STAT 626: Time Series Analysis, Syllabus—Summer 1996

MTTH, 2:00–3:15, Blocker 161

Professor H. Joseph Newton, Room 447 Blocker, 845–3141, Office Hours 1:00-2:00 PM Daily

Prerequisites

Knowledge of random variables, moments, distribution theory, maximum likelihood estimation, and regression analysis (using matrices) such as covered in STAT 601 is assumed; complex numbers and trigonometry.

Course Materials

The text for the course is a reprint of "TIMESLAB: A Time Series Analysis Laboratory," written by the instructor and originally published by Wadsworth & Brooks/Cole. It is available from Certified Copy Company, 1911 Texas Ave, South (across Texas Ave from El Chico). Copies of the program called TIMESLAB described in the text will be distributed in class.

Determining the Course Grade

Two in-class, closed-book exams and a final (which may be a project rather than an exam), each worth 20%; Homework (primarily analyzing real time series) worth total of 40%.

Course Outline

I will miss class June 10 and 11 and August 5 and 6. I will get a substitute for some of the missed classes and I will try to hold a couple of extra classes.

Date	Number	Topic	Book Section
June 3	1	Introduction, Correlogram, Partial Correlogram	1.1–1.4.2
June 4	2	Introduction to TIMESLAB	Appendix B
June 6	3	Periodogram	1.4
June 10	4	Periodogram	1.4
June 11	5	Transforming Data	1.5
June 13	6	Transforming Data	1.5
June 17	7	Simple Forecasting	1.6
June 18	8	Difference Equations	1.6
June 20	9	Theory of Covariance Stationary Time Series	2.1, 2.2
June 24	10	Exam 1: Covers Chapter 1	
June 25	11	Linear Filters	2.3
June 27	12	Prediction Theory	2.4
July 1	13	Randon Walks, ARMA Processes	2.5
July 2	14	ARMA Processes	2.5
July 4		Holiday	
July 8		No Class	
July 9	15	Properties of Descriptive Statistics	3.1
July 11	16	Tests for White Noise	3.2
July 15	17	Window Spectral Estimation	3.3
July 16	18	Estimating and Identifying ARMA Models	3.4, 3.5

July 18	19	Exam 2: Covers Through Section 3.3	
July 22	20	Box-Jenkins Forecasting	3.6
July 23	21	Box-Jenkins Forecasting	3.6
July 23		Last Day to Q drop	
July 25	22	Other Modeling Strategies	3.7
July 29	23	Searching for Periodicities	3.8, 3.9
July 30	24	Introduction to Bivariate Series	4.1
August 1	25	Coherence, Phase, Gain	4.1
August 5	26	More on Bivariate Series	
August 6	27	Final Project Reports	4.2
August 8	28	More Final Project Reports	
August 12	29	More Final Project Reports	
August 13		Final Exam, 3:30–5:30	