

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

X

Course Title           STATISTICS

Code No.                MIH *ess-ry* ^                                 -

Program                 AVIATION

Semester                FOUR

Date:                    JUNE, 1984

Author                                 03 **M^K i**

New:

Revision

APPROVED:

Chairperg^bn

Date

## CALENDAR DESCRIPTION

STATISTICS

MTH 655-3

Course Name

Course Number

### PHILOSOPHY/GOALS:

Statistical thinking and introduction, summarizing data and frequency tables, mean, median, mode, standard deviation, probability and probability functions, sampling concepts, estimation, regression and correlation, hypothesis testing, with computer applications.

### METHOD OF ASSESSMENT (GRADING METHOD);

The students will be assessed by tests. These tests will include periodic tests based upon blocks of subject matter and may, at the instructor's discretion include unannounced surprise tests on current work and/or a final test on the whole course. A letter grade will be based upon a student's weighted average of his test results. See also the mathematics department's annual publication "To the Mathematics Student" which is presented to the students early in each academic year.

### TEXTBOOK(S):

"Statistics and Probability in Modern Life", (3rd Edition), Newmark, Saunders Publishing

### OBJECTIVES;

The basic objective is for the student to develop an understanding of the methods studied, knowledge of the facts presented and an ability to use these in the solution of problems. For this purpose exercises are assigned. Tests will reflect the sort of work contained in the assignments. The level of competency demanded is the level required to obtain an overall passing average on the tests. The material to be covered is listed on the following page.

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TOPIC	PERIODS	TOPIC DESCRIPTION	REFERENCE
1	1	<u>Introduction</u> - definition, development and scope of statistics	pp. 3-18
2	5	<u>Descriptive Statistics</u> - quantitative and qualitative data - discrete and continuous variables - frequency tables, histograms, frequency polygon, cumulative frequency polygon	pp. 21-62
3	8	<u>Measures of Location &amp; Variation</u> - summation notations - means and weighted mean - median, mode - range, variance mean deviation - standard deviation	pp. 65-108
4	8	<u>Probability</u> - meaning and types of probability - probability computations - permutations - combinations dependent and independent events - (Omit Bayes Theorem)	pp. 112-196
5	12	<u>Probability Distributions</u> - definition, binomial distribution only and its mean and standard deviation - normal distribution and normal approximation of the binomial - (Omit Poisson and Hypergeometric)	pp. 214-304

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TOPIC	PERIODS	TOPIC DESCRIPTION	REFERENCE
6	5	<u>Sampling</u> - sampling methods. Central Limit Theorem	pp. 309-334
7	8	<u>Estimation</u> - interval estimate of means and proportions, sample size	pp. 341-372
8	8	<u>Linear Regression</u> ^ <u>Correlation</u> - method of least squares, scatter diagrams, coefficient of correlation, standard error	pp. 422-462
9	8	<u>Hypothesis Testing</u> - hypothesis testing procedure - tests concerning means and proportions - tests concerning differences between means	pp. 376-419