query processing, optimization and database tuning, to realize SQL Server and use it, to supplies data integrity, to learn index theory and management, to define the trigger and use
Course Content	Basic concepts of database, data models, relational data model, components and characteristics of the relational data model, entity-relational model, entity-relational diagrams, transaction from e-r diagram to tables, normalization, tables and its characteristics, SQL Server software and its components, design and implementation physical database, data integrity, constraints, structured query language, simple queries, advanced queries, views, index theory and management, stored procedures, triggers, backup and back from backup

Weekly Course Content	
Week 1	Introduction, Overview, and History of NoSQL Database
Week 2	The Definition of the Four Types of NoSQL Database
Week 3	Column-oriented NoSQL databases using Apache HBASE
Week 4	NoSQL Key/Value databases using MongoDB
Week 5	NoSQL Key/Value databases using Riak
Week 6	Graph NoSQL databases using Neo4J
Week 7	NoSQL database development tools and programming languages
Week 8	Midterm exam.
Week 9	Course Summary and Future Trends for NoSQL databases
Week 10	Stored procedures
Week 11	Query applications
Week12	Advanced queries
Week 13	Triggers
Week 14	Working with views, Index theory and management
Week 15	Final exam.

Course Learning Outcomes	
1	understand the fundamental concepts of database systems.
2	understand the functions of database management system.
3	understand the database systems design and methodology.
4	understand current database system technologies

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.	5
02	The student will have the ability to identify, define, formulate and solve a problem in software and computer systems.	5
03	The student will have gains scientific research skills in software and engineering problems, has the ability to design a system, part or process.	5
04	The student will have the ability to use the design capability, techniques and tools required for engineering applications.	4
05	The student will have the ability to design, implement and interpret experimental work and software projects by analyzing the results.	5
06	The student will have the ability to work between disciplines and teamwork.	4
07	The student will have the ability to work in international environments and adapt to different cultures.	5
08	The student will have verbal and written communication skills in Turkish and English.	4
09	The student will have the awareness of the necessity of lifelong learning and the ability to realize it.	5
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.).	5
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.	5
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.	5

ECTS WORKLOAD			
	Number	Duration (hours)	Number*Duration
Face to face education	14	2	28
Out-of-class study time (pre-study, reinforcement)	3	5	15
Homeworks	2	7	14
Presentation / Seminar preparation	3	1	3
Quizzes	0	0	0
Preparation for midterm exams	1	7	7
midterm exams	1	2	2
Project (Semester assignment)	1	8	8
Lab	0	0	0
field work	0	0	0
Preparation for the final exam	1	15	15
Semester final exam	1	2	2
Research	0	0	0
TOTAL WORKLOAD			94
ECTS			3

Evaluation			
SEMESTER EVALUATION		Number	Contribution Percentage
Midterm		1	20
Quiz		0	0
Homework		2	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	Fundamentals of Computer Engineering (Bookin Turkish), Papatya press, Editor: Rifat ÇÖLKESEN	
Helpful Resources	In addition lesson content is compiled from multiple sources	