Statistics 6550
The Statistical Analysis of Time Series
2 semester hour course

Prerequisites: Stat 623 or Stat 622 or Stat 6201 or Stat 6302 or Stat 6802 and Stat 645 or Stat 6450 or Stat 6950

Exclusions: Stat 635


Conversion: Converted from a 3 credit hour quarter course (Topics are unchanged)

COURSE DESCRIPTION

This course develops a working knowledge of time series analysis and forecasting methods. The emphasis is on modeling methodology (identification, estimation, diagnostics and updating) and forecasting. It is hoped that you gain experience in the statistical theory so as to be able to analyze time series data in practice.

1. Introduction and motivations
2. Time series models and stationary processes, with examples
3. Estimating mean, autocovariance, and autocorrelation functions
4. Methods for estimating and eliminating trend and seasonality
5. Statistical properties of stationary processes and linear processes
6. Autoregressive and moving average processes
7. Forecasting stationary time series
8. Defining and modeling autoregressive moving average processes
9. Nonstationary and seasonal processes
10. Regression with time series errors
11. Nonlinear processes