STAT 626: Time Series Analysis, Syllabus—Summer 1995

MWF, 10:00–11:15, Blocker 160

Professor H. Joseph Newton, Room 426 Blocker, 845–3141, Office Hours 1:30-2:30 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 "TIMESLAB: A Time Series Analysis Laboratory," written by the instructor and published by Wadsworth & Brooks/Cole. Included with the text is an IBM PC computer program called TIMESLAB to be used throughout the course.

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 be out of town from June 20 through July 4. 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
May 29	1	Introduction, Correlogram, Partial Correlogram	1.1–1.4.2
May 31	2	Introduction to TIMESLAB	Appendix B
June 2	3	Periodogram	1.4
June 5	4	Periodogram	1.4
June 7	5	Transforming Data	1.5
June 9	6	Transforming Data	1.5
June 12	7	Simple Forecasting	1.6
June 14	8	Difference Equations	1.6
June 16	9	Theory of Covariance Stationary Time Series	2.1, 2.2
June 19	10	Exam 1: Covers Chapter 1	
June 21	11	Linear Filters	2.3
June 23	12	Prediction Theory	2.4
June 26	13	Randon Walks, ARMA Processes	2.5
June 28	14	ARMA Processes	2.5
June 30	15	Properties of Descriptive Statistics	3.1
July 3		No Classes for 10 Week Courses	
July 5	16	Tests for White Noise	3.2
July 7	17	Window Spectral Estimation	3.3
July 10	18	Estimating and Identifying ARMA Models	3.4, 3.5
July 12	19	Exam 2: Covers Through Section 3.3	
July 14	20	Box-Jenkins Forecasting	3.6

July 17	21	Box-Jenkins Forecasting	3.6
July 18		Last Day to Q Drop	
July 19	22	Other Modeling Strategies	3.7
July 21	23	Searching for Periodicities	3.8, 3.9
July 24	24	Introduction to Bivariate Series	4.1
July 26	25	Coherence, Phase, Gain	4.1
July 28	26	More on Bivariate Series	
July 31	27	Final Project Reports	4.2
August 2	28	More Final Project Reports	
August 4	29	More Final Project Reports	
August 8		Final Exam, 10:30–12:30	