

Identification	Subject (code, title, credits)		MGT 800 Applied Business Statistics - 3KU/6ECTS credits
	Department		Economics and Management
	Program		Graduate
	Term		Fall, 2025
	Instructor		Rovshan Hajiyeu
	E-mail		rovshan.hajiyeu@khazar.org
	Classroom/hours		Bashir Safaroglu 122, Room
Prerequisites			
Language	English		
Compulsory/Elective	Compulsory		
Required textbooks and course materials	<p>Core Textbooks: [1] Applied statistics in business and economics. 7th edition. By David P Doane, Lori Welte Seward Year: 2021. Publisher: Mcgraw-Hill Education Publisher Place: New York, Ny ISBN: 9780077837303</p> <p>Supplementary reading materials: [2] Statistics for Business & Economics. 14th edition. By David R Anderson Year: 2019 Publisher: Cengage Learning Publisher Place: New York ISBN: 9781337901062 [3] The practice of statistics for business and economics. 4th edition. By David S. Moore, George P. McCabe, Layth C. Alwan, Bruce A.Craig Year: 2016 Publisher: W.H. Freeman and Company Publisher Place: New York ISBN: 9781464132261</p>		
Course outline	The course covers describing and organizing data, probability concepts, probability distributions, sampling and sampling distributions, confidence interval estimation, test of hypothesis, analysis of variance and decision-making. Business and economics applications are used to illustrate these concepts		
Course objectives	To equip students with basic statistical methods used, show them the relevance of statistics in functional areas in Business and Economics and familiarize them with statistical programs used in the business world.		
Learning outcomes	Having completed the course, students will be able to: <ul style="list-style-type: none"> • Understand basic properties of data sets and their graphs • Describe basic traits of data and show the associations between categorical and quantitative variables • Understand and apply probability concepts into business areas • Construct confidence intervals and run significance tests about hypothesis • Work with basic applications and software of statistics (Excel) 		
Teaching methods	Lecture		✓
	Practices		✓
	Group discussion		✓
	Case analysis		✓
Evaluation	Methods	Date/deadlines	Percentage (%)
	Midterm Exam	To be announced	30

	Attendance		5
	Activity		5
	Quizzes	To be announced	10
	Individual Projects	To be announced	40
	Final Exam	To be announced	10
	Total		100

Policy	<p>Activity/Attendance. Because of the once-a-week course format, students are expected to attend all sessions. If you have an absence, take responsibility for making up assignments and for obtaining missed lecture information.</p> <p>Participation is important for doing well on the course. You'll be graded for your active engagement with the material and your peers. The activity and participation will account for 10 % of the total course grade.</p> <p>Class preparation: Students are responsible for: 1) reading the assigned materials; 2) taking the initiative to ask questions that promote understanding of the academic subject; 3) communicating regularly with the instructor, especially in matters related to class assignments.</p> <p>Quizzes: The structure and format of the homework may include multiple choice and open-ended questions.</p> <p>Analysis of the assigned case will be conducted by each student. Homework and case analysis will account for 20 % of the final grade.</p> <p>Project: The purpose of this assignment is to test your ability to 1) locate, 2) select and 3) analyze data. This assignment is based on a situation that you may encounter in a corporate scenario. This purpose is aligned with desirable graduate attributes as part of the learning outcomes associated with Statistics for Business and Economics.</p> <p>Cheating/Plagiarism. Academic integrity is fundamental to the activities and principles of a university. Breaches of academic integrity will lead to assignment cancellation. When in doubt about plagiarism or any other form of cheating, consult the course instructor</p>
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Tentative Schedule

Week	Date/Day Tentative	Topics	Textbook
1		Using Graphs to Describe Data: Introduction to Business Analytics Level of measurement Time series versus cross-sectional data Data Descriptions Sampling Concepts and Methods Business Analytics in Practice	Ch2 [page. 23-50]
2		Statistical grouping: Signs and types of statistical groupings	Ch3 [page. 65-95]

		Width of the intervals; Sturge's rule. 2k Rule Data Description Numerical applications in Business Analytics	
3		Descriptive Statistics: Numerical Description Central Tendency Standardized Data Percentiles Quartiles and Box Plot Numerical Applications in Business Analytics	Ch4 [page. 113-154]
4		Probability: Quiz 1 Random Experiments Counting Rules Independent Events Conditional Probability	Ch5 [page 172-188]
5		Probability: Bayes Theorem Tree Diagrams Decesion Making in Business Analytics	Ch5 [page 196-207]
6		Discrete Probability Distributions: Normal Distribution Uniform Distribution Binomial Distribution Standard Normal Distribution Empirical Approaches	Ch6 [page 215-232]
7		Sampling Distribution and Estimation: Confidence Interval for a mean with known sigma Confidence Interval for a mean with unknown sigma Confidence Interval for a proportion Applications in Business Analytics Mid-term exam review and discussion:	Ch7 [page 295-318]
8		One - Sample Hyphotesis Test: Mid-term Exam Logic of Hypothesis Testing Testing a mean known population variance Testing a mean unknown population	Ch9 [page 341-381]

		variance Testing a proportion Business applications	
9		Two - Sample Hypothesis Test: Comparing Two Means: Independent Samples Confidence Interval for the Difference of Two Means Comparing Two Means: Paired Samples Comparing Two Proportions Confidence Interval for the Difference of Two Proportions Comparing two variances	Ch10 [page 391-417]
10		Analysis of Variance: 1 Overview of ANOVA One-Factor ANOVA (Completely Randomized Model)	Ch11 [page 439-464]
11		Analysis of Variance: 2 Tests for Homogeneity of Variances Two-Factor ANOVA without replication Empirical Applications	Ch12 [page 49-510]
12		Simple Regression: 1 Quiz 2 Visual Displays and Correlation Analysis Simple Regression Ordinary Least Squares Formulas Tests for significances	Ch12 [page 511-524]
13		Simple Regression: 2 Analysis of Variance Overall Fit Residual Tests Linear Regression Forecasting	Ch14 [page 595-627]
14		Chi-Square Tests: Chi-Square Test for Independence Chi-Square Tests for Goodness-of-Fit Uniform Goodness-of-Fit Test Poisson Goodness-of-Fit Test Normal Chi-Square Goodness-of-Fit Test	Ch15 [page 643-665]
15		Non-Parametric Tests: Why Use Nonparametric Tests? One-Sample Runs Test Wilcoxon Signed-Rank Test	Ch16 [page 685-695]

		Mann-Whitney Test Kruskal-Wallis Test for Independent Samples Final exam review and discussion:	
16		Final Exam	