SAULT COLLEGE of Applied Arts and Technology Sault Ste. Marie

COURSE OUTLINE

MATHEMATICS MTH 262-4

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MATHEMATICS MTH 262-4

TEXT:

Richard Levin	Statistics	for Management
	- Prentice	Hall

REFERENCES:

J. E. Freund & F. J. Williams	Modern Business Statistics - Prentice Hall
Tanus & Others	Statistics: A Guide to the Unknown - Hoiden-Day
Croxton, Cowden & Klein	Applied General Business Decision - Prentice Hall
Spurr and Bonini	Statistical Analysis for Business Decision - Richard Irwin
Yamane	Statistics: An Introductory Analysis - Harper & Row
Clark and Schkade	Statistical Methods for Business Decisions - South Western Publishing Co.
McElroy	Applied Business Statistics - Hoiden-Day

NOTES:

This is the first semester of Business Statistics and most of the term is spent en descriptive statistics. Hence, a fair amount of time should be spent on topics such as Summation Notation; Mean, median and mode; Standard Deviation and other measures of Variation.

The graphs of distribution, such as histograms, frequency polygons etc. should be studied in depth, since these refer again throughout the course.

The chapter on probability is time consuming and can become complicated especially if problems from other texts are used.

The study of the Theoretical Distributi.ons will take up the latter one-third of the term and since this topic is difficult and the basis of future work; much time should be allowed for it.

Use of calculators is almost essential in working the problems. The students should be encouraged to buy calculators with square root and square keys.

TOPICAL OBJECTIVES;

The students are expected to learn the following:

Introduction: definition of statistics, differences between inductive and descriptive statistics, some applications of statistics, the use of summation notation in writing formulas.

- Frequency Distributions: how to construct a frequency table, the graphical presentation of distributions such as histograms frequency polygons, ogives.
- Measures of Location: the calculation and usage of the arithmetic mean, median and mode, the short cut method is preferred in these calculations, the calculation and usage of quartiles, deciles and percentiles.
- Measures of Spread on Variation: The calculation and interpretation of standard deviation and some knowledge of other measures of variations the short cut method is preferable in calculations of grouped data.
- Probability: the meaning and history of probability. Its application to the games of chance. The rules of probability such as addition and multiplication rules are necessary. Mathematical expectation is studied as an example ofapplications of probability.
- Theoretical Distributors: an understanding of binomial distribution is necessary before a study of normal distribution is undertaken, normal distributior applications should be understood as it pla^ an important role in statistics.
- 'Sampling Distributions: the usage of random number tables and samplind methods should be understood, also the Central Limit Theorem and its applications.
- Interval Estimation: this section involves the calculation of confidence intervals for means (large and small) and proportions, calculation of the sample size and standard error are also included.

'iber	Periods	Topic Description	Reference
	1	Introduction	Pages 1 - 7
		Definition, history and subdivisions of Statistics	
	3	<u>Frequency Tables and Graphs</u> Collection of data, samples and populations, construction of frequency tables	Pages 9 - 30
	2	Histograms, frequency polygons, frequency curves and Ogives	Pages 30 - 4(
	6	Descriptive Measures	Pages 42 - 7 1
		Meaning of measures of Central Tendency, Arithmetic Mean, weighted mean, geometric mean, median mode	
	б	Measure of Variability	Pages 76 - 91
		Meaning of dispersion, range, quartiles, variance and standard deviation	
	10'	Probability	Pages 100 -
		History of probability, two types of probabilities, rule of addition, rule of multiplication, joint and conditional probabilities, Bayes' Theorem	
	3	Probability Distribution	Pages 136 -
		Meaning of Probability distribution, types of distribution, random variable	
	3	Binomial Distribution	Pages 146 -
		Mean, Standard Deviation and the use of Binomial Tables	
	2	Poisson Distribution	Pages 155 -
		Mean, Standard Deviation and calculating probabilities	
	5	Normal Distribution	Pages 162 -
		Characteristics, area under the curve, standard Normal Curve and its applications	
	5	Sampling	Pages 179 -
		Purpose and definition, different types of sampling, sampling distribution, standard error	

Pages 208 - 2.

Estimation Point and internal estimation, criteria of good estimator, large and small sample estimation for mean and the proportions. Determination of sample size.

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