HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Database Management Systems				
CODE: CENG212	**SEMESTER:** SPRING			
LANGUAGE: ENGLISH	**TYPE:** COMPULSORY			
PRE-REQUISITES: - **CO-REQUISITES:** -	**THEORY**	**PRACTICAL**	**CREDIT**	**ECTS**
WEEKLY HOURS:	3	2	4	6

CONTENT OF THE COURSE: Database concepts. Relational model, relational algebra, queries. Application development. Database design, normalization, entity-relationship model. Concurrency, transactions, locking. Object-oriented databases, object/relational mapping, XML data model and queries.

OBJECTIVE OF THE COURSE:

- Learning how to use database management systems.
- Learning how to develop applications that use database management systems.
- Learning how to model data and how to implement this model.
- Learning different data modeling approaches.
- Acquiring team work and presentation skills.

WEEKLY SCHEDULE	
Week	**Topics**
1	Rationale behind Database Systems
2	Database System Architecture
3	Database Modeling using the Entity-Relationship Model
4	Data Models and Data Sublanguages
5	Data Models and Data Sublanguages
6	Data Models and Data Sublanguages
7	Midterm I
8	The Hierarchical Model
9	Object-Oriented Databases
10	Distributed Databases
11	Midterm II
12	Database Management Issues
13	Database Management Issues
14	New Requirements For Database Systems

TEXTBOOK: Connolly, T. M. and C. E. Begg Database systems : a practical approach to design,implementation, and management. Boston ; London, Addison-Wesley.

REFERENCE BOOKS:

- Garcia-Molina, H., J. D. Ullman, et al. (2009). Database systems : the complete book. Upper Saddle River, N.J., Pearson Prentice Hall.
- Date CJ, *An Introduction to Database Systems* 8th Edition, Addison Wesley, 2004

- Elmasri, R. and S. Navathe (2007). Fundamentals of database systems. Boston,Pearson/Addison Wesley.

EVALUATION SYSTEM:		
IN-TERM STUDIES	**QUANTITY**	**PERCENTAGE (%)**
Midterm Exam	2	20
Homework	2	15
Laboratory works	13	15
Quiz	1	10
Final Exam	1	40
TOTAL	19	100
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	18	60
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	40
TOTAL	19	100

COURSE CATEGORY:	**PERCENTAGE (%)**
Mathematics and Basic Sciences	30
Engineering	30
Engineering Design	40
Social Sciences	0

TABLE OF ECTS / WORKLOAD:			
Activities	**QUANTITY**	**Duration (Hour)**	**Total Workload**
Course Duration	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	14	6	84
Laboratory works	13	2	26
Mid-term	2	2	4
Final examination	1	2,5	2,5
Homework	2	8	16
Quiz	1	2	2
Total Work Load			**173,5**
Total Work Load / 30			**5,78**
ECTS Credit of the Course			**6**

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
LO1	1	2	3	3	0	0	0	0	0	0	0
LO2	1	2	3	3	0	0	0	0	0	0	0
LO3	1	2	3	3	0	0	0	0	0	0	0
LO4	1	2	3	3	0	0	0	0	0	0	0
	PO: Program Outcomes | LO: Learning Outcomes Values: 0: None | 1: Low | 2: Medium | 3: High										

INSTRUCTOR(S):	Asst. Prof. Dr. Bülent HAZNEDAR
FORM PREPARATION DATE:	24.05.2019

LEARNING OUTCOMES OF THE COURSE:	**PROGRAM OUTCOMES:**
LEARNING OUTCOMES OF THE COURSE: **LO1:** Students can model large amounts of data so that they can be processed effectively. **LO2:** Students can design and implement software applications that will process large amounts of data. **LO3:** Students can choose an appropriate model along with the necessary database and software components to be used in a project. **LO4:** Students can carry out a team project and present it in front of an audience.	**PO1:** Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems. **PO2:** Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose. **PO3:** Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose. **PO4:** Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively. **PO5:** Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions. **PO6:** Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually. **PO7:** Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions. **PO8:** Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself. **PO9:** Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice. **PO10:** Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development. **PO11:** Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.