



ECTS COURSE INFORMATION FORM

Faculty	Faculty of Engineering		
Program	B.Sc. in Civil Engineering	Elective	
	B.Sc. in Computer Engineering	Elective	
	B.Sc. in Electrical-Electronics Engineering	Elective	
	B.Sc. in Industrial Engineering	Elective	
	B.Sc. in Mechanical Engineering	Elective	
Semester	Spring 2020-2021		

Course Code	COMP 466			
Course Title in English	Business Intelligence			
Course Title in Turkish	İş Zekası			
Language of Instruction	English			
Type of Course	Flipped Classroom/Lecture/Exercise			
Level of Course	Undergraduate			
Course Category (by % of Content)	Basic Science	Basic Engineering	Engineering Design	General Education
	10	50	30	10
Semester Offered	Fall			
Contact Hours per Week	Lecture: 3	Recitation: -	Lab: -	Other:-
Estimated Student Workload	156 hours			
Number of Credits	6 ECTS			
Grading Mode	Standard Letter Grade			
Pre-requisites	COMP 109			
Expected Prior Knowledge	Basic programming skills			
Co-requisites	None			
Registration Restrictions	Only Undergraduate Students			
Overall Educational Objective	To learn and apply how to generate business intelligence using bulk data.			
Course Description	The aim of this course is to provide the students with an understanding of how to getting insight using bulk data. Querying, data warehouse design, understanding schemas, reporting layer and data visualization will be completed and the information about the end-to-end solution will be transferred.			
Course Description in Turkish	Bu dersin amacı, öğrencilere toplu verileri kullanarak nasıl öngörü elde edeceklerini anlamalarını sağlamaktır. Sorgulama, veri ambarı tasarımı, şemaları anlama, raporlama katmanı, veri madenciliği ve veri görselleştirme tamamlanacak ve uçtan uca çözümle ilgili bilgiler aktarılacaktır.			
Course Learning Outcomes and Competences	Upon successful completion of the course, the learner is expected to: <ol style="list-style-type: none">1. identify, formulate, and solve business intelligence problems by applying principles of engineering as well as science and mathematics;2. communicate effectively with a range of audiences via the lab reports and project presentations;3. recognize ethical and professional responsibilities in engineering situations that are directly related to artificial intelligence and related technologies while considering the impact of engineering solutions in global, economic, environmental, and societal contexts;4. function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;5. develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions for the given cases related to business intelligence;			

6. acquire and apply contemporary issues and methods in business intelligence and data mining with using appropriate learning strategies;
7. develop a full cycle business intelligence and data mining application.

Relationship of the Course with the Student Outcomes	Level	Learning Outcome(s)	Assessed by
Program Outcomes	N=None S=Supportive H=High		Exam, Project, HW, Experiment, Presentation, etc.
(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	H	1	Exam, Assignment, Term Project
(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	H	7	Term Project
(3) an ability to communicate effectively with a range of audiences	S	2	Term Project
(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	H	3	Exam, Assignment, Project
(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	S	4	Term project
(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	H	5	Lab work, Assignment, Project
(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	H	6	Term Project, Book chapter

Prepared by and Date: Prof. Dr. Adem Karahoca, February 2021

Semester Spring 2020-2021

Name of Instructor Adem Karahoca

Course Contents	Week	Topic
	1.	Introduction to Business Intelligence
	2.	Data Warehousing
	3.	RDBMS Concepts I
	4.	RDBMS Concepts II
	5.	Modeling the Dimensions and Creating the Aggregations
	6.	Designing Data Warehouse
	7.	Introduction to Data Mining
	8.	Unsupervised Methods
	9.	Supervised Methods
	10.	Intro to WEKA Tool
	11.	Preparation data set for Weka
	12.	Real life BI and data mining applications
	13.	Project Presentations
	14.	Project Presentations
	15.	Final Examination Period
	16.	Final Examination Period

Required/Recommended Readings 1. Business Intelligence, Analytics, and Data Science: A Managerial Perspective, 4th edition, ISBN 978-0-13-463328-2, by Ramesh Sharda, Dursun Delen, and Efraim Turban, Pearson Education, 2018

	2. Data Mining: Practical Machine Learning Tools and Techniques (Morgan Kaufmann Series in Data Management Systems) 4th Edition, Ian H. Witten, Eibe Frank, Mark A. Hall, Christopher J. Pal
Teaching Methods	Flipped classroom. Students work individually for assignments.
Homework and Projects	Assignments, Quizzes & Project
Laboratory Work	None
Computer Use	Required
Other Activities	-
Assessment Methods	Exams (50%), Quizzes and assignments (25%), Term-Project (25%)
Course Administration	Instructor's office: 5th floor Phone number: 0 212 395 37 45 Office hours: After the lecture hours. E-mail address: karahocaa@mef.edu.tr Rules for attendance: No attendance required. Statement on plagiarism: YÖK Regulations

ECTS Student Workload Estimation	Activity	No/Weeks	Hours			Calculation	Explanation
		No/Weeks per Semester (A)	Preparing for the Activity (B)	Spent in the Activity Itself (C)	Completing the Activity Requirements (D)		
	Lecture/Flipped Classroom	14	1	2		42	A*(B+C+D)
	Book Chapter	1	1	10		11	
	Lab Work	10	1	2	0	30	A*(B+C+D)
	Assingments	10	1	2	0	30	A*(B+C+D)
	Final Examination	1	10	3	0	13	A*(B+C+D)
	Term-project	1	5	25	0	30	
	Total Workload					156	
	Total Workload/25					6.24	