

STAT 416/516: Time Series Analysis Spring 2009

Instructor: Dr. Ken Ryan
BA 349
(419)372-2958
kjryan@bgsu.edu

Lecture: 2:30pm-3:20pm
M BAA 2003
WF BA 101

Office Hours: MW 3:30pm-4:20pm
F 1:30pm-2:20pm
And/or by appointment

Text: Brockwell, P.J. and Davis, R.A. *Introduction to Time Series and Forecasting*, Second Edition.

Objective: The purpose of this course is to introduce students to the theory and methods of statistical time series analysis. Emphasis will be on practical modeling and prediction techniques for data collected sequentially in time. The theory of covariance-stationary stochastic processes, which is the mathematical basis for these techniques, will be developed. Time domain methods (Chapters 1-3 and 5-7) will be the focus of the course although frequency domain methods (Chapter 4) will also be introduced time permitting.

Prerequisite: MATH 441 or MATH 541; that is, a multivariate calculus-based course in probability theory covering expectation and moments (particularly covariances), random variables and vectors, multivariate distributions, and elementary limit theorems. Basic statistical methods—point and interval estimation, hypothesis testing, regression, etc.—and some matrix algebra will also be used.

Software: ITSM 2000 which is included with the text and R which is free for download at

<http://www.r-project.org/>

T Drive: The T drive is available only in CBA computer labs. Data used in the text and the ITSM 2000 software are stored on the included CD. A copy of this CD and example R commands from class will be in the folder

T:\class\asor\Ryan\TimeSeries\

Blackboard: Announcements and other important information will be posted on Blackboard. I will update this online information regularly.

Grading: Two midterm exams (1/4 each) and a final exam (1/2). Substandard homework will result in a drop of 1 or more letter grades. Late homework will not be accepted.