

School of Business and Management Sciences / Business Administration (English)

2023 - 2024 Academic Year

STATISTICS

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
STATISTICS	BUS2153230	Fall Semester	3+0	3	5
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Assist.Prof. Tuğba ASLAN KHALİFA				
Name of Lecturer(s)	Assist.Prof. Esra BAYTÖREN				
Assistant(s)					
Aim	The aim of this course is to equip students with the foundational knowledge and practical skills necessary to effectively analyze and interpret data in the context of business decision-making.				
Course Content	This course contains; General Concepts of Statistics, Frequency Distributions and Graphs for Categorical Variables, Frequency Distributions and Graphs for Numerical Variables, Measures of Central Tendency, Measures of Variability, Chebyshev's Theorem, Measures of Skewness and Kurtosis, Stem-and-Leaf Diagrams, Box Plots and Outlier Detection, Measure of Association Between Two Variables: Covariance and Correlation, Introduction to Probability, Basic Concepts and Discrete Probability Distributions, Continuous Probability Distributions and Normal Distribution, Sampling Distribution of the Sample Mean and Confidence Intervals, Introduction to Regression Analysis, Examples for Regression Analysis.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1. Will be able to describe the limited but essential role of statistics in social research.			10, 16, 6, 9	A	
1.1 Demonstrate knowledge of statistical terminology.					
1.2 Determine data type and measurement level of each variable.					
1.3 Explain the difference between an observational study and an experimental study.					
2. Will be able to explain the purpose of descriptive statistics in making data more understandable.			10, 16, 6, 9	A	
2.1 Summarize qualitative data by using frequency distributions, bar charts, and pie charts.					
2.2 Summarize quantitative data by using frequency distributions, histograms, frequency polygons, and ogives.					
2.3 Summarize data using measures of central tendency like mean, median, and mode.					
2.4 Define data using measures of variability such as range, variance, and standard deviation.					
3. Will be able to explain how to use relationship measures to describe and analyze relationships.			10, 16, 6, 9	A	
3.1 Describe the relationship in two-variable tables using changes in conditional distribution.					
3.2 Interpret scatterplots.					
3.3 Interpret the covariance and correlation coefficient of a two-variable dataset.					
3.4 Explain the concepts of total, explained, and unexplained variance.					
4. Will be able to recall how to utilize of probability theory for decision making in uncertain situations.			10, 16, 6, 9	A	
4.1 Calculate the probability of an event.					
4.2. Calculate the probability of compound events.					
4.3. Use basic counting rules for probability calculations.					
5. Will be able to explain how the behaviour of a random variable is summarised through probability distributions.			10, 16, 6, 9	A	
5.1 Explain the difference between discrete and continuous random variables.					
5.2. Construct discrete probability distributions and computes means and standard deviations.					
5.3 Describe the characteristics of the normal distribution.					
6. Will be able to explain sampling procedures and sampling distributions			10, 16, 6, 9	A	
6.1 Explain the concept of random sampling and selects random samples.					
6.2 Describe and uses the sampling distribution of sample means.					
6.3 Define and uses the central limit theorem.					
7. Will be able to perform regression and correlation analysis.			10, 16, 6, 9	A	
7.1 Explains regression and correlation.					
7.2 Conduct regression analysis.					
7.3 Interpret correlation.					
Teaching Methods	10: Discussion Method, 16: Question - Answer Technique, 6: Experiential Learning, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	General Concepts of Statistics				
2	Frequency Distributions and Graphs for Categorical Variables				
3	Frequency Distributions and Graphs for Numerical Variables				
4	Measures of Central Tendency				
5	Measures of Variability				
6	Chebyshev's Theorem				
7	Measures of Skewness and Kurtosis				
8	Stem-and-Leaf Diagrams, Box Plots and Outlier Detection				
9	Measure of Association Between Two Variables: Covariance and Correlation				
10	Introduction to Probability, Basic Concepts and Discrete Probability Distributions				
11	Continuous Probability Distributions and Normal Distribution				

Lecture Schedule		
Sequence	Topics	Preliminary Preparation
12	Sampling Distribution of the Sample Mean and Confidence Intervals	
13	Introduction to Regression Analysis	
14	Examples for Regression Analysis	
Evaluation Methods		Weight(%)
Midterm Exam		40
General Exam		60

Resources
Main Sources: [1] Statistics for Business and Economics, 14th edition, McClave, Benson, Sincich, Pearson, 2022. [2] Essentials Business Statistics, 5th Edition, Bruce L. Bowerman, Richard T.O'Connell, Emily S. Murphree, J. B. Orris, Mc Graw Hill Education, 2015. [3] Statistics for Business and Economics, 11th Edition, David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, South-Western Cengage Learning, 2011. Other recommended sources: [4] İşletme İstatistiğinin Temelleri, 4.basımdan Çeviri, Çeviri Editörleri: N.Orhunbilge, M.Can, Ş.Er, Nobel Akademik Yayıncılık, 2018 [5] Lecture Notes