

# ECON 5033 Econometrics I

NATIONAL TSING HUA UNIVERSITY

Fall 2007

**Instructor:** Shih-Chang Lin

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**Time and Location:** Monday 9:00-12:00 pm, HSS-C507

**Office Hours:** By appointment

**Course Webpage:** Blackboard System – <http://elearn.nthu.edu.tw/bin/index.pl>

**Teaching Assistant:** Chin-Yuan Chang, Email: [pimpom@ms2.kntech.com.tw](mailto:pimpom@ms2.kntech.com.tw)

**Teaching Assistant Hours:** TBA

## **Course Description:**

This course is designed for first-year Economics graduate students. The basic methods, modern econometric methods and theory are covered. The intention is that the material will provide a foundation for applied research in economics. It will provide an initial opportunity for you to develop the skills to conduct and understand empirical work. The coursework will be theoretical in nature, but students will also be required to use the methods to estimate certain models and test certain hypotheses.

## **Prerequisites:**

Basic calculus, familiarity with probability, statistics, and matrix algebra will be assumed.

**Textbook:**

Basically, I will hand out weekly lecture notes which are the summary of literature and textbooks.

- My Lecture Notes.
- [JD] Johnston and DiNardo, 1997, *Econometric Methods*, 4th edition, McGraw Hill.
- [G] Greene, W. H., 2003, *Econometric Analysis*, 5th edition, Prentice Hall.

**References:**

Note that you don't need to buy the following references. If you are not comfortable with basic concepts of econometrics, it would be helpful to consult to above textbooks and the following references anytime.

- [W] Wooldridge, J. M., 2000, *Introductory Econometrics: A modern approach*, South-Western.
- [K] Kennedy, P. A., 1998, *A guide to Econometrics*, 4th edition, MIT Press.
- [DS] DeGroot M. H. and M. J. Schervish, 2002, *Probability and Statistics*, 3rd edition, Addison Wesley.
- [CB] Casella, G. and R. L. Berger, 2001, *Statistical Inference*, 2nd edition, Duxbury.
- [R] Ruud, P. A., 2000, *An Introduction to Classical Econometric Theory*, Oxford.
- [DM] Davidson, R. and J. D. MacKinnon, 2004, *Econometric Theory and Methods*, Oxford.

**Software:** You are welcome to use any econometric or statistic softwares such as *Matlab*, *TSP*, *Gauss*, *Stata*, *Eviews*, or *Limdep*.

**Grading:** There will be weekly assignments<sup>1</sup>, two midterm exams and a final. Note that overdue assignment will **NOT** be accepted. They will count toward the final grade as follows.<sup>2</sup>

Assignments	15%
Midterm I	25%
Midterm II	25%
Final	35%.

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<sup>1</sup>Class assignments will be passed out approximately every week. These assignments will include both problem solving and computer tasks.

<sup>2</sup>Bonus will be awarded for the typo corrections.

**Course Organization:** 17 weeks / lectures [Tentative!!]

1. Sept. 10: Organization
2. Sept. 17: Statistical review and Large sample theory
3. Sept. 24: Multiple regression model [I]
4. Oct. 1: Multiple regression model [II]
5. Oct. 8: Multiple regression model [III]
6. **Oct. 15: Midterm Exam I [In class]**
7. Oct. 22: Generalized least square
8. Oct. 29: Instrumental variable
9. Nov. 5: Autocorrelation
10. Nov. 12: Heteroskedasticity
11. **Nov. 19: Midterm Exam II [In class]**
12. Nov. 26: Numerical Optimization
13. Dec. 3: Discrete choice model
14. Dec. 10: **Out of town for seminar – No class meeting**
15. Dec. 17: Sample selection model
16. Dec. 24: Panel data
17. **Dec. 31: Final Exam**