ECON 6312: Econometric III

Spring 2022

Instructor:	Sung Hoon Choi	**Time:**	TuTh 11:00AM – 12:15AM
Email:	sung_hoon.choi@uconn.edu	**Place:**	OAK 312

Office Hours: Tuesday 1:00 - 2:00 and by appointment.

Teaching Assistant: Dingxian Cao (dingxian.cao@uconn.edu)

Course Description: This course is required for all second-year Ph.D. students in economics. A basic understanding of econometrics at the level of Econ 6310 and 6311 will be assumed. This course will mainly introduce students to Time Series Analysis in econometrics. In addition, as time permits, special topics such as Forecasting, Large Panel Data and some recent econometric literature will be considered.

Course Website: The huskyCT website, https://lms.uconn.edu/, contains all the information for this course, including lecture notes, reading assignment, references, homework, projects, updated syllabus, as well as supplemental material and exercises.

Main References:

- Hamilton, James D. Time Series Analysis. Princeton University Press, 1994.

Easier references:

- Wooldridge, Jeffrey M. Introductory econometrics: A modern approach. Cengage learning, 2015.

- Stock, James H., and Mark W. Watson. Introduction to econometrics. New York: Pearson, 2012.

Prerequisites: ECON 6310 and Econ 6311 (Econometrics I and II).

Software: Python, R, or Matlab

Class Policy and Grading: Regular attendance is essential and expected. Participation (5%). Homework (30%). Midterm (30%). Final Exam/Project (35%).

Tentative Course Outline:

1. Part 1. Stationary Time Series

    - AR, MA, and ARMA Models
    - Heteroskedasticity and Autocorrelation Consistent (HAC) Covariance Matrix Estimation
    - Frequency domain analysis
    - Model selection and information
    - Estimation (e.g., MLE, GMM)

2. Part 2. Non-Stationarity and Unit Root Test

    - Random Walks and Spurious Regression
    - Unit Root Testing and Dickey-Fuller Distribution)

- Stochastic and Deterministic Trends

3. Part 3. Mutivariate Stationary Analysis

   - VARs: estimation and testing
   - VARs: Interpretation - IRFs and FEVDs
   - Factor model and FAVAR

4. Part 4. Multivariate Non-Stationary

   - Multivariate unit roots and co-integration

5. Part 5. Introduction to Forecasting

   - Forecasting Time Series
   - Model Selection
   - Testing

6. Part 6. Further Topics (e.g., Large Panel Data), as time permits

Important Dates:

Midterm .... TBA
Final Project .... TBA

Due Dates and Late Policy: All due dates and deadlines will be clearly announced in the class. The instructor reserves the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate manner. Late policy is that any submission later than the due dates or deadlines will receive a late penalty on the grades.

Academic Integrity: Academic honesty is fundamental to the activities and principles of a university. All members of the academic community must be confident that each personís work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, or collaboration, consult the course instructor.

Students with Disabilities: The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.