

Econ 9477  
**Advanced Topics in Econometrics II**  
*Spring 2012*

**Instructor** J. Isaac Miller millerjisaac@missouri.edu  
**Course** MW 3:30-4:45PM Middlebush 212  
**Office Hours** MW 10:00AM-12:00PM Professional 221

**Objectives**

The objective of this course is to familiarize the student with some popular time series tools not covered in Econometric Methods III (Econ 9474). The main emphasis will be on analysis in the frequency and continuous time domains, with applications to topics in finance, international finance, and macroeconomics. The main goal will be to write a paper on an empirical time series topic.

**Prerequisite**

Econ 9474 or instructor's consent.

**Grade Composition**

*Project on an Empirical Time Series Topic* ..... 66% of the course grade  
Of which...  
*Project Proposal*..... 10% of the course grade  
*Literature Review and Analysis*..... 10% of the course grade  
*Paper Rough Draft*..... 25% of the course grade  
*In-Class Presentation(s)*..... 11% of the course grade  
*Paper Final Draft*..... 10% of the course grade  
*Homework Assignments* ..... 34% of the course grade

**Recommended Texts** (available in the bookstore):

- Hunt, P.J. and J.E. Kennedy (2004). *Financial Derivatives in Theory and Practice*.
- Mikosch, T. (1998). *Elementary Stochastic Calculus with Finance in View*.
- Robinson, P.M. (2003). *Time Series with Long Memory*.

**Additional Sources** (not available in the bookstore):

- Brockwell, P.J. and R.A. Davis (1987). *Time Series: Theory and Methods*.
- Fuller, W.A. (1976). *Introduction to Statistical Time Series Analysis*.
- Hamilton, J.D. (1994). *Time Series Analysis*.
- Hull, J.C. (2002). *Options, Futures, and Other Derivatives*.

**Topics Covered:**

- Review of Stationary Series in the Time Domain
- I. Long Memory and Fractional Integration**
  - Spectral Representation and the Periodogram
  - Long Memory and Fractional Integration
- II. Introduction to Stochastic Calculus**
  - Brownian Motion and Continuous Martingales
  - Stochastic Calculus and Diffusions
- III. Topics in Time Series**
  - Financial Engineering

**Statement on Academic Dishonesty:**

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's 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 breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

**Statement on Disabilities:**

If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office. To request academic accommodations (for example, a notetaker), students must also register with the Office of Disability Services, (<http://disabilityservices.missouri.edu>), S5 Memorial Union, 882-4696. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

**Statement on Intellectual Pluralism:**

The University community welcomes intellectual diversity and respects student rights. Students who have questions concerning the quality of instruction in this class may address concerns to either the Departmental Chair or Divisional leader or Director of the Office of Students Rights and Responsibilities (<http://osrr.missouri.edu/>). All students will have the opportunity to submit an anonymous evaluation of the instructor at the end of the course.