METU **Spring 2013-2014**
Department of Economics
ECON 301 (01)
Introduction to Econometrics I

Course Syllabus

The course provides an elementary but comprehensive introduction to the practice of econometrics. It deals with applications of statistical methods to the testing and estimation of economic relationships. The main topics covered include the simple linear regression model and ordinary least squares estimation (OLS), extensions of the simple linear regression model, statistical inference, prediction, two variable regression model, multiple regression model, multiple regression model in matrix form, Frisch-Waugh theorem, estimation and inference, specification analysis and model evaluation, non-nested tests and encompassing forecasting, multicollinearity, nature and consequences of multicollinearity, detection of multicollinearity and estimation, dummy independent variables, testing for structural change, recursive least squares and recursive stability tests, seasonality, and general to specific modeling.

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Course Schedule

Wednesday	12:40-15:30	FZ16
Thursday	09:40-10:30	FZ09

Rec. and Lab. Hours To be announced

Office Hours To be announced

Textbook Gujarati, D., and Porter, D. (2009) *Basic Econometrics*, Fifth Edition, McGraw-Hill.

Recommended Books Hill, C., Griffiths, W. E., and Lim, G., (2011) *Principles of Econometrics*, Fourth Edition, Wiley.

Thomas, R. L. (1996) *Modern Econometrics*, Prentice Hall, New York.

Assessment The course will be assessed as follows:

Lab Exam	% 3	
Assignments	% 2	
First Midterm (April 2, 2014)	% 25	[Exam date will not be changed]
Second Midterm (April 30, 2014)	% 30	[Exam date will not be changed]
Final Exam	% 40	[Exam date will not be changed]

Course Home Page The class web site can be accessed through *online.metu.edu.tr*. The home page will be used primarily to post lecture notes, data sets, assignments, and announcements. We will also use the e-mail feature of *online.metu.edu.tr*.

Softwares Gretl and Excel.

Further Requirements You are expected to attend classes regularly.

Course Outline

Week	Subjects
1	♣ Refreshment: Central Limit Theorem ♣ Linear Regression Model and Assumptions of Classical Linear Regression Model (CLRM)
2	♣ OLS Estimation - Mean and Variance of OLS Estimators ♣ Variance of the random variable u – Covariance of OLS Estimators
3	♣ Gauss Markov Theorem and Efficiency of OLS estimators - Coefficient of Determination ♣ Functional Forms of Regression Models - Scaling and Units of Measurement - Large Sample Properties
4	♣ Prediction ♣ Multiple Regression - Meaning of Coefficients - General Linear Model – OLS Estimation
5	♣ Assumptions of the CLRM in Matrix Notation – Mean and Variance of OLS Estimators – Minimum Variance ♣ Estimation of Disturbance Variance - The Residual Maker and the Hat Matrix - Partitioned Regression
6	♣ Ballatine Diagram and The Frisch-Waugh Theorem ♣ Coefficient of Determination - Omitted Variable Bias - Irrelevant Variable Case
7	♣ Testing Hypotheses and Confidence Intervals I ♣ Testing Hypotheses and Confidence Intervals II
8	♣ Prediction in Multiple Regression Model - Partial Correlation ♣ Multicollinearity
9	♣ Dummy Variables I ♣ Dummy Variables II
10	♣ Dummy Variables III ♣ Heteroscedasticity I
11	♣ Heteroscedasticity II ♣ Heteroscedasticity III
12	♣ Model Specification and Diagnostic Testing I ♣ Model Specification and Diagnostic Testing II
13	♣ General to Specific Modeling I ♣ General to Specific Modeling II

Make-up Exam Policy

Students must provide an official medical report taken from (or approved by) the Medical Center of METU. The make-up exam will not be given for any exam conflicts, so please be careful for the exam dates of your other courses (*ECON301 exam dates announced in this syllabus will not be changed!*).
Attention: The make-up exams can be carried out as oral exams!