

ECON 7023 Advanced Probability & Statistics

NATIONAL TSING HUA UNIVERSITY

Fall 2009

Instructor: Eric S. Lin

Contact Information: Office: CTM-712, E-mail: slin@mx.nthu.edu.tw, Tel: 574-2729

Time and Location: Tuesday 9:00-12:00, CTM-732

Office Hours: Monday 1:00-2:00 PM or by appointment

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

Teaching Assistant: Not Offered

Teaching Assistant Hours: Not Offered

Course Description:

This is a preparation course for most other graduate economic courses such as econometric theory, micro and macro-economic theory. We basically cover an intermediate level course with a focus on the theoretical foundations of probability and statistics. However, this course does not cover measure theoretic probability but some terminology from measure theory will be introduced.

Prerequisites:

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

Textbook:

- DeGroot M. H. and M. J. Schervish, 2002, *Probability and Statistics*, 3rd edition, Addison Wesley.

References:

Note that you don't need to buy the following references but it would be helpful to consult to them anytime.

- Casella, G. and R. L. Berger, 2001, *Statistical Inference*, 2nd edition, Duxbury.
- Ramanathan, R., 1993, *Statistical Methods in Econometrics*, Academic Press.
- Hogg R. V. and A. T. Craig, 1978, *Introduction to Mathematical Statistics*, 4th edition, Macmillan.
- Bierens, H. J., 2004, *Introduction to the Mathematical and Statistical Foundations of Econometrics*, Cambridge University Press.

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 assignments¹, two midterm exams and a final. Note that overdue assignment will **NOT** be accepted. They will count toward the final grade as follows.

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

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

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

1. Sept. 14: Organization
2. Sept. 21: Probability theory
3. Sept. 28: Random variables and distributions I
4. Oct. 5: Random variables and distributions II
5. Oct. 12: Expectation
6. **Oct. 19: Midterm Exam I [In class]**
7. Oct. 26: Special distributions I
8. Nov. 2: Special distributions II
9. Nov. 9: Estimation I
10. Nov. 16: Estimation II
11. **Nov. 23: Midterm Exam II [In class]**
12. Nov. 30: Sampling Distributions I
13. Dec. 7: Sampling Distributions II
14. Dec. 14: Hypothesis Testing I
15. Dec. 21: Hypothesis Testing II
16. Dec. 28: **Out of Town for Seminar – No Class Meeting**
17. **Jan. 4: Final Exam**