Course Outline

Course Code   : BSE3703
Course Title   : Econometrics for Business I
Semester   : Semester 1, Academic Year 2024-25
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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, and the various statistical tools/approaches to correct for bias in econometric models. Above all, students will also be introduced to the types of univariate time series process, and will acquire the useful skill to build appropriate univariate time series models for forecasting in the real-world context.

Course Objectives

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

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

General Guide & Reading

Stock J.H., and Watson M.W. Introduction to Econometrics 4th ed. Pearson.

Assessment

Assessment Components	Weightage
Class Participation	15
Midterm Test	30

| Group Project and Presentation | 25 |
| Final Test | 30 |

Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is "the practice of taking someone else's work or ideas and passing them off as one' own" (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubt, you should consult your instructor.

Additional guidance is available at:
- http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct
- http://nus.edu.sg/osa/resources/code-of-student-conduct

Schedule and Outline

Lesson/ Week	Date	Topic	Chapter	Activity (preparation / cases & assignments / follow-up readings & resources)
1	14 Aug 2024	Technical Background	2, 3	General Guide & Reading
2	21 Aug 2024	Simple Linear Regression	4	General Guide & Reading
3	28 Aug 2024	Multivariate Regression Model	6	General Guide & Reading
4	4 Sep 2024	Multivariate Regression Model (Hypothesis Testing and Inference)	7	General Guide & Reading
5	11 Sep 2024	Dummy Variables and Properties of OLS Estimators	5.3	General Guide & Reading
6	18 Sep 2024	Heteroskedasticity	5.4	General Guide & Reading
7	2 Oct 2024	Midterm Test		
8	9 Oct 2024	Multicollinearity	6.7	General Guide & Reading
9	16 Oct 2024	Endogeneity and Instrumental Variables	12	General Guide & Reading
10	23 Oct 2024	Univariate Time Series Processes	15	General Guide & Reading
11	30 Oct 2024	Univariate Time Series Models	15	General Guide & Reading
12	6 Nov 2024	Group Project Presentation		
13	13 Nov 2024	Final Test		