Identification	Subject	**ECON 860 Advanced Econometrics – 3KU/6ECTS credits**
	Department	Economics and Management
	Program	Graduate
	Term	Spring Semester 2023
	Instructor	Rovshan Hajiyev
	E-mail	rovshan.hajiyev@khazar.org
	Classroom/hours	TBA
	Language	English
Prerequisites	**MGT 800 Applied Business Statistics**	
Compulsory/ Elective	Compulsory	
Textbooks and course materials	1) Studenmund, A.H. (2017) *Using econometrics a practical guide*. 7th edition. Boston: Pearson. **Additional reading (might be updated):** 2) "Basic Econometrics", Damodar Gujarati, Dawn Porter 5th Edition *(Will be provided by Instructor during the Class)* 3) Brooks, C. (2020) *Introductory econometrics for finance*. 4th edition. Cambridge University Press. *(Will be provided by Instructor during Class)* 4) Dougherty, C. (2016) *Introduction to econometrics*. 5th edition. Oxford: Oxford University Press. *(Will be provided by Instructor during Class)* 5) Greene, W.H. (2020) *Econometric analysis*. 8th edition. Harlow, England: Pearson. *(Will be provided by Instructor during Class)* 6) Introductory Econometrics: a Modern Approach, Jeffrey M. Wooldridge, (2020) 7th Edition. (JW) *(Will be provided by Instructor during Class)* 7) Campbell, J.Y., Lo, A.W. and MacKinlay, A.C. (2011) *The econometrics of Financial Markets*. 2nd edn. New Dehli: New Age International (P) Ltd., Publ. *(Will be provided by Instructor during Class)*	
Course objective and content	This course provides an advanced econometric technique used to analyze data sets in business, economics, finance, and statistical theories. It builds on simple and multiple linear regression in context of cross sectional, time series and panel dataset. The focus is on understanding how to apply statistical and econometrics tools to the analysis of business and economic applications. The class will cover various topics related with regression analysis, estimation, economic indicators, and surveys. The topics covered in this course include least squares analyses; properties of least squares estimators; statistical inference in simple and multiple regression; regression with dummy variables. • Statistical software, mainly STATA, EVIEWS and Excel, will be used to provide the results and interpret and comment on these results. • Emphasis in class will be on thinking about the data that is needed to address	

relevant questions, the challenges in conducting empirical and business data analysis.

The academic objective of this course is to improve and deepen students' knowledge of econometric methodologies, tools and practices of quantitative research in order to develop elementary skills in problem definition, model building, and communication of the results of quantitative analysis Students will be familiar with the use of spreadsheet modeling and management science software and interpretation of the output.

Learning Outcomes	Students completing the module will be able to understand and critically appraise the use-fullness and appropriateness of alternative empirical specifications in regression analysis. The module also aims to equip students with techniques to test hypotheses in linear regression, and to help students acquire skills for future theoretical and empirical studies, including software skills. Theory: Data transformation; Detecting and solving problems of misspecification; Goodness-of -fit statistics; Heteroskedasticity; Autocorrelation; Hypothesis testing. Introduction to panel data models; Controlling for unobservable and fixed effects; Individual fixed effects; Common time effects; Instrumental variable estimation. Binary dependent variables. Applications: Relations among variables at both the macro and micro level will be investigated. Relation between economic activity and institutional quality. Effect of education on earnings. Causal relationship among macroeconomics variables

Grading System	**Methods**	**Percentage (%)**
	Midterm Exam	30
	Home Assignments	10
	Attendance	5
	Quizzes (2)	10
	Activity	5
	Final Exam	40
	Total	100

Class Participation and Attendance	**Attendance Policy** 5 % of final grade will be given for class attendance. Students should attend all classes. The proof of reason for unavoidable absence has to be provided by student. In this case, the absence will not be resulted with grade subtraction. Students should come to the classes on time. Late arrival more than 15 minutes will be resulted as absence on the attendance sheet. In case of late arrival, student has to inform Instructor in advance. **Class activity in this course:** 5% of the final grade will be given for class participation. It is required from students to contribute to the class discussion and actively participate in team works. The quality of contribution will be the main factor not the quantity of contribution. **Home assignment** Group Research report should comprise of the following sections:

1. Introduction
2. Hypothesis development
3. Data
4. Econometric model
5. Estimation result and interpretations
6. Conclusions
7. References

Groups shall consist of min 3 and max 4 students.

You should hand in group report before the presentations. Presentations shall not be
more than 10-14 slides and 15 minutes. More details about the assignments will provided during the course. Besides this, after the presentations I will ask questions to each team member individually for their
individual presentation grading. Correct answers will save you from losing. Additional questions may be asked if necessary. Deadline of this group research is due on 14th week of semester.

Quiz Each quiz is 5% of final grade and will take 35 minutes. The first Quiz is planned to hold on the 5th week of the semester. The second one will be conducted on the 11th Week of semester.

Academic Dishonesty

Students are expected to conduct themselves in a professional manner. Academic dishonesty such as plagiarism and cheating will not be tolerated. Therefore, students are expected to be honest and ethical in their academic work. Cases of academic dishonesty will be immediately reported to the Director's office for disciplinary action.

Office Hours

The instructor will be available to consult with students regarding class related questions regularly by appointment. Meetings with students outside office hours should be scheduled in advance by sending an e-mail to the instructor.

Tentative Schedule

Week	Topics	Textbook/Chapters
1	An Overview of Regression Analysis	Chapter 1
2	Ordinary Least Squares	Chapter 2
3	Learning to Use Regression Analysis	Chapter 3
4	The Classical Model	Chapter 4
5	Hypothesis Testing and Statistical Inference **Quiz-1**	Chapter 5
6	Specification: Choosing the Independent Variables	Chapter 6
7	Specification: Choosing a Functional Form	Chapter 7
8	**Midterm-exam** Multicollinearity	Chapter 8
9	Serial Correlation	Chapter 9
10	Heteroskedasticity	Chapter 10
11	Time-Series Models **Quiz-2**	Chapter 12
12	Dummy Dependent Variable Techniques	Chapter 13
13	Simultaneous Equations	Chapter 14

14	Forecasting, **home assignment**	Chapter 15
15	**Review Class** Univariate Time-Series Modelling and Forecasting	Chapter 15
	Final Exam	