



# Lincoln University

## Fall 2022

<b>COURSE:</b>	<b>BA 366 Econometrics</b> (Tuesdays 3:30 – 6:15 PM PST) 3 units (45 hours of lectures) Mastery 2 (M2) Level
<b>INSTRUCTOR:</b>	Igor Himelfarb, Ph.D. <a href="mailto:ihimelfarb@lincolnuca.edu">ihimelfarb@lincolnuca.edu</a>
<b>OFFICE HOURS:</b>	Before and after class by Zoom
<b>TEXT:</b>	Baltagi, B.H. (2011). <i>Econometrics</i> . 5 <sup>th</sup> Ed. Springer
<b>TOOLS:</b>	Students will be introduced to R and <i>Mplus</i> programs. Excel will be used for data management.

### CATALOG DESCRIPTION:

The course introduces students to a comprehensive treatment of econometric methods for linear models. Among topics covered are: the linear regression, linear simultaneous equations systems, maximum likelihood and instrumental variables estimation strategies, hypothesis testing. Different data and variables presentations and features are discussed. (3 units)  
Prerequisite: BA 241 or BA 360

### LEARNING OBJECTIVES:

Econometrics is the intersection of statistical techniques, business, and finance. Econometrics will provide students with a set of tools that are useful for modeling financial/business data, forecasting, and testing beliefs about market behavior. Econometrics is a specialized area of statistics which deals with the measurement of economics and business data. It is broadly applied in business and industry. It requires the application of economics and business theories and use of dedicated statistical software. This application can easily be learned with the aid of personal computers. The study of econometrics addresses the unique features of stochastic behavior which characterize Business and Economics. It involves the study of multiple linear regression and time series analysis and forecasting. Its methods are tailored to deal with the departure of the economic and business behavior from the standard models of regression analysis. In this class, we will start from univariate random variables and their distributions, will

cover linear models and generalized linear models, hypothesis testing, and concepts of bias and risk. Students will be introduced to Constant Expected Return model and Portfolio Theory. Finally, students will be exposed to multivariate statistical concepts of principle component analysis (PCA), exploratory factor analysis (EFA) and confirmatory factor analysis (CFA).

### **COURSE LEARNING OUTCOMES<sup>1</sup>**

	<b>Course LO</b>	<b>Program LO</b>	<b>Institutional LO</b>	<b>Assessment Activities</b>
1	Students will develop understanding of consumers and the role of consumer research in formulating and updating organization's business strategy.	PLO 2	ILO 1b, ILO 2b, ILO 4b	Homework In-class discussions
2	Students will develop proficiency in psychological theories of learning and memory, theories of motivation, and personality	PLO 3	ILO 2b, ILO 7b	Homework In-class discussions
3	Students will develop knowledge in research methodologies that are required to design and implement a consumer research project.	PLO 4	ILO 4b, ILO 5b, ILO 6b	Homework In-class discussions
4	Students will be able to formulate a consumer-centered strategy build on data-driven study of the market.	PLO 5	ILO 4b, ILO 5b	Homework In-class discussions
5	Students will be mindful of ethical and moral issues related to conducting consumer research, as well as to implementing its findings.	PLO 6	ILO 3b	Homework In-class discussions

### **INSTRUCTIONAL METHODS:**

This class is 100% online. Every student is welcome to participate in intensive classroom activities. Reading and problem solving assignments will be given throughout the course.

### **CLASS ATTENDANCE:**

Students are expected to attend class on a regular basis. Attendance is crucial to performing well in this course, as some of the material presented may not be found in the textbook. Further, the lecture and classroom demonstrations will emphasize and expand upon important topics found in the textbook. Thus, it is vital that you take thorough notes in class.

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<sup>1</sup> Detailed description of learning outcomes and information about the assessment procedure are available at the [Center for Teaching and Learning](http://ctl.lincolnuca.edu) website (ctl.lincolnuca.edu).

### ASSIGNMENTS:

There will be bi-weekly homework assignments. These assignments will typically consist of some theoretical exercises, conducting analyses on provided data and turning in a results report (write-up) describing the findings, but may include other questions. The purpose of the assignments will be to provide a medium through which you really learn the material. Students are welcome to work with other classmates on the homework, but it is expected that each student turns in his/her own, independently written, homework. Any indication that work was directly shared will not be tolerated and will result in a non-passing grade.

There will be a number of readings (mostly journal articles) assigned periodically in addition to the reading in the textbook.

**In accordance with the university policy on cheating and plagiarism, any student who does not do his/her own write-up completely independently on any assignment will fail the assignment.**

### EXAMS:

There will be two exams — a midterm and a final. To assess your learning in this course, exam questions will be derived from the lecture and textbook. Topics covered in lecture will be of major emphasis on the exam, and should be the focus of your textbook readings, though there will be some test questions found in the assigned readings but not covered in the lecture. To avoid guessing, there will be no multiple-choice questions on the exams. Exams may include conceptual or theoretical questions, Excel output interpretations or questions that require simple calculations. On the day of the exam, remember to bring a non-graphing calculator (cell phone calculators are unacceptable). **All exams are open books and open notes.**

### GRADING PLAN:

Percentage	Grade
90-100%	A
80-89%	B
70-79%	C
60-69%	D
below 60%	F

Weights	
Homework	20%
Quizzes and class participation	10%
Midterm	30%
Final	40%

## CLASSROOM POLICY:

**I am available and will do my best to help you learn and succeed.** Questions and points of discussion are encouraged. I am also highly accessible for discussions if you wish to receive additional information or learn more about a certain topic or need help with data analysis. Please visit me during my office hours, or talk to me immediately after class, if you need study tips or additional help. No appointment is required for my office hours.

## TENTATIVE CLASS SCHEDULE:

Week	Content
Week 1	Review of basic statistical concepts.
Week 2	Normal-distribution-based techniques. Linear models.
Week 3	Linear models (continued).
Week 4	Linear models (continued).
Week 5	Solutions to violations of normality. Generalized linear models.
Week 6	Generalized linear models (continued).
Week 7	Generalized linear models (continued).
week 8	Midterm
Week 9	Reliability
Week 10	Exploratory Factor Analysis.
Week 11	Exploratory Factor Analysis (continued).
Week 12	Confirmatory Factor Analysis.
Week 13	Confirmatory Factor Analysis (continued).
Week 14	Thanksgiving brake
Week 15	Review for final exam.
Week 16	Final Exam.

Note: Instructor reserves the right to modify the content of this syllabus.

**GOOD LUCK!**

**Syllabus Reviewed: 8/15/2022**