

**Introduction to Time-Series Econometrics
Economics 140B**

Course Prerequisites:

Students should be familiar with the concepts presented in Economics 140A.

Course Requirements:

Students will be graded on eight problem sets, a class project, and a final examination. The problem sets must be turned in before class on the date due, without exception. Together with the class project they contribute 30 percent to the final grade. The final examination contributes the remaining 70 percent.

Course Textbooks:

Required:

W. Enders, *Applied Econometric Time Series*, John Wiley, 1995

Recommended:

P. Brockwell and R. Davis, *Time Series*, Springer, 1991

Nerlove, D. Grether, and J. Carvalho, *Analysis of Economic Time Series*, Academic, 1995

Office Hours:

Professor Doug Steigerwald, 3049 North Hall, Telephone 893-3151, Monday TBA
Mr. Jim Grefer, 1016 North Hall, TBA

References:

The following books have been placed on reserve in the library:

Brockwell, P., *Time Series*

Enders, W., *Applied Econometric Time Series*

Fuller, W., *Introduction to Statistical Time Series*

Granger, C., *Forecasting in Business and Economics*

Nerlove, M., *Analysis of Economic Time Series*

Course Schedule

Monday, January 5:

Mathematical Review: Dynamic Models and Difference Equations
Enders, 1.2-1.3

Wednesday, January 7:

Stationary Analysis: Univariate Autoregressive Moving-Average Models
Enders, 2.1-2.4

Monday, January 12: **Problem Set I Due**

Stationary Analysis: Autoregressive Moving-Average Model Selection
Enders, 2.5-2.7

Wednesday, January 14: **Problem Set II Due**

Stationary Analysis: Autoregression Moving-Average Model Estimation

Monday, January 19:

Martin Luther King Day

Wednesday, January 21: **Problem Set III Due**

Stationary Analysis: Moving-Average Model Estimation with the Kalman Filter

Monday, January 26:

Stationary Time-Series Analysis: Autoregressive Moving-Average Model Verification
Enders, 2.8

Wednesday, January 28: **Problem Set IV Due**

Nonstationary Time-Series Analysis: Time Trends

Monday, February 2:

Nonstationary Time-Series Analysis: Spurious Regressions

Wednesday, February 4: **Problem Set V Due**

Nonstationary Time-Series Analysis: Testing for Unit Roots

Monday, February 9:

Nonstationary Time-Series Analysis: Vector Autoregressions Containing Unit Roots

Wednesday, February 11: **Problem Set VI Due**

Nonstationary Time-Series Analysis: Cointegration

Monday, February 16: **Project Handout**
Nonstationary Time-Series Analysis: Fully-Modified Estimation

Wednesday, February 18: **Problem Set VII Due**
Nonstationary Time-Series Analysis: Fully-Modified Estimation

Monday, February 23:
Nonstationary Time-Series Analysis: Error-Correction Models

Wednesday, February 25: **Problem Set VIII Due**
Nonstationary Time-Series Analysis: Error-Correction Models

Monday, March 2:
Class Project Presentation

Wednesday, March 4:
Stationary Time-Series Analysis: Autoregressive Conditional Heteroskedasticity

Monday, March 9:
Stationary Time-Series Analysis: Additional Univariate CH Models

Wednesday, March 11:
Stationary Time-Series Analysis: Quasi-Maximum Likelihood Estimation of CH Models

Monday, March 16: Final Examination: 4-7 p.m.