

Identification	Subject (code, title, credits)	ECON 450 Business Statistics – 3KU credits/6ECT
	Department	Economics and Management
	Program	Undergraduate
	Term	Fall, 2026
	Instructor	Assos.Prof., PhD Naila Musayeva
	E-mail	naila.musayeva@khazar.org
	Classroom/hours	41 Mehseti street (Neftchilar campus), Khazar University / 60 hours
Prerequisites	MATH 225 Mathematics for Economics and Business	
Language	English	
Compulsory/Elective	Compulsory	
Required textbooks and course materials	Core textbooks: 1. Levine, Krehbiel, Berenson, “Business Statistics: A First Course”, 7th Edition, (2020). 3. J.S. Abdey , “Statistics 1”, University of London (2019) 4. J.S. Abdey , “Statistics 2”, University of London (2019) Supplementary textbook: 5. Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda. Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2021). 6. Douglas A. Lind, William G. Marchal, Samuel A. Wathen “Basic Statistics for Business and Economics”, Published by McGraw-Hill Education, (2019) 7. Lex Holmes, Barbara Illowsky, Susan Dean, “Introductory Business Statistics” (2023) 8. Paul Newbold, William L. Carlson and Betty M. Thorne ”Statistics for Business and Economics”, 9th edition, (2021). 9. Schwarz, J. “The use of generative AI in statistical data analysis and its impact on teaching statistics at universities of applied sciences.” <i>Teaching Statistics</i>. (2025).	
Course outline	This course provides learn statistical techniques for further study in business, economics, and finance. The course covers descriptive statistics, probability, discrete and continuous random variables, estimation, hypothesis testing, regression analysis. The course emphasizes statistics to solve management problems. Tools and methods are a necessary skill for a modern manager. The current business environment requires the ability to analyze and summarize data, and use statistical analysis for decision-making and problem solving. The course presents basic quantitative methods; the main goal is to provide a basic foundation of statistical methods to students with different education backgrounds and work experiences.	
Course objectives	The main objectives of this course are: CO1. To provide students with a solid foundation in descriptive and inferential statistics relevant to business and economics. CO2. To develop students’ ability to apply probability concepts and statistical methods to real-world business problems. CO3. To enhance critical thinking and analytical skills for data interpretation, decision-making, and problem-solving. CO4. To familiarize students with regression analysis, hypothesis testing, and estimation techniques in business research. CO5. To prepare students for future academic studies and professional careers by integrating statistical tools into business decision-making.	
Learning outcomes	LO1. Summarize and present business data using descriptive statistical measures and graphical methods.	

	LO2. Apply probability distributions and statistical inference techniques to analyze business situations. LO3. Formulate and test hypotheses to support managerial decision-making. LO4. Conduct correlation and regression analyses to evaluate relationships between business variables. LO5. Use statistical reasoning and data analysis tools to solve business problems and communicate findings effectively		
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	-
	Individual Projects	To be announced	20
	Final Exam	To be announced	40
	Total		100
Policy	Course Team Project The course project is designed to provide students with the opportunity to apply the learned concepts and statistical methods to real-world business problems. The project will be implemented in a practical environment to help students understand the complexities of data analysis in business decision-making. Projects will be carried out in groups of 4–6 students (depending on class size). Each group will select one topic from a list provided by the instructor and conduct statistical analysis to support their findings. A final group presentation will take place during the last class session (10–15 minutes), and a written report must be submitted at the beginning of the final class. Assignments or reports submitted by email will not be accepted under any circumstances. Attendance Students who exceed the 25% absence limit will not be allowed to participate in the final exam. Presentations/Projects Group work will involve data-based case studies. A team leader will be selected for each project, and students will analyze the situation using the knowledge gained in the course. Group presentations will be graded not only on the quality of analysis but also on teamwork. Individual contributions to projects will be assessed separately. Cheating/Plagiarism Any form of cheating or plagiarism during the midterm or final examinations will result in the cancellation of the paper. In such cases, the student will automatically receive a grade of zero (0) without further consideration. Class Activity Students will actively participate in case study analyses focused on applying statistical techniques to real business scenarios. The class will be divided into small groups of 4–5 students, each assigned a specific case. Examples may		

		include analyzing sales data, testing hypotheses about consumer behavior, or evaluating the effectiveness of a business strategy using regression or probability models. AI Use Policy Students may use AI tools to search for information, generate ideas, and support their learning. However, AI must not be used to create the final presentation or to replace the student’s own work and critical thinking. Students are responsible for verifying the accuracy of AI-generated information and for ensuring that all submitted work reflects their own understanding and contribution.	
Tentative Schedule			
Week	Date/Day Tentative	Topics	Textbook
1	18/09/26	Introduction to business statistics Their classification. Social, economic and demographic data. Statistical data system: volume indicators, average indicators, characteristics of variation. Statistical experiments. Program methodological and organizational issues in statistical experiments.	Levine, Krehbiel, Berenson, ``Business Statistics: A First Course``, 7th edition, 2020. Introduction, Chapter 1
2	25/09/26	Frequency distribution. Graphical representations for discret and interval observations.	Levine, Krehbiel, Berenson, ``Business Statistics: A First Course``, 7 th edition, 2020.Chapter 2
3	02/10/26	Central tendency.Mean.Mode and Median.Calculation by the economic and business problem.	Levine, Krehbiel, Berenson, ``Business Statistics: A First Course``, 7 th edition, 2020. Chapter 3
4	09/10/26	Skewness and kurtosis distribution. Defining the importance of these distributions and explanation result on business problem.	Paul Newbold, William L.Carlson and Betty M.Thorne ``Statistics for Business and Economics``, 9 th edition, 2021. Chapter 4
5	16/10/26	Dispersion analyses. .Standart deviation Mean lineardeviation, mean square deviation, dispersion. Relative indicators of size and intensity in variations: coefficient of oscillation, linear coefficient.	Levine, Krehbiel, Berenson, ``Business Statistics: A First Course``, 7 th edition, 2020. Chapter 3
6	23/10/26	Elements of Chance: Probability Methods. Conditional Probability and Bayes Theorem	Levine, Krehbiel, Berenson, ``Business Statistics: A First Course``, 7 th edition, 2020. Chapter 4
7	30/10/26	Discrete Probability Distributions Continuous Probability Distribution	Paul Newbold, William L.Carlson and Betty M.Thorne ``Statistics for Business and Economics``, 9 th edition, 2021.Chapter 7
8	06/11/26	Midterm-exam	Paul Newbold, William L.Carlson and Betty M.Thorne ``Statistics for Business and Economics``, 9 th edition, 2021. Chapter 1-7
9	13/11/26	Covariance and correlation analyses.Finding the importance of correlation coefficient.Explanation result on business problem.	Paul Newbold, William L.Carlson and Betty M.Thorne ``Statistics for Business and Economics``, 9 th edition, 2021.Chapter 8
10	20/11/26	Linear regression analyses. Explanation result on business problem.	Paul Newbold, William L.Carlson and Betty M.Thorne ``Statistics for

			Business and Economics'', 9 th edition, 2021. Chapter 9
11	27/11/26	Defining the significance of linear regression model by the tests.F-Fisher test, S-student test, Determination coefficient.	Paul Newbold, William L.Carlson and Betty M.Thorne ``Statistics for Business and Economics'', 9 th edition, 2021. Chapter 9
12	04/12/26	Confidence Interval Estimation of Unknown Population Mean when population variance is unknown	Paul Newbold, William L.Carlson and Betty M.Thorne ``Statistics for Business and Economics'', 9 th edition, 2021.Chapter 11
13	11/12/26	Confidence Interval Estimation of Unknown Population Mean. Hypothesis Tests of Single Population	Paul Newbold, William L.Carlson and Betty M.Thorne ``Statistics for Business and Economics'', 9 th edition, 2021. Chapter 12, 13
14	18/12/26	Generative AI for Business Statistics: Using AI to Support Data Analysis and Statistical Decision-Making	Schwarz, J. "The use of generative AI in statistical data analysis and its impact on teaching statistics at universities of applied sciences." <i>Teaching Statistics</i> .(2025).
15	25/12/26	Research Presentation	
16		Final Exam	