

INDIANA UNIVERSITY OF PENNSYLVANIA
SENATE CURRICULUM COMMITTEE B-2

NEW COURSE PROPOSAL

Department: Finance and Management Information Systems

Person to Contact for Further Information: Dr. Mohamed H. Albohali

Course Affected: QB 401: Forecasting Methods for Business

Desired Effective Semester for Change: Fall, 1989

Approvals:

Department Undergraduate Committee Chairperson J. Steel

Department Chairperson Kenneth Z. Sussat

College of Business Undergraduate Committee Chairperson J. Steel

College Dean Robert C. Comp

Prerequisite
Not by exams

31
8889

approved

A. DESCRIPTION AND ACADEMIC NEED

A1. Catalog Description (attached)

A2. Course Syllabus (attached)

A3. Need Fulfilled

Financial investment predictions, production sites, sales and marketing projections and forecasting through mainframe and micro statistical analysis software programs are being used increasingly in a variety of corporate areas. Since most firms of all sizes typically have professional forecasters who often have graduate degrees as well as undergraduate degrees from well recognized institutions, it is very important that the college of business should address this need.

The course is not intended for the General Education course list.

A4. Effect on Other Courses

No existing courses are affected.

A5. Does this course follow traditional offerings in the department?

The course will be micro-mainframe-use-lecture/project oriented. There will be one or two exams and several projects.

A6. Has this course been offered at IUP on a trial basis?

This course has been offered as a special topic in 1982.

A7. Is this a dual level course?

This course will not be dual listed.

A8. Do other universities offer this course?

Other universities offer such a course under a variety of titles. Similar versions of this course are recommended by many of the 103 institutional members of The American Statistical Association. It is recommended that such a course be considered as an upper level undergraduate elective course.

A9. Is this course recommended or required by a professional society?

Several sections of The American Statistical Association such as Business Statistics Section, Statistics in Marketing Section, Statistical Computing Section, and The Section on Statistical Education recommend that an upper level of an undergraduate course in data analysis should become a traditional type of offering in any business program.

B. INTERDISCIPLINARY IMPLICATIONS

B1. Will the course be offered by one instructor or will there be a team?

The course will be taught by one instructor.

B2. Are additional or corollary courses needed?

The student taking this course will have taken the prerequisite business statistics courses (MA 214, QB 215), the intro to MIS course (IM 241) as well as an introductory algebra or calculus course such as (MA 121).

B3. What is the relationship of the content of this course to the content of courses offered by other departments?

No such regular course is presently offered at IUP and there is no relationship of the content of this course to the content of courses offered by other departments.

B4. Is this course applicable in a program of the School of Continuing Education directed at other than fulltime students?

It is not recommended that the course be offered in the School of Continuing Education.

C. EVALUATION

C1. What procedures are expected to be used to evaluate student progress?

Evaluation will be based on two or three exams and several projects.

C2. Variable credit?

The course is restricted to three credit hours.

D. IMPLEMENTATION

D1. What resources are needed to teach this course?

The course can be taught using existing faculty. In addition, the course would be made available within the existing space and resources that currently exist within the College of Business and at the Computer Science Department. The existing library subscriptions and materials will be sufficient for the proposed course.

D2. How many sections?

One section would be offered each semester.

D3. How often will the course be offered?

The course would be offered twice a year (Fall and Spring).

D4. How many students will be accommodated?

The enrollment would be limited to no more than 30 students per semester.

INDIANA UNIVERSITY OF PENNSYLVANIA
SENATE CURRICULUM COMMITTEE B-2

COURSE SYLLABUS

Course Syllabus: QB 401: Forecasting Methods for Business

Instructor: Dr Mohamed H. Albohali

Department: Finance/MIS

I. Course Identification: QB 401: Forecasting Methods for Business
(3 credits)

II. Catalog Description:

The course is designed to train the students to understand the nature of forecasting problems and the techniques of forecasting methods and their business applications. Computer statistical packages are incorporated into the course so that forecasting methods and models can be applied to real world problems, and the relationships that exist between variables can be examined.

Prerequisite MA 214, QB 215

III. Course Objectives:

Upon completion of the course, the student should be able to:

1. Determine an appropriate forecasting method for analyzing a set of data.
2. Discuss the importance and role of forecasting and the increasing need of statistics as a tool in business applications.
3. Work with computers and computer software packages in order to function efficiently in dealing with real-world problems.
4. Apply the basic ideas on relatively small data sets, and to submit a report on each project containing results and recommendations.

IV. Course Outline:

1. Introduction to Forecasting
 - a. Types of Forecasts
 - b. Choosing a Forecasting Method
 - c. Managing the Forecasting Process
2. Regression Analysis as a Forecasting Tool
 - a. Regression and Trend Projections
 - b. Residuals
 - c. Serial Correlation and Autocorrelation
 - d. Durbin-Watson Test for Autocorrelation
 - e. Lagged Models and the Adjustment of Multicollinearity
 - f. Computer Output

Course Outline: (cont.)

3. Time Series Analysis
 - a. Trend, Cyclical and Irregular Components
 - b. Short-term and Long-term Forecasts
 - c. Seasonal Variation
 - d. Naive Models
 - e. Exponential Smoothing
 - f. Exponential Smoothing Adjusted for Trend and Seasonal variation
 - g. Adaptive Filtering
 - h. ARIMA(p,d,q) Models

V. Grading:

- 25% Homework (short-format-projects) and class performance*****
75% Three equally weighted (comprehensive) examinations.

VI. Text: (*)

Business Forecasting. By Hanke, and Reitsch.
2nd Edition, Allyn and Bacon, Inc., 1986.

- Reference Books: 1. SPSS manual
2. Minitab manual

- * A number of reference books will be placed on reserve in the library.
- * The canned programs: SPSS, Minitab, and BMDP are available at the IUP Computer Center.