
| | |
|------------|---|
| UIC | University of Illinois at Chicago College of Business Administration Department of Information & Decision Sciences |
|------------|---|

| | |
|---------------------------|---|
| IDS 476 / ECON 450 | Business Forecasting using Time Series Methods |
|---------------------------|---|

| | |
|-----------------|----------------------------|
| Syllabus | Fall Semester, 2008 |
|-----------------|----------------------------|

| | |
|---------------------|---|
| Time | 12:30 - 1:45 PM, Tuesdays and Thursdays, 26-Aug. through 4-Dec., except Tuesday, 30-Sept., Thursday, 9-Oct., and Thursday, 27-Nov. |
| Place | 220 SH or PC Lab (L270 EPASW) Tuesday, 26-Aug: classroom Thursdays: classroom Tuesdays beginning 2-Sep: PC Lab L270 EPASW |
| Instructor | Stanley L. Sclove, Professor, IDS. 2418 UH |
| Contact info | e-mail: sclslove@uic.edu Web: www.uic.edu/~sclslove Phone: Office 312-996-2681; IDS Dept 312-996-2676 |
| Office Hours | Tuesdays and Thursdays, at the place of the class meeting a half hour before the class meeting; and by appointment |

Course Content

The course focuses on time series analysis and its application (especially on forecasting and structural analysis) using the Box-Jenkins approach. Single-variable and multi-variable time series analysis will be discussed. The course covers both theory and application, with more emphasis on the latter. A comprehensive and easy-to-use computer program (the SCA System) will be used to facilitate understanding of the theory, methodology and application.

Topics

1. Overview of time series analysis and forecasting
2. Non-seasonal ARIMA models: model identification, estimation, diagnostic checking and forecasting
3. Seasonal ARIMA models: model identification, estimation, diagnostic checking and forecasting
4. Automatic ARIMA modeling using an expert system
5. Single-equation transfer function models: model identification, estimation, diagnostic checking and application
6. Automatic transfer function modeling using an expert system
7. Intervention analysis (impact study), outlier detection and adjustment

Prerequisites

The prerequisites are serious: material from the prerequisite courses is actively used in IDS 476 / ECON 450.

IDS 371 or ECON 346

The immediate prerequisite is a grade of A or B in IDS 371 or ECON 346 (that is, knowledge of basic statistical inference and linear regression analysis); some experience with Excel and a statistical package such as Minitab (used in IDS 270 and 371) is desirable. A prerequisite for IDS 371 / ECON 346 is IDS 270 or ECON 270. A prerequisite for IDS 270 / ECON 270 is MATH 160.

MATH 160 - Finite Math for Business

Especially needed from this course are the topics of Introduction to Matrices, Solving Systems of Equations, Operations on Matrices, Inverse of a Matrix.

Course materials

Textbook

Lon-Mu Liu. *Time Series Analysis and Forecasting*. 2nd ed. Scientific Computing Associates, Villa Park, IL, 2006. (required)

Web material

blackboard.uic.edu

Grading

The grade will be based on the following categories:

- Homework (25%)
- Midterm exam (25%)
- Project (25%)
- Final Exam (25%)

Homework

Five homework assignments will be given. Assignments will be accepted late only in the next class meeting, and with a penalty of twenty percent.

Midterm Exam

In class, in the ninth week, on Thursday, 23-Oct-2008. Open book (open book and open notes).

Project

Teams of 4 to 6 people. Students must find their own dataset and analyze it using time series methodology related to the course topics. More detailed information available online.

Final Exam

Week of Monday, 8-Dec., day/time TBA. Open book (open book and open notes).

Honor Code for the College of Business Administration

This course and its associated coursework are being administered under the policies of the University of Illinois at Chicago (UIC) College of Business Administration Honor Code. All students are expected to respect and uphold this code.

Honor Code Violations and Enforcement. Violations of the Honor Code are just causes for discipline under the University of Illinois at Chicago Student Disciplinary Procedure, and all allegations of Honor Code violations shall be handled pursuant to that Procedure. (For a complete description of just causes for discipline, disciplinary procedures, and sanctions, see the pamphlet "Student Disciplinary Procedure of the Senate Committee on Student Discipline," available from the Office of the Dean of Students, SSB, Suite 3030, 1200 W. Harrison St., M/C 318.)

Copyright © 2008 Stanley Louis Sclove
Created 2005: Sept 30 latest update 2008: July 25
