COURSE OUTLINE

BSE3703 Econometrics for Business I

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1. COURSE OVERVIEW

This course is designed to impart to students the highly valued competency to build econometric models – a widely used statistical technique to analyze and quantify the impact of real-world variables in the business world. Apart from the fundamental grasp on econometric modelling, students will ultimately gain an array of skills (and knowledge) required to build an adequate econometric model at the corporate benchmark. The effective use of real-world case studies will be integrated into the topics of the course, with an aim to reconcile textbooks theories with the real-world context. Topics include regression models, the use of dummy and instrumental variables in econometric models, the implications of heteroskedasticity, multicollinearity and endogeneity bias in econometric models, the appropriate use of difference-in-difference and panel data estimators. Above all, students will also be introduced to time series processes commonly observed in the real-world.

2. LEARNING OUTCOMES

Upon completion of this course, students will be able to:

- understand the fundamental concepts behind econometric modelling;
- understand the properties of OLS estimators used in regression models;
- build an adequate regression (econometric) model;
- interpret the statistical output of regression models;
- perform forecasting and estimation using regression models;
- appreciate the effective use of dummy and instrumental variables in regression models;
- identify problems (heteroskedasticity, multicollinearity, endogeneity bias) commonly associated with regression models;
- apply the appropriate approaches to correct for bias in regression models;
- explain the difference-in-difference and panel data estimators; and
- understand univariate time series processes.

3. ASSESSMENT

Assessment Categories	Weightage (%)
Midterm Test	30
Group Project	30
Final Exam	40
Total	**100**

4. TEACHING/LEARNING VEHICLES

- **Lectures:** The respective lecture slides will be made available at Canvas before each lecture. Students are expected to visit the site regularly and preview the lecture slides (and relevant readings) before coming to class.

- **Recommended Reading:** Stock J.H., and Watson M.W. Introduction to Econometrics 4th ed. Pearson.
- **Midterm:** The midterm test covers lecture materials from Week 1 through Week 6. Details about the midterm test will be announced in class and posted on Canvas. No make-up midterm is available for a missed test.
- **Group Project:** Assessment of group project will be based on group-work. All members in the group will receive equal assessment for their aggregate work.
- **Final Exam:** The final exam covers all lecture materials through the course. No make-up exam is available for a missed exam.

5. TENTATIVE SCHEDULE

Week	Lecture Topic
Week 1	Technical Background
Week 2	Simple Linear Regression Model
Week 3	Multivariate Regression Model
Week 4	Dummy Variables
Week 5	Heteroskedasticity
Week 6	Multicollinearity
Recess Week	
Week 7	**Midterm**
Week 8	Endogeneity and Instrumental Variables
Week 9	Difference-in-Difference Estimator
Week 10	Panel Data Estimators
Week 11	Introduction to Time Series Processes
Week 12	Review and Revision
Week 13	**Group Project Presentation**
Reading Week	
Final Examination	