

GRANDE PRAIRIE REGIONAL COLLEGE
MANAGEMENT SCIENCE 3120
WINTER TERM 1994

TITLE: MS 3120 Probability and Statistics for Business -
Part 2.

INSTRUCTOR: Dr. Eric Chislett
Room C 409
Phone 539-2003

TIME: Class: Mon., Wed., Fri., 1:00 - 1:50 pm, J 202.
Seminar: Mon, 3:00 - 4:50 pm, A 305, J 201.

TEXT: (i) Keller, Warrack, Bartel;
Statistics for Management and Economics,
third edition, Wadsworth.

(ii) MINITAB Primer, An Introduction to MINITAB
Statistical Software

MARKING:	Final	35 %
	Mid-Term	25 %
	Reports	10 %
	Assignments	10 %
	Quizzes	10 %
	Lab Exam	10 %

DATES:	Quiz #1	Fri. Jan. 29
	Mid-Term	Fri. Feb. 19
	Quiz #2	Fri. Mar. 26
	Lab Exam	Mon. Apr. 12

MANAGEMENT SCIENCE 3120

MS 3120 PROBABILITY AND STATISTICS FOR BUSINESS PART II

3 (3-1) UT (3) (PART II WINTER)

Statistical Inference for variance; statistical inference for the means, proportions and variances of two populations; analysis of variance; non-parametric statistics; joint probability distributions; covariance; correlation and independence; contingency tables; simple linear regression; multiple linear regression; non-linear regression; time series analysis; decision analysis; and statistical process control.

PREREQUISITE: Mathematics 1200 and Management Science 3010

DETAILED DESCRIPTION: Approx no of weeks

1. Statistical Inference 1

Inferences about the means, variances and proportions of one population. Inferences about the comparison of two population means, variances and proportions.

2. Experimental Design and the Analysis of Variance 2

Completely randomized designs and the ANOVA table. Randomized block design. Factorial experiments. Tukey's method.

3. Chi-Squared Tests 1

Goodness of fit tests, Contingency Tables and test for independence, and normality.

4. Simple Linear Regression and Correlation 2

Regression and Correlation. Least squares method. The coefficient of determination. The regression model and T and F test. Predictions. Correlation analysis.

5. Multiple Regression 2

The multiple regression model. The estimating regression equation. Tests of significance. Dummy variables. Curvilinear regression functions. Relationship to Analysis of Variance. Stepwise regression and the F test.

6. Time Series Analysis 2

Components of a time series. Linear and non-linear trends. Forecasting using smoothing techniques. Finding seasonal components. Using regression models.

*simple exponential smoothing
1 & 2 period autoregression models.*

7.	<u>Index Numbers</u>	1
	Various price index numbers, including the Laspeyres and Paasche indexes.	
8.	<u>Non-Parametric Statistics</u>	1
	Sign test, Wilcoxon test, Mann-Whitney test, Kalmorgorov-smirnov test, and Rank correlation.	
9.	<u>Decision Analysis</u>	1
	Decision trees, expected values, and Bayesian methods.	
10.	<u>Statistical Process Control</u>	1
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Laboratory reports and Assignments

<u>Date</u>	<u>Report no</u>	<u>Title</u>
Jan 10	1	* Intro to Minitab and hypothesis testing
Jan 17	2	* Hypothesis testing
Jan 24	3	Analysis of Variance 1
Jan 31	4	* Analysis of Variance 2
Feb 7	5	Linear Regression 1
Feb 14	Mid Term exam week	
Feb 21	Spring Break	
Feb 28	6	* Linear Regression 2
Mar 7	7	* Multiple and Non-Linear Regression
Mar 14	8	Time series
Mar 21	9	* Project
Mar 28	10	Open
Apr 11		* Lab Exam

* Indicates those labs which require the use of Minitab.