



STAT 685

Applied Time Series Analysis

Fall 2013
Evening Course

Students requiring accommodations as a result of disability must contact the Centre for Students with Disabilities 778-782-3112 or csdo@sfu.ca

Instructor: [Dr. Steven Thompson](#)

Prerequisite:

STAT 302 or STAT 305 or STAT 650 or permission of instructor. Open only to graduate students in departments other than Statistics & Actuarial Science.

Textbook:

Time Series Analysis and Its Applications: With R Examples (3rd ed.) by Robert Shumway and David Stoffer. Publisher: Springer

Calendar Description:

Introduction to linear time series analysis including moving average, autoregressive and ARIMA models, estimation, data analysis, forecasting errors and confidence intervals, conditional and unconditional models, and seasonal models.

Outline:

1. Autocorrelation, seasonality, and trends in time series and their impacts on standard statistical inference techniques. (~1 week)
2. Autoregressive models: definition, model formulation, and data analysis
3. Moving average models: definition model formulation, and data analysis
4. ARIMA models: definition, model formulation, and data analysis
5. Introduction to forecasting with linear time series models
6. Introduction to nonparametric fitting of trends and cycles to time series data

Grading Scheme:

Assignments: 20%

Midterm: 30%

Final: 50%

Grading is subject to change.

Students should be aware that they have certain rights to confidentiality concerning the return of course papers and the posting of marks. Please pay careful attention to the options discussed in class at the beginning of the semester. Students are reminded that Academic Honesty is a cornerstone of the acquisition of knowledge. Scholarly integrity is required of all members of the University. Students are encouraged to review policies pertaining to academic integrity available on Student Services webpage at

<http://students.sfu.ca/academicintegrity.html>

Revised July 9, 2013