

<b>Identification</b>	<b>Subject</b>	<b>ECON 860 Advanced Econometrics – 3KU/6ECTS credits</b>
	<b>Department</b>	Economics and Management
	<b>Program</b>	Graduate
	<b>Term</b>	Spring 2024
	<b>Instructor</b>	Rovshan Hajiyeu
	<b>E-mail</b>	rovshan.hajiyeu@khazar.org
	<b>Classroom/hours</b>	
<b>Prerequisites</b>	<b>MGT 800 Applied Business Statistics</b>	
<b>Language</b>	English	
<b>Compulsory/ Elective</b>	Compulsory	
<b>Textbooks and course materials</b>	<p>1) Hill, R.C., Griffiths, W.E. and Lim, G.C. (2018a) <i>Principles of econometrics</i>. Hoboken, NJ: Wiley.</p> <p><b>Additional reading (might be updated):</b></p> <p>2) Studenmund, A.H. (2017) <i>Using econometrics a practical guide</i>. 7<sup>th</sup> edition. Boston: Pearson.</p> <p>3) “Basic Econometrics”, Damodar Gujarati, Dawn Porter 5th Edition, 2020 (Will be provided by Instructor during the Class)</p> <p>4) Brooks, C. (2020) <i>Introductory econometrics for finance</i>. 4th edition. Cambridge University Press. (Will be provided by Instructor during Class)</p> <p>5) Dougherty, C. (2016) <i>Introduction to econometrics</i>. 5th edition. Oxford: Oxford University Press. (Will be provided by Instructor during Class)</p> <p>6) Greene, W.H. (2020) <i>Econometric analysis</i>. 8<sup>th</sup> edition. Harlow, England: Pearson. (Will be provided by Instructor during Class)</p> <p>7) <i>Introductory Econometrics: a Modern Approach</i>, Jeffrey M. Wooldridge, (2020) 7<sup>th</sup> Edition. (JW) (Will be provided by Instructor during Class)</p> <p>8) Campbell, J.Y., Lo, A.W. and MacKinlay, A.C. (2011) <i>The econometrics of Financial Markets</i>. 2nd edn. New Dehli: New Age International (P) Ltd., Publ. (Will be provided by Instructor during Class)</p>	
<b>Course outline</b>	<p>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 the context of cross-sectional, time series, and panel datasets. 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 to 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; and regression with dummy variables.</p>	

<b>Course objective</b>	The academic objective of this course is to improve and deepen students' knowledge of econometric methodologies, tools and practices of quantitative research 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. 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, and the challenges in conducting empirical and business data analysis.		
<b>Learning Outcomes</b>	<p>Students completing the module will be able to</p> <ul style="list-style-type: none"> <li>• understand and critically appraise the use-fulness and appropriateness of alternative empirical specifications in regression analysis.</li> <li>• equip students with techniques to test hypotheses in linear regression</li> <li>• help students acquire skills for future theoretical and empirical studies, including software skills.</li> <li>• Detecting and solving problems of misspecification; Goodness-of-fit statistics; Heteroskedasticity; Autocorrelation; Hypothesis testing.</li> <li>• Controlling for unobservable and fixed effects; Individual fixed effects; Common time effects; Instrumental variable estimation.</li> </ul>		
<b>Evaluation Criteria</b>	<b>Problem solving</b>	x	
	<b>Group discussion</b>	x	
	<b>Lecture</b>	x	
<b>Grading system</b>	<b>Methods</b>	<b>Date/Deadlines</b>	<b>Percentage (%)</b>
	Midterm Exam	TBA	30
	Home Assignment / Presentation	14th week	10
	Attendance		5
	Quizzes	6th week and 14th week	10
	Activity		5
	Final Exam	TBA	40
	Total		100
<b>Policy</b>	<p><b>Attendance Policy</b></p> <p>5% of final grade will be given for class attendance. Students should attend all classes. The proof of the reason for unavoidable absence has to be provided by a student. In this case, the absence will not be resulted with grade subtraction. Students should come to the classes on time. Late arrival of more than 15 minutes will result in absence on the attendance sheet. In case of late arrival, a student has to inform the Instructor in advance.</p> <p><b>Class activity in this course:</b></p> <p>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</p>		

	<p>contribution.</p> <p><b>Home assignment</b> Group Research report should comprise of the following sections:</p> <ol style="list-style-type: none"><li>1. Introduction</li><li>2. Hypothesis development</li><li>3. Data</li><li>4. Econometric model</li><li>5. Estimation result and interpretations</li><li>6. Conclusions</li><li>7. References</li></ol> <p>Groups shall consist of min 3 and max 4 students.</p> <p>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 be 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.</p> <p><b>Quiz</b> Each quiz is 5% of the final grade and will take 35 minutes. The first Quiz is planned to be held on the 5th week of the semester. The second one will be conducted on the 11th Week of the semester.</p> <p><b>Academic Dishonesty</b> 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.</p> <p><b>Office Hours</b> 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.</p>	
<b>Tentative Schedule</b>		
<b>Week</b>	<b>Topics</b>	<b>Textbook/Chapters</b>
1	An Introduction to Econometrics	Chapter 1
2	The Simple Linear Regression Model	Chapter 2
3	Interval Estimation and Hypothesis Testing	Chapter 3
4	Prediction, Goodness-of-Fit, and Modeling Issues	Chapter 4
5	The Multiple Regression Model	Chapter 5
6	Further Inference in the Multiple Regression Model <b>Quiz-1</b>	Chapter 6
7	Using Indicator Variables	Chapter 7
8	<b>Midterm-exam</b> Heteroskedasticity	Chapter 8
9	Regression with Time-Series Data: Stationary	Chapter 9

	Variables	
10	Endogenous Regressors and Moment-Based Estimation	Chapter 10
11	Simultaneous Equations Models	Chapter 11
12	Regression with Time-Series Data: Nonstationary Variables	Chapter 12
13	Vector Error Correction and Vector Autoregressive Models	Chapter 13
14	Time-Varying Volatility and ARCH Models <b>Quiz-2</b>	Chapter 14, <b>Home assignment</b>
15	<b>Review Class</b> Time-Varying Volatility and ARCH Models	Chapter 14
	<b>Final Exam</b>	