iAULI COLLtG

of Applied Arts and Technology

Sault Ste. Marie

COURSE OUTLINE

MATHEMATICS

MTH 276-4

r S V ' l S S d June, 1979 by B. Maki

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TEXT:

Richard Levin	Statistics for Management - Prentice Hall

REFERENCES:

Fruend & Williams	Modern Business Statistics - Prentice Hall
Tanus & Others	Statistics: A Guide to the Unknown - Hoi den-Day
Enrick	Cases in Management Statistics - Holt
O'Hara and Clelland	Effective Use of Statistics in Accounting & Busines - Holt
Croxton, Cowden & Klein	Applied General Statistics - Prentice Hall
^B Spurr & Bonini	Statistical Analysis for Business Decision - Richard Irwin
Yamane	Statistics: An Introductory Analysis - Harper & Row
McElroy	Applied Business Statistics - Holden-Day
Clark & Schkade	Statistical Methods for Business Decisions - South Western Publishing Co.

NOTES:

This semester of Business Statistics deals primarily with inductive statistics and the first two or three topics should be treated extensively and with plenty of time. The students generally have difficulty understanding hypothesis testing and confidence *oe*jtf*ficiem

The other topics such as regression and correlation and time series are of interest to business students and consequently, they enjoy the topics and understand them.

Sketching and interpretation of graphs is very important in the chapter on time series. Extra time should be spent on this topic.

Use of mini-calculators is almost essential in working the problems in the chapters on time series, chi square, regression and correlation The teacher should recommend that the students buy calculators with square root keys.

TOPICAL OBJECTIVES:

The students are expected to learn the following:

Hypothesis Testing:	The logic and need of Type 1 and Type 2 Errors, null hypothesis and test of significance, the tests for proportions, means and for differences between the means with practical applications.
Chi-Square Distribution:	A short study of this type of distribution involving tests and equality of proportions and the test for goodness of fit.
Non-parametric Tests:	The main objective of this chapter is to expose the students to distribution free statistics. Simple cases of randomness, run and median tests are studied
Linear Regression:	This chapter will show basic methods of prediction and estimation by means of regression lines and scatter diagrams, also prediction limits on these estimates, the methods of determining regression equations are important and should be known well.
Correlation:	This topic is part of linear regression. Here we stu calculation and interpretation of the correlation, rank and multiple correlation are also introduced without going into details.
Index Numbers:	The meaning and purpose of index numbers should be we known (especially in business), the calculation of ir numbers such as Laspeyres and Paasche's index, -chain index, etc.
Time Series:	A relatively simple and interesting topic of interesl to business students, a knowledge of trend lines and trend equations, is essential: several types of variations such as seasonal cyclical should be studit Methods of smoothing time series by ratio-to-trend methods and by moving averages are included.
Control Charts:	If time permits, a brief study of uses and setting u| of control charts should be undertaken.

uumoer	Periods	Topic Description	Reference
	14	Testing Hypotheses Introduction to testing hypotheses, types of errors, level of significance, one tail and two tails tests, testing for means - large and small samples, testing for proportions, testing for differences between means and proportions	Pages 241-281
		Chi-Square Tests Chi-square test for testing in dependence, contingency tables, Chi-square test for goodness of fit, analysis of variance and F-test.	Pages 285-31:
	10	Regression and Correlation Analysis Scatter diagrams, estimation using the regression line, method of least squares, standard error of estimates, prediction intervals, co-efficient of determination and correlation.	Pages 318-35?
		Non-parametric Methods Advantages and disadvantages, sign test, Mann-Whitney V-test, Run test, Rank Correlation test	Pages 377-40!
		Time Series Components of time series, trend analysis, fitting trend by method of least squares, coding, projecting with trend, cyclical variations, seasonal variations, ratio-to-moving average method, uses of seasonal index.	Pages 413-421 426-44'
		Index Numbers Definition, types of index numbers, unweighted aggregates index, laspeyres methods, average relatives, quantity and value indices.	