UNIVERSIDAD CATÓLICA DEL NORTE

Course Schedule

I. Course Identification

Major: Business Management
Unit: Department of Economics
Name of the course: Econometrics
Code: EC402
Schedule: Second year

Prerequisites:	**Prerequisite for:**
Statistics I Macroeconomics I	Quantitative Methods for Management

II. Course Organization

	Direct	**Indirect**
Lecture Hours	3	3
TA Hours	1.5	
Lab Hours	1.5	
Problem Set Hours		
Weekly Total Hours	**9**	
Credits	**6**	

III. Purpose of the Course

Upon completion, the student will be able to formulate relationships between economic and business variables, collect data and specify an econometrics model to quantify them, and assess the results obtained. You will be able to detect estimation problems arising from the violating assumptions required and propose solutions when possible. The student will also be able to interpret the economic and statistical significance of the results obtained and how to use econometrics models to forecast using software tools such as R, Gretl, and Excel

IV. Textbooks and Other References

Main textbooks:

Gujarati, D. (2004). Econometrics. McGrall-Hill.

Novales, A. (1997). Statistics and Econometrics. Mc Graw Hill.

Wooldridge, J. (2006). Introduction to Econometrics: A Modern Approach. Thomson.

Complementary readings:

Dougherty, C. (2002). Introduction to Econometrics. New York: Oxford University Press.
Greene, W. H. (2003). Econometric Analysis. Upper Saddle River: Prentice-Hall.
Kennedy, P. (2003): A guide to Econometrics. Cambridge: MIT Press.
Ramanathan, R. (2002): Introductory Econometrics with applications. Southwest Collage Publishers.
Alonso, A., J. Fernández and I. Gallastegui (2005). Econometrics. Pearson Education.

V. Thematic Units

1. LINEAR REGRESSION

A. THE SIMPE REGRESSION MODEL
- Goal and foundational
- Assumptions
- Interpreting regression coefficients: applications
- Estimation: OLS estimation, statistical and mathematical properties
- Functional form: Applucatyion using CES functions
- Correlations and R2
- Confidence intrevals estimation and residual variance
- Hypothesis testing
- Economic applications: human capital model and demand for products
- Using regression for prediction
- Model selection

B. MULTIPLE REGRESSION ANALAYSIS
- Specifying econometric models with cross-sectional data
- Interpreting partial regression coefficients
- Hypothesis testing
- Binary outcome models: foundations and applications

C. Testing OLS assumpations
- Specification tests (functional form, bad controls)
- Heteroskedasticity
- Serial correlation
- Endogeneity: measurement error, simultaneoty
- Multicollinearity

2. INTRODUCTION TO TIME SERIES ECONOMETRICS

A. Introduction: trends , seasonality, and decomposition

B. ARMA and ARIMA models
C. Prediction using time series models

VI. Learning Outcomes

A. Determine and measure relationships between variables using economic theory and software tools.
B. Perfom hypothesis testing for regression coeffecients and determine the statistical and economic significance fo the results
C. Use econometric models for economic and business prediction problems
D. evaluate OLS assumptions
E. Write an empirical Project on an economic problema by collecting data and using economic theory to guide model selction and interpretation

VII. POLÍTICAS DE APROBACIÓN

A. The minimum note to approve is 4 (4.0)
B. Minimum number of exams: 3