

## Economics 205B: Econometric Methods II

Winter Quarter 2005

**Instructor:** Tae-Hwy Lee (tae.lee@ucr.edu)

**Lectures:** MW 10:10 - 11:30, SPR 2206

**Office Hours:** M 9:00 - 10:00

**TA:** Weiping Yang (weiping.yang@email.ucr.edu)

**Discussion:** W 9:10 - 10:00, SPR 2206

**Office Hours:**

**Course Description:** The course covers the basic methods and theory of modern econometrics while it is also intended to provide a foundation for applied research in economics. Familiarity with probability, statistics, and matrix algebra is assumed. We use GAUSS for computation.

### Course Outline:

1. Linear regression: OLS, GLS, QML, IV, 2SLS, GMM, EL, hypothesis testing, asymptotics, model selection
2. Specification issues: omitted variables, irrelevant variables, nonlinearity, heteroskedasticity, autocorrelations
3. Nonlinear regression: numerical optimization, asymptotic distribution, hypothesis testing
4. Discrete and limited dependent variable models: binary choice, count data, censored data, Logit, Probit, Tobit.
5. Linear regression when  $n^{-1/2} \sum_{t=1}^n X_t \varepsilon_t$  and  $n^{-1} \sum_{t=1}^n X_t X_t'$  are not  $O_p(1)$

**Exams and Grading:** There will be weekly homework assignments (20%), a midterm exam (30%, in class, February 14), and a final exam (50%, 9 am-12 noon, March 16). The final exam is comprehensive. Homework problem sets will consist of analytical exercises as well as computer exercises. Late homework will not be considered. Questions regarding GAUSS programming should be directed to the TA. The assignments will be graded by the TA and will then be reviewed by the instructor. The exams will be graded by the instructor. You are fully responsible for following up all the announcements made during the lectures. The computation should be done with GAUSS. The latest version of GAUSS (version 6.0) is installed in Collab.

### References

- Hayashi, Fumio (2000), *Econometrics*, Princeton University Press. <http://www.e.u-tokyo.ac.jp/~hayashi/>
- White, Halbert (2001), *Asymptotic Theory for Econometricians*, 2ed., Academic Press.
- Hansen, Bruce (2004), *Lecture Notes*, <http://www.ssc.wisc.edu/~bhansen/notes/notes.htm>
- Eric Zivot's GAUSS Webpage: <http://faculty.washington.edu/ezivot/gaussfaq.htm>