Douglas College

EFFECTIVE: SEPTEMBER 2002

CURRICULUM GUIDELINES

A: Division: **Instruction**

B: Department/ Program Area: **Commerce & Business Admin. HISP**

Date: **November 2001**

New Course ☐ Revision **X**

If Revision, Section(s) Revised: **H**

Date Last Revised: **1991-12: F, N, O, P**

C:	**D:**	**E:**
BUSN 337	**Research Applications I**	**3**
Subject & Course No.	Descriptive Title	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.

G: Allocation of Contact Hours to Types of Instruction/Learning Settings

Primary Methods of Instructional Delivery and/or Learning Settings:

Lectures and Seminars

Number of Contact Hours: (per week / semester for each descriptor)

Lecture: **2 Hrs.**
Other: **2 Hr.**
Total: **4 Hrs.**

Number of Weeks per Semester:

15 Weeks X 4 Hrs per week = 60 Hrs.

H: Course Prerequisites:
Second semester standing or permission of instructor.
Effective September 2002: English 12 with a grade of "C" or better or equivalent.

I. Course Corequisites:

nil

J. Course for which this Course is a Prerequisite:

Research Applications II

K. Maximum Class Size:

24

L: PLEASE INDICATE:

☐ Non-Credit

X College Credit Non-Transfer

☐ College Credit Transfer: Requested ☐ Granted ☐

SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bccat.bc.ca)

M: Course Objectives/Learning Outcomes

At the end of the course, the successful student should 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.

N: Course Content

1. Review of Descriptive Statistics
   - C scales of measurement
   - C frequency distributions
   - C histograms, graphs and diagrams
   - C averages and variation
   - C using SPSS for computing frequencies, averages and variance
   - C cross-tabulation

2. Introduction to SPSS
   - C setting up a data file
   - C defining data
   - C running SPSS/PC+
   - C the PRISM data base

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

4. Sampling Theory and Techniques
   - C types of sampling
   - C surveys
   - C sampling distributions

5. Statistical Inference
   - C population parameters and sample statistics
   - C sampling distribution of the mean
   - C 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

O: Methods of Instruction

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

P: Textbooks and Materials to be Purchased by Students:

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

Raymond Yu. **Research Applications I Manual for BUSN 337**, Douglas College Printers, 1991.

Q: Means of Assessment

Assignments (Minimum 4)	40%
Mid-term Exam	20%
Final Exam	30%
Participation	10%

DATE: November 2002

100%
R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR No.

Course Designer(s): **Patrick Brown**

Education Council/Curriculum Committee Representative

Dean/Director: **Jim Sator**

Registrar: **Trish Angus**