



King Saud University

College of Business Administration

Quantitative Analysis Department (QUA)

Business Forecasting SDE 542

Instructor:

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Course Description

Forecasting is used to predict the future events or conditions. Therefore it allows us to make better decisions with low uncertainty. This course is designed to give students a better understanding of the importance of forecasting in business. This course will cover a variety of statistical forecasting methods that are applicable in many functional areas of business, including simple and multiple regression, exponential smoothing, seasonal decomposition, and ARIMA models. The emphasis will be on learning to apply these methods to real data using the statistical package SPSS.

Course Objectives

- To learn a variety of business forecasting techniques.
- To understand the basic concepts of business forecasting.
- Understand the importance of forecasting in making decisions in business environments.
- To be able to apply forecasting methods to business applications.
- Use the software packages for developing forecasting models.

Course Evaluation

1. Assignments and Participation	(20%)
2. Midterm exam	(20%)
3. Project	(20%)
4. Final exam	(40%)

Text book

Business Forecasting

John E. Hanke, Dean W. Wichern and Arthur G. Reitsch,
Ninth Edition, Prentice Hall, 2009



Other Forecasting References

- [*Business Forecasting \(with ForecastX software\)*](#) by Wilson and Keating, 4th ed. (another very similar book, with a popular Excel add-in for forecasting)
- [*Forecasting Principles and Applications*](#) by DeLurgio, 1st ed. (a more comprehensive and more detailed book, with better coverage of more advanced methods like ARIMA)
- [*Elements of Forecasting*](#) by Diebold, 3rd ed. (more advanced text, somewhat math-intensive for an MBA audience, covers some fancier models than can be fitted with Statgraphics, but some of the examples of modeling are sloppy).
- <https://www.otexts.org/fpp> online textbook on forecasting.
- <http://people.duke.edu/~rnau/411home.htm> contains notes and materials on statistical forecasting.
- <http://www.statsoft.nl/textbook/stathome.html> is a very good, online reference.
- <http://www.ibf.org/> International Business Forecasting website

Final Project

At the end of the course a final project will be due. This may be a data analysis project of your own data set. Ideally, the aim of the final project will be to develop a forecasting model for a data set in which you are especially interested, although other kinds of statistical analysis are also admissible. The important thing is that the project should have significant data analysis content and should use some of the modeling concepts introduced in the course.

Homework Assignments

There will be regular homework assignments during the term. The homework assignments will all be computer-based, involving the development of forecasting models for one or more data sets

Course Contents and Plan

LECTURE	TOPIC	DATE	READING
1	Introduction to Business Forecasting	27/01/2016	Ch 1
2	The forecast Process	03/02/2016	Ch 2
3	Moving Averages and Exponential Smoothing	10/02/2016	Ch 3
4	Moving Averages and Exponential Smoothing	17/02/2016	Ch 3
5	Forecasting with Regression	24/02/2016	Ch 4
6	Forecasting with Regression	02/03/2016	Ch 5
7	Forecasting with Regression	09/03/2016	Ch 5
8	Time-Series Decomposition	23/03/2016	Ch 6
10	Time-Series Decomposition	30/03/2016	Ch 6
9	Midterm Exam	6/04/2015	
11	ARIMA	13/04/2016	Ch 7
12	ARIMA	20/04/2016	Ch 7
13	Combining Forecasting Models	27/04/2016	Ch 8
14	Forecast Implementation	04/05/2016	Ch 9
15	Final Exam	11/05/2016	