

DATA SCIENCES AND OPERATIONS

FALL 2023 SEMESTER

DSO 424 – Business Forecasting

Section – 16219

Professor

Robertas Gabrys, PhD

Email

gabrys@marshall.usc.edu

When

Mon/ Wed, 10:00 AM – 11:50 AM

Office

BRI 401 O

Units

4.0



WHY TAKE THIS COURSE?

This course is designed for motivated undergraduate students who want a non-technical case-based introduction to applied time series econometrics and forecasting. Knowledge of forecasting methods is among the most demanded qualifications for business professionals 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 business professionals for these positions.**

COURSE OBJECTIVES

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.

KEY CONCEPTS

- Business Forecasting
- Time Series Models
- Smoothing models
- Regression and Box-Jenkins
- Neural networks
- New Product Forecasting

COURSE DESCRIPTION

Time series analysis is the art of extracting meaningful insights and revealing patterns from time series data using statistical, machine learning and data science visualization approaches. These insights and patterns can then be utilized to explore past events and forecast future values in the series. Virtually every area of business makes use of some type of forecast:

- **Marketing Managers** use a sales forecast to establish promotional budgets
- **Accountants** rely on forecasts of costs and revenue in tax planning
- **Financial Experts** must forecast cash flows to maintain solvency
- **HR** depends on forecasts as it plans recruitment of new employees and other changes in the workforce
- **Production Managers** rely on forecasts to determine raw-material needs and the desired inventory of finished products.