

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
STATISTICS II	MIS2252810	Spring Semester	3+0	3	5
Prerequisites Courses	İSTATİSTİK I				
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Assist.Prof. Esra BAYTÖREN				
Name of Lecturer(s)	Assist.Prof. Esra BAYTÖREN				
Assistant(s)					
Aim	Students are aimed to understand the logic of inferential statistics and to apply hypothesis testing and regression analysis for simple business problems.				
Course Content	This course contains; Introduction to Hypothesis Testing , Five - Step Procedure for Hypothesis Testing,z and t Tests About a Population Mean, z Tests About a Population Proportion,Sample Size Determination, The Chi-Square Distribution and Statistical Inference for Population Variance, One – Sample Hypothesis Testing Using EXCEL and SPSS,Statistical Inference Based On Two Samples ,Comparing Two Population Proportions and Variances by Using Large Independent Samples,Two Sample Hypothesis Testing Using Excel and SPSS,Experimental Design and Analysis of Variance,Two – Way Analysis of Variance,Chi – Square Tests,Simple Linear Regression Analysis,Regression Analysis - Confidence and Prediction Intervals,Simple Coefficients of Determination and Correlation, An F-Test for the Model, Residual Analysis.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1. Will be able to explain the logic of hypothesis tests.			10, 16, 6, 9	A, E, G	
1.1 Explains the place of hypothesis testing in inferential statistics					
1.2 Creates null and alternative hypotheses					
1.3 Explains Type I and Type II errors and their probabilities					
2. Will be able to explain one-sample and two-sample hypothesis tests.			10, 16, 6, 9	A, E, G	
2.1 Uses critical values and p-values to perform a z test and t test about a population mean					
2.2 Compares two population means when the samples are independent					
2.3 Compares two population means when the data are paired					
3. Will be able to use computer programs to perform one-sample hypothesis testing and two-sample hypothesis testing.			10, 16, 6, 9	A, E, G	
3.1 Performs one-sample tests and two-sample tests using Excel					
3.2 Performs one-sample tests and two-sample tests using SPSS					
4. Will be able to explain variance analysis.			10, 16, 6, 9	A, E, G	
4.1 Explains the basic terminology and concepts of experimental design					
4.2 Compares several different population means by using a one-way analysis of variance					
4.3 Compares treatment effects and block effects by using a randomized block design					
5. Will be able to define chi-square tests.			10, 16, 6, 9	A, E, G	
5.1 Describes the properties of the Chi-square distribution					
5.2 Uses Chi-square table					
6. Will be able to use simple regression analysis.			10, 16, 6, 9	A, E, G	
6.1 Explains the simple linear regression model					
6.2 Describes the assumptions of simple linear regression					
6.3 Calculates simple coefficient of determination and simple correlation coefficient					
Teaching Methods	10: Discussion Method, 16: Question - Answer Technique, 6: Experiential Learning, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, E: Homework, G: Quiz				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Introduction to Hypothesis Testing				
2	Five - Step Procedure for Hypothesis Testing				
3	z and t Tests About a Population Mean, z Tests About a Population Proportion				
4	Sample Size Determination, The Chi-Square Distribution and Statistical Inference for Population Variance				
5	One – Sample Hypothesis Testing Using EXCEL and SPSS				
6	Statistical Inference Based On Two Samples				
7	Comparing Two Population Proportions and Variances by Using Large Independent Samples				
8	Two Sample Hypothesis Testing Using Excel and SPSS				
9	Experimental Design and Analysis of Variance				
10	Two – Way Analysis of Variance				
11	Chi – Square Tests				
12	Simple Linear Regression Analysis				
13	Regression Analysis - Confidence and Prediction Intervals				
14	Simple Coefficients of Determination and Correlation, An F-Test for the Model, Residual Analysis				
Evaluation Methods		Weight(%)			
(Midterm Exam) 7 separate MyLab assignment as a part of midterm exam		7 x 5,714			

STATISTICS II

Syllabus

Midterm Exam	40
(General Exam) Quiz as a part of general exam	18
(General Exam) Written exam as a part of general exam	42
General Exam	60

Resources

- [1] Statistics for Business and Economics, 14th edition, McClave, Benson, Sincich, Pearson, 2022
- [2] Statistics for Business and Economics, 11th Edition, David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, South-Western Cengage Learning, 2011
- [3] İşletme İstatistiğinin Temelleri, 4.basımdan Çeviri, Çeviri Editörleri: N.Orhunbilge, M.Can, Ş.Er, Nobel Akademik Yayıncılık, 2018
- [4] Lecture Notes