

מבוא לאקונומטריקה (142.1.1081) Introductory Econometrics

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Course Meeting Times

Lectures: 1 sessions / week, 2.25 hours / session: TBA / Language: English

Recitations: 1 session / week, 1.5 hour / session: TBA / Language: Hebrew

Description

This course covers the statistical tools needed to understand empirical economic research and to plan and execute independent research projects. Topics include statistical inference, regression, generalized least squares, instrumental variables, simultaneous equations models, and evaluation of government policies and programs.

Prerequisites

Statistics A and B (142.1.1011, 142.1.1021) or equivalent – סטטיסטיקה א ו-ב
principles of microeconomics (142.1. 0030, 142.1. 0211) - מבוא א ו-ב

Course Requirements

Each week there are two lectures and a weekly recitation. There will be 12 problem sets that will be handed and reviewed during recitations. Each review problem set is worth 0.5 bonus points (up to a maximum of 3 bonus points). Consult with classmates on problem sets if you get stuck, but written solution sets should be your own work. Stata logs should be submitted with solution sets (available in department labs and on BGU's network).

In addition to the problem sets students will hand-in a **mandatory** midterm project that will have both analytical and computer-exercise components. A grade of 56 or better on midterm project is required to be eligible to take the final exam.

Textbooks

Wooldridge, Jeffrey M. *Introductory Econometrics: A Modern Approach*. 3rd ed. Mason, OH: Thomson/South-Western, 2006. ISBN: 9780324289787.

Angrist, & Pischke, J.-S. (2015). *Mastering "metrics" : the path from cause to effect*. Princeton University Press.

Video

You can also follow "Mastering Econometrics with Joshua Angrist" at:
<https://mru.org/mastering-econometrics-joshua-angrist>



Grading

ACTIVITIES	PERCENTAGES
Midterm project	20%
Final exam	80%

Course Outline

Part I

A. Short Review of probability and statistics

B. Simple Linear Regression Model (SLR)

- OLS regression estimates.
- Statistical properties of OLS estimates; Gauss-Markov theorem.
- Residuals, fitted values, and goodness of fit.
- Statistical inference
- Confidence intervals

C. Multivariate regression (MLR)

- Regression, causality, and control; anatomy of multivariate regression coefficients
- Omitted variables formula, short vs. long regressions.
- Dummy variables and interactions.
- testing linear restrictions using F-tests

Part I

D. Inference problems - heteroscedasticity and autocorrelation

- Heteroscedasticity, consequences of; weighted least squares.
- the linear probability model.
- Serial correlation in time series, consequences of; quasi-differencing; common-factor restriction; Durbin-Watson test for serial correlation

E. Endogeneity: omitted variables, measurement errors, & simultaneous equations.

- Using Instrumental variables and Two-stage least squares.
- Sampling variance of 2SLS estimates.
- Simultaneous equations models
 - Simultaneous equations bias
 - The identification problem
 - The structure and the reduced form
 - The use of IV