Data Sciences and Operations

USC Marshall School of Business

DSO-522
Applied Times Series Analysis for Forecasting

Wednesday
6:30 – 9:30 PM
ACC 236

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Why take the course?

- In business forecasting, time series models are used to analyze data that are collected over time to develop forecasting models for revenues, earnings, inventory, sales, budgets and new product development.

- Because time series data arise in so many different business areas, forecasting methods apply to problems in finance, marketing, real estate, production, operations research, international business, and accounting.

- Knowledge of forecasting methods is among the most demanded qualifications for business people working in either private or public sector of the economy. This course provides those skills and also opens possibilities for a forecasting management position in business.   There is a shortage of well-trained MBA's for these positions.

Course objective

Students learn simple and sophisticated methods and obtain forecasting skills and experience by completing several projects. There is a comprehensive final exam but no midterm. The course projects provide practical experience developing forecasting models for actual business operations. Students also obtain firsthand experience using XLMiner, a state of the art business analytics and time series package that extends Microsoft Excel.

The general aim is the development of sophisticated professionals, able to critically analyze business data and create business forecasting reports.

Key concepts

- Business Forecasting
- Time Series Models
- Forecasting Methods
- Regression and Box-Jenkins

Course description

This course will emphasize the usefulness of regression and Box-Jenkins forecasting methods for analyzing time series data. Topics to be covered include the concept of stationarity, autoregressive and moving average models, identification and estimation of models, prediction and assessment of model forecasts, seasonal models, and intervention analysis. The course goals are for each student to understand time series methods and obtain "hands on" experience using, analyzing, and developing forecasting models for business applications.