



# STAT 485

## Applied Time Series Analysis

Fall 2013  
Evening Course

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

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Instructor: [Dr. Steven Thompson](#)

### Prerequisite:

STAT 285 or STAT 302 or STAT 305 or equivalent. This course may not be taken for further credit by students who have credit for ECON 484.

### Textbook:

*Time Series Analysis and Its Applications: With R Examples (3<sup>rd</sup> 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. **Quantitative**

### Outline:

1. Autocorrelation, seasonality, and trends in time series and their impacts on standard statistical inference techniques.
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.*

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*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>*

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Students looking for a Tutor should send an email to [stat@sfu.ca](mailto:stat@sfu.ca) with “Tutor Request” in the subject line. Please only include information that you would like forwarded to our tutors mailing list.

Revised July 16, 2013