

Vocational School / Computer Programming

2024 - 2025 Academic Year

DATA SCIENCE

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
DATA SCIENCE	BPR2214995	Spring Semester	3+0	3	5
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	Short Cycle (Associate's Degree)				
Course Type	Elective				
Course Coordinator	Lect. Beyza KOYULMUŞ				
Name of Lecturer(s)	Lect. Beyza KOYULMUŞ				
Assistant(s)					
Aim	Aims to teach all the methods, processes, algorithms and software applied to extract information from various data.				
Course Content	This course contains; Introduction to Data Science,Basic concepts of Data Science,Application development stages in data science,Examination of tools used in data science,Creating a data set,Exploratory data analysis operations: review and preparation of the data set,Exploratory data analysis operations: attribute addition and extraction,Exploratory data analysis operations: data filtering, missing data completion,Exploratory data analysis procedures: acquiring basic statistical knowledge,Exploratory data analysis operations: outlier detection,Exploratory data analysis processes: data visualization,Use of machine learning algorithms (classification and clustering),Project Development,Project Development.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
Develops a data science application on a data set			2, 6, 9	A, E, F	
Defines the relationship between Data Science and Big Data.			2, 23, 9	A, E, F	
Explains the basic concepts of data science.			2, 6, 9	A, E, F	
Analyzes data sets.			2, 6, 9	A, E, F	
Gains the ability to use data science and modeling tools			2, 6, 9	A, E, F	
Learns how to extract useful information from data			2, 9	A, E, F	
Teaching Methods	2: Project Based Learning Model, 23: Concept Map Technique, 6: Experiential Learning, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, E: Homework, F: Project Task				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Introduction to Data Science				
2	Basic concepts of Data Science				
3	Application development stages in data science				
4	Examination of tools used in data science				
5	Creating a data set				
6	Exploratory data analysis operations: review and preparation of the data set				
7	Exploratory data analysis operations: attribute addition and extraction				
8	Exploratory data analysis operations: data filtering, missing data completion				
9	Exploratory data analysis procedures: acquiring basic statistical knowledge				
10	Exploratory data analysis operations: outlier detection				
11	Exploratory data analysis processes: data visualization				
12	Use of machine learning algorithms (classification and clustering)				
13	Project Development				
14	Project Development				
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			
Resources					