Principal text:


Course web page:

[http://isites.harvard.edu/icb/icb.do?keyword=k96901](http://isites.harvard.edu/icb/icb.do?keyword=k96901)

Office hours:

- Professor Hamilton: Littauer Center 124, Tuesdays 10:15-11:15
  *(jhamilton@ucsd.edu)*
- Fernando Yu: Cubicle 30 (basement of Littauer Center), Thursdays 10-11
  *(yu8@fas.harvard.edu)*

Grades:

- 30% in-class midterm scheduled for Thursday Oct 10
- 30% empirical exercise due Tuesday Nov 26
- 40% final exam scheduled for Thursday Dec 12, 8:30-11:30 a.m.

Tentative daily outline

Tu Sep 3: Difference equations and lag operators

*TSA*, Chapters 1 and 2

Th Sep 5: ARMA processes and forecasting

*TSA*, Chapters 3 and 4

Tu Sep 10: Estimation

*TSA*, Chapters 5 and 8


Th Sep 12: Spectral analysis 1

*TSA*, Sections 6.1-6.2
Tu Sep 17: Spectral analysis 2
   TSA, Sections 6.3-6.4

Th Sep 19: Vector time series
   TSA, Chapter 10

Tu Sep 24: Atheoretical vector autoregressions
   TSA, Sections 11.1-11.5

Th Sep 26: Structural vector autoregressions 1
   TSA, Section 11.6

Tu Oct 1: Linear state-space models 1
   TSA, Sections 13.1-13.7
Th Oct 3: Linear state-space models 2  
TSA, Section 13.8  

Tu Oct 8: Forecasting evaluation and model comparison  
Helmut Lütkepohl (2005), *New Introduction to Multiple Time Series Analysis*, Chapter 4  

Th Oct 10: Midterm exam

Tu Oct 15: Introduction to nonstationary time series  
TSA, Chapters 15 and 16
Th Oct 17: Functional Central Limit Theorem and unit-root processes
TSA, Chapter 17

Tu Oct 22: Nonstationary vector processes
TSA, Chapter 18

Th Oct 24: Cointegration and spurious regression
TSA, Chapter 19

Tu Oct 29: FIML estimation of cointegrated systems
TSA, Chapter 20

Th Oct 31: Dynamic models for large-dimensional vector systems
Jushan Bai, and Serena Ng (2002), “Determining the number of factors in approximate factor models”, Econometrica 70, pp. 191-221
Seung C. Ahn, and Alex R. Hornstein (2013), “Eigenvalue Ratio Test for the Number of Factors,” Econometrica 81, pp. 1203-1227

Tu Nov 5: Structural vector autoregressions 2
http://dss.ucsd.edu/~jhamilto/bh1.pdf

Th Nov 7: Markov-switching processes 1
TSA, Chapter 22

Tu Nov 12: Markov-switching processes 2

Th Nov 14: Structural breaks

Tu Nov 19: Nonlinear state-space models 1


Th Nov 21: Nonlinear state-space models 2


Tu Nov 26: Time-varying second moments 1

TSA, Chapter 21


Tu Dec 3: Time-varying second moments 2


