douglas college **Course Information**

A. Division: APPLIED PROGRAMS Date: OCTOBER 24, 1989

B. Department: COMMERCE AND BUSINESS ADMINISTRATION

New Course: [X]

Revision of Course: [ ]

Dated: _____

C. BUS 337 (Subject & Course No.) D. RESEARCH APPLICATIONS I (Descriptive Title) E. 3 (Semester/Credits)

F. Calendar Description:

This course, restricted for HISP program students, is an introduction to statistics in health record information systems with applied computer analysis using SPSS. Topics covered include: preparing data for analysis, describing data, probability distributions, sampling, testing hypotheses, and examining relationships between variables.

Summary of Revisions: (Enter date and Section Revised)

1991-09-12
Section F,N,O,P

G. Type of Instruction: Hrs. Per Week

Lecture	2 Hrs.
Laboratory	Hrs.
Seminar	Hrs.
Clinical Experience	Hrs.
Field Experience	Hrs.
Practicum	Hrs.
Shop	Hrs.
Studio	Hrs.
Student Directed Learning	Hrs.
Other (Specify) Lecture/Practice	2 Hrs.
Total	4 Hrs.

H. Course Prerequisites:
Second semester standing or permission of instructor.
Algebra 12 or equivalent.

I. Course Corequisites:
nil

J. Courses for which this Course is a Pre-requisite:

Research Applications II

K. Maximum Class Size:
24

L. College Credit Transfer [ ]

College Credit Non-Transfer [X]

Non-Credit [ ]

M. Transfer Credit: Requested [X]

Granted [ ]

(Specify Course Equivalents or Unassigned Credit as Appropriate)
U.B.C.
S.F.U. X
U. Vic. X
Other OLA

Patrick Brown
Course Designer(s)

Divisional Dean

Director/Chairperson

Registrar

(Rev. Aug./82)

N. Textbooks and Materials to be Purchased by Students (Use Bibliographic Form):

Daniel W. Biostatistics: A Foundation for Analysis in the Health Sciences, 5th Edition, Wiley, 1991.

Ray Yu. Research Applications I Manual for BUS 337, Douglas College Printers, 1991.

Complete Form with Entries Under the Following Headings: O. Course Objectives; P. Course Content; Q. Method of Instruction; R. Course Evaluation

O. Course Objectives:

The student will be able to:

1. describe data using measures of central tendency and variability;
2. utilize SPSS statistical software to extract data from a database (PRISM), conduct basic statistical computations, and analyze the results.
3. calculate the probability of mutually exclusive, dependent or independent events; apply probability distributions to make estimates;
4. identify appropriate sampling techniques in order to make inferences about the population mean or proportion;
5. set up confidence intervals and conduct tests of significance for the population mean, proportion and variance using small or large samples;
6. set up and conduct tests of hypotheses and interpret results;
7. examine relationships between variables using correlation and linear regression.

P. COURSE CONTENT:

1. Review of Descriptive Statistics

   - scales of measurement
   - frequency distributions
   - histograms, graphs and diagrams
   - averages and variation
   - using SPSS for computing frequencies, averages and variance
   - cross-tabulation

2. Introduction to SPSS

   - setting up a data file
   - defining data
   - running SPSS/PC+
   - the PRISM data base

P. COURSE CONTENT Continued

3. Probability and Probability Distributions

- approaches to probability
- measures of probability or expectation
- mutually exclusive events
- independent and dependent events
- conditional probabilities
- binomial, normal, and poisson distributions

4. Sampling Theory and Techniques

- types of sampling
- surveys
- sampling distributions

5. Statistical Inference

- population parameters and sample statistics
- sampling distribution of the mean
- standard error of the mean
- first limit theorem and central limit theorem
- estimation of the population mean
- confidence intervals
- sample size
- estimation of the population proportion
- z-scores, t-distribution, chi-square distribution
- using SPSS in statistical inference

6. Hypothesis Testing

- null and alternative hypotheses
- test statistics
- test of significance, decision rule
- Type I and Type II error
- z-test, t-test, chi-square test
- using SPSS to test statistical hypotheses

7. Examining Relationships

- correlation co-efficient (r)
- linear regression
- standard error of the estimate
- co-efficient of determination
- using SPSS to calculate (r) and simple regression lines

Q. METHODS OF INSTRUCTION:

1. Lecture/discussion.
2. Computerized application exercises. A significant component of this course requires individual usage of computer facilities.

R. COURSE EVALUATION:

1.	Assignments (Minimum 4).....	40%
2.	Mid-term Exam	20%
3.	Final Exam	30%
4.	Participation	10%
		100%