SAULT COIJ.EGE
of Applied Arts and Technology
Sault Ste. Marie

COURSE OUTLIN IT

MATHEMATICS

MTH 25 5-4

p^/fQOrJ June 1981 by D. Nicholson

1

j.'^uplied Elementary Statistics - Levin/Rubin

REFERENCE TEXTS:

Statistics - A Fresh Approach by D. H. Sanders, A. F. Murphy and R. J. Eng
McGraw Hill Book Co.

Statistical Techniques in Forestry - A. J. Nash
- Lucan Brother

Forest Mensuration - Chapman & Meyear
- McGraw Hill

Statistical Methods in. Biology - Bailey
- The English University Press

Modern Elementary Statistics - Freund

Principles and Procedures of Statistics - Steel & Torrie
- McGraw Hill

Introduction to Statistical Analysis - Dixon & Massey
- McGraw Kill

Statistical Methods - Snedecor & Cochran
Iowa State University Press

Introduction to Probability and Statistics - Alder & Roessler
- W. J. Freeman and Co.

Self Correcting Problems in Statistics - Whitmore, Neter and V7asserman
- Allyn & Bacon

K0T5S:

The aim of the course is to familiarize students in the Forestry program with basic statistical methods that are used in their prog The course will be supplemented as far as possible with material taken from applied forestry texts.

INTRODUCTION:

We discuss briefly the definition, history and subdivisions within statistics in order to let the students know what they are going to study in this coiirse.

D£SCKI?TIV£ STATISTICS:

Frequency tables, graphs, charts and measures of location are discussed to prepare the students for handling numerical data. Here we touch briefly all the methods of descriptive statistics in "order that the students can see advantages and disadvantages of various methods which will enable them to use the best " approach in simplifying any numerical data.

PROBABILITY AND PROBABILITY DISTRIBUTIONS:

ProbaJbility and Probability Distributions are introduced so that the students can understand normal distribution and its application .Here we try to give a brief but clear conception of probability.

CONFIDENCE INTERVALS: '

Are most essential topics of a statistics course. Practical proble are discussed to faniiliarize the students with the various applicat

REGRESSION AND CORRELATION:

Are commonly used in Forestry for dealing with two variables. Thes topics are discussed with practical problems taken from Nash's *booV*

OBJECTIVES:

Construction of Frequency Tables and Graphs:

The student will be able to:

a) construct frequency tables from raw data
b) sketch the graphs resulting from these frequency tables
c) sketch the bar graphs/ pie charts, etc., from tabulated data.

Measures of Location:

a) determine the arithmetic mean, weighted mean from raw data and frequency tables.
b) calculate median from^raw data and frequency tables.
c) calculate modes for ungrouped data.

Probability and Probability Distribution:

The student will be able to;

a) determine the probability of events,
b) calculate the mathematical expectation.
c) understand and use the addition and multiplication rule.
d) calculate the laean and standard deviation of probability distributions.

The Normal Distribution:

The student will be able to:

a) understand standard normal distribution.
b) convert measurements into standard units.
c) make practical application of the normal distribution.

Sampling and Regression and Correlation:

- understand and calculate random sample and sample size.
- calculate standard error using long methods and coding method.
- use central limit theorem and standard error or the mean.
- calculate regression equations by method of least squares and the slope-intercept method.
- calculate and interpret the coefficient of correlation and sketch scatter diagrams-

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCE
		Introduction Definition, history and subdivisions of statistics	Paaes 1 - 7
		Frequency Tables & Graphs Collection of data, samples and population, construction of frequency tables	Pages 8 - 27
		Histograms, frequency polygons, frequency curves and ogives	Pages 28 -
		Descriptive Measures Meaning of measures of Central Tendency, Arithmetic Mean, weighted mean, median, mo4e(ungrouped data)	Pages 44 - 82
		Measure of Variability Meaning of dispersion, range variance and standard deviation	Pages 84 - II
		Regression and Correlation Scatter diagrams, estimation using regression line, correlation analysis, using regression and correlation analysis	Pages 408 - 443
4		Probability History of probability, two types of probabilities, rule of addition, rule of multiplication	Pages 114 - 143
		Probability Distribution Meaning of probability, distribution. types of distribution, random variable	Pages 160 - 174
		Norma1 Dis tributi on Characteristics, area under the curve. standard Normal curve and its applications	Pages 191 - 203
		Sampling Purpose and definition, different types of sampling, sampling distribution, standard error	Pages 224 - 251
10	10	Estimation Point and internal estimation, criteria of good estimator, large and small sample estimation for mean and the proportions. Determination of sample size.	Pages 258 - 288
TOTAL	52		