Instructor: Dr. Jayawardhana Phone: 235-4414
Office: 207 Yates Hall e-mail: ananda@pittstate.edu
Office Hours: Check the timetable below
Class web page:

Text: Business Forecasting, Ninth Edition by John E. Hanke and Dean W. Wichern


2 Introduction to time Series and Forecasting by Brockwell, Peter J. and Davis, Richard A.

3 Forecasting Examples for Business and Economics Using the SAS System, SAS Institute Inc.

3 The Little SAS Book by Delwiche, Laura D. and Slaughter, Susan J.

Prerequisites: Math 153 or Math 155 or equivalent and Math 153 or Math 543 or equivalent

Software: MINITAB and SAS for those who are interested
Buy MINITAB from e-academy for 6 months

Objectives: This course will give a systematic and in-depth understanding of modern principles and applications of forecasting.

Coverage: From Business Forecasting by Hanke and Reitsch

Ch. 1 Introduction to forecasting (Reading)

Ch. 2 A review of basic statistical concepts (Reading)

Ch. 3 Exploring data patterns and introduction to forecasting techniques

Ch. 4 Moving averages and smoothing methods

Ch. 5 Time series and their components

Ch. 6 Simple linear regression
Ch. 7  Multiple regression analysis

Ch. 8  Regression with time series data

Ch. 9  The Box-Jenkins (ARIMA) methodology


Ch. 4  Time Series Analysis

Ch. 5  Additional Examples

Some theoretical background from “Introduction to time Series and Forecasting by Brockwell and Davis”

Ch. 1  Introduction
Ch. 2  Stationary Processes
Ch. 3  ARMA Models
Ch. 4  Spectral Analysis
Ch. 5  Modeling and Forecasting with ARMA Processes
Ch. 6  Nonstationary and Seasonal Time Series Models.
Ch. 9  Forecasting Techniques.

Group Project # 1

Critique the statistical analysis of the following article.

Group Project # 2

Critique the statistical analysis of the following article.

Group Project # 3

Critique the statistical analysis of the following article.

Advanced Group Project # 1

Critique the statistical analysis of the following article.

Evaluation: Five (or) four exams = 500 (or 400) points
Quizzes = 100 points
Homework and Projects = 200 points
Paper (and Presentation) = 25 points

Grading Scale: 90% - 100% = A
80% - 89% = B
70% - 79% = C
60% - 69% = D
<60% = F

Instructor keeps the right to lower the scale if necessary.

Regular attendance is expected, but it is not counted in your grade. Exam dates will always be announced at least a week ahead of time. There will be at least one quiz every week. No make-up will be given for these quizzes unless prior arrangements are made with the instructor. Daily homework assignments will be made. **Homework will be collected on due dates and all the problems will be graded.** At the end, quizzes will be scaled to 100 points and homework and projects will be scaled to 200 points. No tests will be made up except for absences due to official university activities or health problems with a Dr.’s excuse. If you have a special need addressed by the **American with Disabilities Act**, please notify me immediately so that appropriate accommodations can be provided. Instructor keeps the right to make changes in the coverage.
Semester Papers and Class Presentations

These papers should be from about 10 pages in length (double-spaced, font size 12). If you are writing about a chapter from the class text, make sure you find an article, which uses one of the methods you discuss in your paper. You have the choice to select your own topic. If you do so please let me know in advance.

1  Qualitative forecasting techniques like Delphi Method
   Linstone, H.A. Delphi Method, 001.433D385 (Axe Library)

2  ARCH/GARCH Models

   the Variance of United Kingdom Inflation,” Econometrica, 50, 987-1007.
   (JSTOR)


3  Time Series in Political Science

   Journal of Politics, 54(4), 1158-1169. (JSTOR)

   of Politics, 58(1), 224-236. (JSTOR)

4  Time Series in Economics

   Andrew B. Bernard, Charles I. Jones (1996), “Productivity Across Industries and
   Countries: Time Series Theory and Evidence,” The Review of Economics and
   Statistics, Vol. 78, No. 1., 135-146. (JSTOR)

5  Time Series in Sociology

   Monthly Time-Series Analysis of Execution Publicity,” American Sociological
   Review, Vol. 54, No. 5., 722-743. (JSTOR)

6 Dickey and Fuller Test


Literature Survey

Learn how to search online databases.

Learn how to request an inter-library loan.

We have access to many databases including JSTOR (one of my favorites). In JSTOR, search for Time Series. There may be several hundred papers. Read a few and select one article for your presentation.

Time series is a vast subject and its applications can be found in many areas of social sciences. Since we have covered only a limited number of topics during this semester, you may encounter many new concepts in research papers. I will help you to understand those topics if possible.

Instructor’s Time-table

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<th>Time</th>
<th>Monday</th>
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<th>Thursday</th>
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<tr>
<td>8.00-8.50</td>
<td>Math 143-01 (WL)</td>
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<td>9:30-10.45</td>
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<td>10.00-10.50</td>
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* Note that from 2.00 p.m. to 4.00 p.m. there are other commitments such as independent studies, departmental meetings, departmental colloquia etc. You are encouraged to use the office hours allocated before 2.00 p.m. If my office hours conflict with your other classes please let me know.

**Other Issues**

Please take clear notes.
Please let me know if I am going faster than your pace.
Please participate in class activities.
Please ask questions in class, after the class or in my office.
Please answer my questions and participate in class.
Please make friends in class and share notes, study together etc.
Please use my office hours anytime you need help. I care about you and your success.
I am open to your reasonable suggestions.