The New School
The New School for Social Research
Fall Term 2013

Syllabus for GECO 6282
Advanced Econometrics II

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Lecture:	M 18:00-19:50
Office hours:	Mondays 2:00–3:00pm

Course Description and Objectives

The primary purpose of this course is to introduce you to a variety of state-of-the-art estimation techniques used in empirical macroeconometric research. A special emphasis will be put on multivariate time series analysis (VAR & VECM modeling). Nonlinear time series models as well as estimation techniques for panel data will also be handled if the time permits.

Course Prequisites

GECO 6281 or equivalent. This assumes that students have a working knowledge in econometric theory, matrix algebra and multivariate calculus.

Course Requirements/Graded Activities

Students are expected to participate actively in class, to solve and to submit homework assignments, as well as to write an in-class midterm exam, and submit a final research paper at the end of the semester. The midterm exam will take place during regular class time in the regular class room on the date listed above. There will be NO make-up exams.

The midterm exam will take place on the following date:

- **Midterm Exam:** October 23, 10:00am

Final Grade Calculation

Grading will be based on class participation (10%), solutions of homework exercises (30%), a midterm exam (30%) and a final research paper (30%).

Course Textbooks

Enders, W. (2009), *Applied Econometric Time Series*, 3rd ed., John Wiley & Sons, Inc.

Favero, C. A. (2001), *Applied Macroeconometrics*, Oxford University Press, Oxford.

*Hamilton, J. D. (1994), *Time Series Analysis*, Princeton University Press.

*Hayashi, F. (2000), *Econometrics*, Princeton University Press, Princeton.

Lütkepohl, H. (2010), *New Introduction to Multiple Time Series Analysis*, Springer, Berlin.

Further Resources

The university provides many resources to help students achieve academic and artistic excellence. These resources include:

- The University (and associated) Libraries: http://library.newschool.edu
- The University Learning Center: http://www.newschool.edu/learning-center
- University Disabilities Services: http://www.newschool.edu/student-services/student-disability-services . In keeping with the universitys policy of providing equal access for students with disabilities, any student with a disability who needs academic accommodations is welcome to meet with me privately. All conversations will be kept confidential. Students requesting any accommodations will also need to contact Student Disability Service (SDS). SDS will conduct an intake and, if appropriate, the Director will provide an academic accommodation notification letter for you to bring to me. At that point, I will review the letter with you and discuss these accommodations in relation to this course.

Policy on Attendance and Lateness

Absences may justify some grade reduction and a total of four absences mandate a reduction of one letter grade for the course.

More than four absences mandate a failing grade for the course, unless there are extenuating circumstances, such as the following:

- an extended illness requiring hospitalization or visit to a physician (with documentation)
- a family emergency, e.g. serious illness (with written explanation)
- observance of a religious holiday

The attendance and lateness policies are enforced as of the first day of classes for all registered students. If registered during the first week of the add/drop period, the student is responsible for any missed assignments and coursework.

For significant lateness, the instructor may consider the tardiness as an absence for the day. Students failing a course due to attendance should consult with an academic advisor to discuss options.

Academic Honesty and Integrity

Compromising your academic integrity may lead to serious consequences, including (but not limited to) one or more of the following: failure of the assignment, failure of the course, academic warning, disciplinary probation, suspension from the university, or dismissal from the university.

University Policy

The New School views "academic honesty and integrity" as the duty of every member of an academic community to claim authorship for his or her own work and only for that work, and to recognize the contributions of others accurately and completely. This obligation is fundamental to the integrity of intellectual debate, and creative and academic pursuits. Academic honesty and integrity includes accurate use of quotations, as well as appropriate and explicit citation of sources in instances of paraphrasing and describing ideas, or reporting on research findings or any aspect of the work of others (including that of faculty members and other students). Academic dishonesty results from infractions of this "accurate use". The standards of academic honesty and integrity, and citation of sources, apply to all forms of academic work, including submissions of drafts of final papers or projects. All members of the University community are expected to conduct themselves in accord with the standards of academic honesty and integrity.

Students are responsible for understanding the University's policy on academic honesty and integrity and must make use of proper citations of sources for writing papers, creating, presenting, and performing their work, taking examinations, and doing research. It is the responsibility of students to learn the procedures specific to their discipline for correctly and appropriately differentiating their own work from that of others. Individual divisions/programs may require their students to sign an Academic Integrity Statement declaring that they understand and agree to comply with this policy.

The New School recognizes that the different nature of work across the schools of the University may require different procedures for citing sources and referring to the work of others. Particular academic procedures, however, are based in universal principles valid in all schools of The New School and institutions of higher education in general. This policy is not intended to interfere with the exercise of academic freedom and artistic expression.

Academic dishonesty includes, but is not limited to:

- cheating on examinations, either by copying another students work or by utilizing unauthorized materials
- using work of others as ones own original work and submitting such work to the university or to scholarly journals, magazines, or similar publications
- submission of another students work obtained by theft or purchase as ones own original work

- submission of work downloaded from paid or unpaid sources on the internet as ones own original work, or including the information in a submitted work without proper citation
- submitting the same work for more than one course without the knowledge and explicit approval of all of the faculty members involved
- destruction or defacement of the work of others
- aiding or abetting any act of academic dishonesty
- any attempt to gain academic advantage by presenting misleading information, making deceptive statements or falsifying documents, including documents related to internships
- engaging in other forms of academic misconduct that violate principles of integrity

(This is an abridged version of the policy. For the full policy text, which includes adjudication procedures, visit: `www.newschool.edu/WorkArea/DownloadAsset.aspx?id=81698`)

Plagiarism Policy

Plagiarism is the unacknowledged use of someone else's work as one's own in all forms of academic endeavor (such as essays, theses, examinations, research data, creative projects, etc), intentional or unintentional. Plagiarized material may be derived from a variety of sources, such as books, journals, internet postings, student or faculty papers, etc. This includes the purchase or "outsourcing" of written assignments for a course. A detailed definition of plagiarism in research and writing can be found in the fourth edition of the MLA Handbook for Writers of Research Papers, pages 26-29. Eugene Lang College's full Policy on Academic Honesty details the procedures for allegations of plagiarism and for penalties and can be found in the Lang catalog at
`http://www.newschool.edu/lang/subpage.aspx?id=374`

Course Outline

I. Review of Univariate Time Series Analysis

- ARMA Models
  - Stationarity, Invertibility and Ergodicity
  - Moving Average and Autoregressive Processes
  - The Autocovariance-Generating Function
  - Estimation and Model Selection
  - Principles of Forecasting
- Non-Stationary Time Series
  - Time Series Decomposition Methods
  - Trend- vs. Difference Stationary Series
  - Unit Root and Stationarity Tests

II. Multivariate Time Series Analysis

- ARDL Models
- Alternative approaches to Macroeconometric Identification
  - The Cowles Commission Approach
  - The LSE Approach
  - The VAR Approach
- VAR Models
  - Stationary Conditions and Properties
  - Estimation and Model Selection
  - Granger Causality and Impulse Response Functions
  - Structural VAR Models
- Cointegration and Error Correction
  - Short- vs. Long-Run Dynamics
  - Cointegration Tests
  - Estimation
- VECM Models

III. Nonlinear Time Series Models

- Introduction
- Structural Change & Nonlinearity in Econometric Models
- Tests for Structural Change & Nonlinearity
- Selected Nonlinear Time Series Models: Threshold and Smooth Transition Models

Course Outline

The topics of this class will be treated according to the following schedule:

Week of	Lecture Topic
Sep. 6	Class I: ARMA Models: Theory
Sep. 9	Class II: ARMA Models: Estimation & Model Selection
Sep. 16	Class III: Principles of Forecasting
Sep. 23	Class IV: Non-Stationary Time Series: Introduction
Sep. 30	Class V: Unit Root and Stationarity Tests
Oct. 7	Class VI: ARDL Models and Macroeconometric Identification
Oct. 14	Class VII: VAR Models: Introduction
Oct. 21	Class VIII: Midterm Exam
Oct. 28	Class IX: Estimation and Model Selection
Nov. 4	Class X: Granger Causality and Impulse Response Functions
Nov. 11	Class XI: Structural VAR Models
Nov. 18	Class XII: Cointegration and Error Correction Models
Nov. 25	Class XIII: Cointegration Tests
Dec. 2	Class XIV: Vector Error Correction Models
Dec. 9	Class XV: Nonlinear Time Series Models