Economics 618B: Time Series Analysis

State University of New York at Binghamton
Department of Economics
Spring, 2011

Professor: Daniel J. Henderson
Lecture: R 11:40-1:05 pm, FA 348 and R 2:50-4:15 pm, EB N22
Discussion: M 12:00-1:00 pm, FA 344
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Course Description:

This course deals with the analysis of univariate and multivariate time series. The course will focus on the modeling of stationary and linear models for which optimal forecasts will be constructed. Non-linear and nonstationary models will also be analyzed, together with topics such as causality, unit roots, error correction models, and cointegration.

Textbooks:

Applied Econometric Time Series, Third Edition
Enders, Wiley: 2010, ISBN: 9780470505397 (Required)

Applied Time Series Econometrics, First Edition
Lütkepohl and Krätzig, Cambridge: 2004, ISBN: 0521547873

Time Series Analysis, First Edition
Hamilton, Princeton: 1994, ISBN: 0691042896

Elements of Forecasting, Third Edition
Diebold, South-Western: 2004, ISBN 0324163827

RATS Handbook for Econometric Time Series, First Edition
Enders, Wiley: 1996, ISBN: 0471148946

Dynamic Econometrics, First Edition
Hendry, Oxford University Press: 1995, ISBN: 0198283164

Unit Roots, Cointegration, and Structural Change, First Edition
Maddala and Kim, Cambridge University Press: 1999, ISBN: 0521587824

Econometric Modelling of Financial Time Series, Third Edition
Mills and Markellos, Cambridge University Press: 2008, ISBN: 9780521710091

New Introduction to Multiple Time Series Analysis, First Edition
Lütkepohl, Springer: 2006: ISBN: 9783540262398

Prerequisites:

A firm understanding of Economics 615 and 616

Grading Policy:

The course will consist of several homework assignments, one in-class midterm examination, and a course project (due May 12, in class). The course grade will be determined according to the following formula:

Homework	30%
Midterm	30%
Project	40%

Project:

The group (2 members) project will require the students to replicate (the students will be responsible for obtaining the data) a published paper (approved by the instructor before the midterm), which uses methods taught in lecture. Further, the students will be required to make at least one significant extension to the paper and make a short write up (4-5 pages) of the experiment. Note that no late projects will be accepted, further note that no extensions will be given.

Course Outline:

Difference Equations

Lag Operators

Stationary ARMA Processes

Forecasting

Maximum Likelihood Estimation

Asymptotic Distribution Theory

Multi-Equation Time-Series Models

Models of Nonstationary Time Series

Processes with Unit Roots

Cointegration

Time Series Models of Heteroskedasticity

Nonparametric Time Series Modeling

Note that the schedule is subject to change depending on the pace of the course.