BECO4004, Applied Econometrics, course outline and schedule, AY2021-2022.

Course description

The course teaches students how to formulate and solve econometric problems and to conduct applied research using econometric tools. It provides students with a good understanding of econometric models for discrete and limited dependent variables, enabling students to develop practical skills necessary to perform research using empirical data.

Purpose

This course aims at introducing various econometric models and their applications. Basic statistics and econometrics will be reviewed. Areas to be covered include topics in cross section model (endogeneity, program evaluation etc.), panel data models and time series models. However, we may not be able to cover all the topics due to time constraints. The contents will be revised according to the progress of teaching.

Intended outcomes

By the end of the course the students will have developed skills needed for empirical research using econometrics techniques. Students will also be able to identify the suitable model for different finance and economic data. Through their computer lab sessions and assignments, they will be also trained in conducting research using econometric software.

Contents

Topic 1: Review of statistics and econometrics. (Week 1 to Week 2)
Topic 2: The Endogenous problem, instruments, Two Stage Least Squares. (Week 3)
Topic 3: Policy evaluation, Difference-in-Differences method. (Week 4)
Topic 4: Basic panel data models. (Week 5)
Topic 5: Binary choice models. (Week 6)
Topic 6: Time series, serial correlation tests, structural changes. (Week 7 to Week 8)
Topic 7: AR, MA, ARMA models. (Week 9 to Week 10)
Topic 8: Forecasting: model building, selection, evaluation. (Week 11 to Week 14)

Learning Resources

The course follows no textbook. Participant students receive class notes and exercises.

The following references are also available:

1. Jeffrey M. Wooldridge, Introductory Econometrics: A Modern Approach, 5th Edition.
2. Francis X. Diebold, Forecasting in Economics, Business, Finance and Beyond. An electronic version can be obtained from the author's website: www.ssc.upenn.edu/~fdiebold/Teaching221/Forecasting.pdf

Instructor

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Office Hour by appointment

Assessment:

Class activity (10%)
Mid-Term test (30%)
Group project (20%)
Final Exam (40%)

Class schedule:

12 Jan	Class 01, unit 1	Revision
19	Class 02	
26	Class 03, unit 2	Instruments
16 Feb	Class 04	
23	Class 05, unit 3	DD, fixed effects
02 Mar	Class 06, unit 4	Panel
09	Class 07	
16	Class 08	Mid-term test
23	Class 09, unit 5	Logit, Probit
30	Class 10	
06 Apr	Class 11, unit 6	Time-series
13	Class 12	
20	Class 13, unit 7	Box-Jenkins
27	Class 14, unit 8	Forecasting
04 May	Class 15	