



## UNIVERSITY OF NEW YORK IN PRAGUE

**Course:** ECN311 Econometrics (6 ECTS/3 US credits)  
**Semester:** Fall 2023  
**Prerequisites:** Statistics I  
**Instructor:**

### 1. Course Purpose

This course gives students an overview of some basic econometric techniques so as to enable them to understand less complicated academic and empirical work as well as produce some simple models and analyses of their own. Students will be introduced to basic theory, but the emphasis will be on applying econometrics in practice to enable them to appreciate the value added to business and research. No prior programming skills are required but students will be shown the output from such software and how to produce simple analyses as appropriate.

Enable students to use basic econometric techniques to analyze data and interpret the results of the analysis in a practical manner. Students will also be able to understand and interpret theses, and econometric techniques both in the context of academic research and in a practical business environment. This course also serves as a steppingstone to more advanced courses.

### 2. Required Readings

Wooldridge, Jeffrey M. *Introductory Econometrics: A Modern Approach*. 7th Edition

### 3. Additional Readings

- Smith, A.D. and Taylor, J.E. (2016). *Essentials of Applied Econometrics*. [ebook] University of California Press. Available at: <https://www.perlego.com/book/551245/essentials-of-applied-econometrics>
- Angrist, J. and Pischke, J. (2008). *Mostly Harmless Econometrics: An Empiricist's Companion*. [ebook] Princeton University Press. Available at: <https://www.perlego.com/book/734620/mostly-harmless-econometrics>
- You might be asked to read specific chapters/excerpts ad hoc or check out specific videos
  - a. CrashCourse. (2018). Crash Course Statistics.  
[https://www.youtube.com/watch?v=zouPoc49xbk&list=PL8dPuuaLjXtNM\\_Y-bUAhbISAdWRnmBUcr](https://www.youtube.com/watch?v=zouPoc49xbk&list=PL8dPuuaLjXtNM_Y-bUAhbISAdWRnmBUcr)
  - b. MRU. (2019). *Mastering Econometrics* featuring Josh Angrist.  
<https://mru.org/teacher-resources/courses/mastering-econometrics>

### 4. Learning Outcomes

Upon completion of this course, students should be able to critically analyze data using basic econometric techniques and understand less complicated research and empirical work which use these techniques. Students will be provided with a sufficient foundation enabling them to sign up for more advanced classes and to perform basic applied analysis. Furthermore, students are expected to be able to:

- Understand the main facets of formulating research questions from an econometric perspective

- Appreciate the importance of acquiring appropriate data (sample selection issues)
- Understand the structure of data and how to process it
- Understand and be able to apply the simple linear regression model and multiple regression analysis (level of detail depends on existing knowledge of students)
- Understand and be able to perform basic time series analysis
- Understand and be able to perform basic panel data analysis
- Interpret related software output

## 5. Course Content

- Week 1: Introduction and a brief overview of the course; answers to QUESTIONS regarding the structure of the course, grading, course material, etc.; quick stocktaking of students' current capabilities (basic statistics and simple math)
- Week 2: Structure of economic data, a first quick look at data (descriptive statistics, some basic distributions), Hypothesis testing, and the three-step verification of the research process (Economic, Statistical, and Econometric verification)
- Week 3: Differences between two and more groups: (un)paired tests and ANOVA
- Week 4: Difference between observed data and expected data in questionnaire-based research: A chi-square test
- Week 5: Simple regression model and Gauss-Markov Assumptions
- Week 6: Multiple regression analysis
- Week 7: Binary response models: Probit, Logit, and Heckit
- Week 8: Q&A session, project outcomes
- Week 9: Midterm
- Week 10: Difference - in - differences analysis
- Week 11: Regression analysis with panel data
- Week 12: Regression analysis with time series data
- Week 13: Multi-criteria decision analysis methods and non-parametric methods in operations research and economics
- Week 14: Presentations
- Week 15: **Final Exam**

## 6. Course Requirements and Grading

Class Participation	5%
Presentation	10%
Homework	10%
Quizzes	15%
Midterm	30%
Final Exam	30%

### Class Participation

Students are expected to come to class prepared, concentrate fully on the lecture and also pay attention to what their classmates are saying. Students need not worry if they make mistakes in terms of their participation, on the contrary, the effort will be appreciated, provided that students learn from the mistakes. Attendance is *not* class participation. Students must contribute with insightful questions, answer the instructor's questions and contribute to discussions to be awarded class participation points. However, attendance is obviously a necessary prerequisite.

### Presentation

Students will choose between presenting a critical review of a research paper *or* a simple analysis of their own. If students choose to present their own analysis, they will present a topic of their

choice, subject to the professor's approval of that topic. Students must describe in detail how they would perform the analysis, what data they would use, how they would obtain it, what problems they would expect to run into, how they would solve them, what results they are going to expect, and why. Using software to actually perform the analysis is not required, but it is encouraged. Presentations will be around 15 minutes long and will use PowerPoint or similar software. Students will be graded mainly on their ability to apply relevant econometric concepts, the structure of their presentation, choice of topic and data, and the depth of their analysis. Students are encouraged to comment on their classmates' presentations and ask relevant questions (this will be counted towards the grade for Class Participation). Presentations should be easy to follow and students' discussions polite and constructive. Presentations can be done in groups of up to 4 people and must be sent by email **with an abstract** of the analysis describing the steps mentioned above in the case of a simple analysis or presenting the critical analysis in the case of a research paper. This abstract must be succinct and no more than 1 page long. The email is to be sent by the end of the week on which the presentations were given. Students may adjust their presentation and abstract based on the feedback they receive to slightly improve their grades.

### **Homework**

Students will be given homework assignments at least a week in advance to help them understand the material being covered in class. **Failure to respect the deadline will result in an F for that particular assignment, no excuses!** All written assignments must be proofread, word-processed, and sent by email. Linguistic errors will adversely affect your grade only if they reduce intelligibility. **Handwritten work will not be accepted and that particular assignment will be graded with an F.**

### **Quizzes**

Quizzes help students stay motivated to study on a continuous basis in order to not fall behind as the material constantly builds upon itself. Quizzes will be frequent, depending also on the speed of progress made during the lectures. They will not be more than 15 minutes long and will be taken at the beginning of class. Late arrivals will not be given additional time. Students will be informed a week in advance about the material which each quiz will cover. Students are allowed to use their notes and textbooks but there will not be much time available to search for answers if the material is not familiar to them. No mobile devices are allowed (cell phones, PDAs, laptops), etc. **Unauthorized use of any such device during the quiz will automatically result in an F.**

### **Midterm**

The Midterm will test all the material covered up to and including Week 7. It will not require students to use programming software to solve problems, but they will be expected to interpret output from such software. Theoretical questions will be focused on practical application as well, so no mathematical proofs or anything of that nature will be required. Latecomers will not be given additional time to complete the Midterm. Students with excused absences are allowed to take a different Midterm within a week of the excused absence.

### **Final Exam**

Same as for the Midterm except that the final exam will cover all the material covered up to and including Week 14, with more emphasis on the material covered after the midterm.

## Grading Scale

Letter Grade	Percent (%)	Generally Accepted Meaning	Notes	
A	95-100	Outstanding work	Credits awarded	
A-	90-94			
B+	87-89	Good work, distinctly above the average		
B	83-86			
B-	80-82			
C+	77-79	Acceptable Work		
C	73-76			
C-	70-72			
D+	67-69	Work that is significantly below average		Credits awarded, but will NOT transfer to ESC (retake needed for ESC!)
D	63-66			
D-	60-62			
F	0-59	Work that does not meet the minimum standards for passing the course	Credits not awarded	

## 7. Key UNYP Policies

### Attendance

Students will be punctual and will miss no more than 12 (twelve) hours of class (reasons irrelevant). Attendance will be taken regularly, **arriving late or leaving early will be considered as missing that particular hour. Missing more than 12 hours automatically means failing the entire course!!!** This is standard UNYP policy.

**Being absent on the day of a quiz, test, exam, or when an assignment is due (homework, essay, presentation, etc.) will result in an F for that particular course requirement.** The only exceptions are written assignments (homework and essays) which are due via email and/or may be handed in by someone in your stead, but the same deadlines apply. **There are no make-up opportunities for any of the course requirements** (tests, presentations, essays homework, etc.).

### Academic Honesty

- The University's rules on academic dishonesty (e.g. cheating, plagiarism, submitting false information) will be strictly enforced. Please familiarize yourself with the STUDENT HONOR CODE or ask your instructor for clarification.
- For examinations: copying from your neighbor, speaking to another student, using a phone, or anything similar will result in you failing the test or quiz. On written papers properly note your sources with academic citations. Cutting and pasting from the internet may be considered plagiarism. If you have questions about this, please consult the instructor.

## 8. General Requirements

- Students are expected to come to class fully prepared to discuss homework readings, projects, or cases.
- Students are expected to attend each class session and participate in a constructive way.
- Students are expected to respect deadlines. Late submissions will automatically result in an F for that particular assignment.
- Students must not disturb the class with mobile devices (mobile phones, laptops, etc.).

## 9. European Credit Transfer and Accumulation System (ECTS)

Students who complete the course will receive 6 ECTS credits, which are the equivalent of 3 American credits. (In other words, 2 ECTS credits equal 1 American credit hour.). Further, 1 ECTS credit corresponds to 25-30 hours of work. Thus, a 6-credit ECTS course (equivalent to a 3-credit American course) will total 150-180 projected work hours. For this course, students are expected to spend time in the following course-related activities:

Class meetings and participation	45 hours
Preparation for quizzes and homework	50 hours
Presentation	15 hours
Midterm exam	20 hours
Final exam	25 hours
TOTAL	155 hours

### **10. Technology Expectations**

This course does not require any special programming or mathematical skills. Students will be introduced to econometric software (Gretl and STATA), but no prior programming knowledge is required. Students are expected to be able to use the internet, a word processor (MS Word or similar – not mandatory), spreadsheet software (MS Excel or similar – not mandatory), and MS PowerPoint (or similar – not mandatory).