

**ANKARA YILDIRIM BEYAZIT UNIVERSITY – DEPARTMENT OF MANAGEMENT
COURSE SYLLABUS**

Course Code	Course Title	Course Type	ECTS Credits	Prerequisite Information	Date of Preparation
BUS409	Data Science for Business	Compulsory	4	-	
Instructor of the Course & E-Mail Address	Prof. Dr. Rafet AKTAŞ & raktas@aybu.edu.tr				
Office Hours & Office Room	(Wednesday, 10.00-16.00 / Thursday, 10.00-16.00, Dean Office)				
Course Content and Objectives	This course introduces students to data-driven decision-making in business contexts through real-world case studies and applied exercises. Students will learn to collect, clean, analyze, and model data to generate actionable insights and communicate findings effectively for managerial decision-making.				
Textbook(s)	Provost, F. & Fawcett, T. (2013). Data Science for Business (2nd Ed.). O'Reilly Media.				
Teaching Methods and Techniques	Face-to-face lectures, case studies, class discussions, debates, and group presentations.				
Course Learning Outcomes	1	Identify and define business problems from a data-analytic perspective.			
	2	Collect, clean, and prepare datasets for analysis.			
	3	Apply statistical and machine learning models for decision support.			
	4	Interpret model outcomes using appropriate performance metrics.			
	5	Communicate analytical results effectively to business stakeholders.			
	6	Design and implement a data project for a real-world business case.			
	7	Evaluate the strategic impact of data analytics on business decision-making.			
Program Outcomes Contributed by the Course	Program Outcomes (PO)				
	PO1	Develop analytical and problem-solving skills.			
	PO2	Apply quantitative and statistical methods in business contexts.			
	PO3	Use information technologies and data tools effectively.			
	PO4	Integrate theoretical knowledge with practical applications.			
	PO5	Demonstrate teamwork, communication, and presentation abilities.			
Contribution of the Course to Field Instruction	This course provides practical knowledge and analytical skills essential for data-driven decision-making in business, enabling students to bridge the gap between business strategy and data science applications.				

Topics Covered in the Course	1. Week	Introduction to Data Thinking – <i>Carvana Case Study</i>
	2. Week	Data Collection, Cleaning, and Preparation – <i>Fannie Mae Case Study</i>
	3. Week	Exploratory Data Analysis and Visualization – <i>StockX Example</i>
	4. Week	Statistical Reasoning and A/B Testing – <i>Design of Experiments</i>
	5. Week	Linear Regression – <i>Bark Gift Shop Application</i>
	6. Week	Logistic Regression and Introduction to Machine Learning – <i>ATO Pictures</i>
	7. Week	Time Series Forecasting – <i>NICU Bed Capacity Prediction</i>
	8. Week	Midterm Exam
	9. Week	Decision Trees and Ensemble Models
	10. Week	Project Proposal and Initial Data Analysis
	11. Week	Advanced Models: Lasso and Introduction to Neural Networks
	12. Week	Presenting Insights with Data: Storytelling and Visualization Techniques
	13. Week	Project Development Workshop
	14. Week	Final Project Presentations and Peer Evaluation
	15. Week	Course Wrap-Up and Feedback Session

Course Evaluation Criteria	In-Term Studies	Quantity	Percentage %
	Mid-terms	1	%20
	Quizzes		%
	Assignments	3	%30
	Attendance		%
	Practice		%
	Project		%
	Final examination	1	%50
	Total		100%

Disability Policy

If you have a documented disability (e.g., visual, hearing, or physical impairment, etc.) that may influence your performance in this course, it is recommended to meet with the Business School AYBU (https://aybu.edu.tr/engelsiz/content_list-327-yildirim-bevazit-universitesi-engelsiz-universite-birimi-yonergesi.html) to arrange for reasonable conditions (such as accommodation, etc.) to ensure an equitable opportunity to meet all the requirements of this course. You may also contact the local authority of the Faculty of Humanities and Social Sciences. You should communicate your needs to the course instructor as soon as possible to ensure that any course needs concerning exams, lecture materials, etc. are met.