West Virginia University, Department of Economics Econ 725: Econometrics 1, Spring 2012, 10663, 001 Professor Feng Yao

Meeting: Tuesday and Thursday: 11:30 - 12:45pm; Location: Oglebay Hall 106 Office: B & E 406; Office hour: Tuesday and Thursday 1:00-2:30pm Email: feng.yao@mail.wvu.edu; Website: http://community.wvu.edu/~fy006/

Prerequisites: Undergraduate Econometrics or equivalent

Teaching assistant: Sandeep Sharma, Email: Sandeep.Sharma@mail.wvu.edu Office: B&E 256, Office hour: 4-5pm Monday and Wednesday

Course objective and overview: This course is the first graduate course in econometric theory with applications in economics. The emphasis is on the estimation and inference in the regression models. We will describe and develop the statistical or econometric theory that support our topics below, also implement the estimators and tests correspondingly with a computer program.

Required textbook: Davidson, R. and J.G. MacKinnon, 2004, Econometric Theory and Methods, Oxford University Press, Oxford, U.K.[dm]

Recommended textbook:

- Wooldridge, Jeffrey, Introductory Econometrics: A Modern Approach, 4th Edition, 2009, South Western. [w1]
- Wooldridge, J. M., 2002, Econometric analysis of cross section and panel data. MIT press. [w2]

Reference books in Econometrics

- Davidson, J., 2000, Econometric Theory, Blackwell Publishers, Oxford.[d1]
- Schmidt, P., 1976, Econometrics, Marcel Dekker, New York.[s]

Reference books in Probability, Statistics and Asymptotic Theory

- Mittelhammer, R. C., 1999, Mathematical Statistics for Economics and Business, Springer. [m]
- Wackerly, D., Mendenhall, W. III, Scheaffer, R. L., 2001, Mathematical Statistics With Applications, Sixth Edition, Duxbury Publishing. [wms]
- Davidson, J., 1994, Stochastic Limit Theory, Oxford University Press, Oxford.[d2]
- Spanos, A., 1999, Probability Models and Inference, Cambridge University Press, New York.[sp]
- White, H., 2001, Asymptotic Theory for Econometricians, revised edition, Academic Press, New York.[wh]

Course Schedule and reading (Subject to change):

- 0. Probability Theory for Applied Econometrics. (handout, [m], chapter 2 and 3 in [w2])
- 1. Regression Models(Chapter 1 in [dm], chapter 1 in [w2]).

2. Estimation in Linear Regression: geometry and properties (Chapter 2,3 in [dm], chapter 4 in [w2]).

3. Inference in linear regression: Hypothesis testing and confidence intervals(Chapter 4,5 in [dm]).

4. Nonlinear regression and relax classical regression model assumptions: GLS and IV estimation(Chapter 6,7,8 in [dm], chapter 5 and 6 in [w2]).

Grading: The grade is a nonlinear monotone function of the degree of hard working. Your grade will be calculated using the following weight: homework sets (10% in total); Midterm exam(40%); Final exam(50%).

Observations: 1. The data, solutions to starred exercises, and corrections are available at http://www.econ.queensu.ca/ETM/.

2. Problem Sets will be assigned as necessary from both primary textbooks and other sources. Although you may work together, you will be lost on the exams if you dont develop the ability to do the homework yourself. So you should work on the homework independently.

3. Class notes and announcement will be posted on ecampus. Read them carefully.

4. This is primarily a course in theory, intended to provide you with the tools you need to understand what you are doing when you eventually work with data. We will illustrate the principles, however, by working with some data sets, using software. Some of the homework questions will involve the use of data. Therefore, a mathematical-statistical software will be needed. You feel free to choose the software to do your homework, however, assistance in E-Views (or GAUSS) will be provided. E-Views is available on the B&E LAN, but it can also be obtained for your own personal computer for low cost for a license with limit on the sample size.

Days of Special Concern:

WVU recognizes the diversity of its students and the needs of those who wish to be absent from class to participate in Days of Special Concern, which are listed in the Schedule of Courses. You should notify my by the end of the second week of classes or prior to the first Day of Special Concern, whichever is earlier, regarding Day of Special Concern observances that will affect your attendance. I will make reasonable accommodations for tests that you may miss as a result of observing a Day of Special Concern.

Statement on Social Justice:

West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect, and nondiscrimination. Our university does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestion as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangement with Disability Services (293-6700).

Statement on Academic Dishonesty:

West Virginia University expects every member of its academic community to share the historic and traditional commitment to honesty and integrity. Academic dishonesty is defined to include but is not limited to the following: plagiarism; cheating and dishonest practices in connection with examinations, papers and projects; forgery, misrepresentation and fraud. Such behavior will not be tolerated and will be handled according to university guidelines (please refer to the Student Handbook for details).