



Stevens Institute of Technology

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Syllabus

SYS670: FORECASTING AND DEMAND MODELING

Overview

1. Introduce business forecasting techniques and associated statistical theory: assumptions, procedures, and interpretations of results
2. Understand forecasting systems for demand/market forecast in aiding business decisions.
3. Introduce basic marketing engineering components and analytics
4. Understand the functionality of software and the available offerings in the marketplace.

Learning Goals

After taking this course, the student will be able to:

- Understand forecasting systems and step-by-step implementation of forecasting procedures.
- Understand popular forecasting techniques, assumptions, limitations, interpretations, as well as implementations.
- Understand basic marketing instruments and their use in demand modeling.

Pedagogy

The course will employ lectures, supplemental reading and additional resources, online discussion, two term papers, weekly assignments and a final team presentation.

Required Text(s)

There are two required texts for this course:

- Business Forecasting, Hanke, Wichern, and Reitsch, 9th Edition
ISBN:0-13-230120-2, Prentice Hall, 2005
- Marketing Engineering, Lilien and Rangaswamy, Revised 2nd Edition,
ISBN: 0-14-120252-5, Trafford Publishing, 2008

Required Readings

Required readings will be assigned for each week and will be found on the course website.

Course Outline

The course is divided into thirteen modules that are completed over the same number of weeks. Students are required to complete one individual assignment each week. Beginning in the second week, they are also required to participate in an online discussion of the work of the previous week. To promote full team member participation, students are required to assess their own contributions and other members of their team about midway in the semester and then again towards the end of the semester, prior to the grading of the final team project.

Assignments

Specific details on the assignments are found on the course website. Grade determination is based on participation, assignments, and projects; respective weights are as shown below:

1. Individual assignments	30%
2. Participation	40%
3. Final Team project/presentation	30%
TOTAL	100%

PLEASE NOTE:

- Assignments in this class may be submitted to www.turnitin.com, a web-based anti-plagiarism system, for an evaluation of their originality. Any work that demonstrates plagiarism will result in the student receiving a zero for that assignment.
- Assignments that are turned in late will not be graded, and the student will get a zero for that assignment.

Course Schedule

Week #	Topic
1	Introduction to Forecasting
2	Review of Statistical Concepts
3	Overview of Time series Models
4	Simple Linear Regression Model
5	Multiple Linear Regression Model
6	Nonlinear Regression Models
7	Adaptive Time Series Models
8	Time Series Components
9	Box-Jenkins Models
10	Advanced Forecasting Techniques and misc
11	Marketing Engineering Tools
12	Marketing Engineering Tools
13	Project Presentation/Discussion