SIMON FRASER UNIVERSITY

S.81-123

MEMORANDUM

To SENATE	From SENATE COMMITTEE ON UNDERGRADUATE STUDIES
Subject CMPT 360-3 - COMPUTATION FOR STATISTICAL DATA PROCESSING - CHANGE OF DESCRIPTION, CHANGE OF PREREQUISITE	Date JULY 30, 1981

FOR INFORMATION

Acting under its delegated authority, at its meeting of July 28, 1981, SCUS approved change of description and change of prerequisite for CMPT 360-3 - Computation for Statistical Data Processing.

J. M. Munro

SCUS 81-38
S.81-15.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: H.M. Evans, Registrar and Secretary to the Senate Committee on Undergrad Studies

From: Janet Blanchet, Secretary to Faculty of Interdisciplinary Studies Undergrad Curriculum Comm.

Subject: CMPT 360-3 - COMPUTATION FOR STATISTICAL DATA PROCESSING - CHANGE OF DESCRIPTION, CHANGE OF PREREQUISITE

Date: July 16, 1981

Attached is a revision of CMPT 360-3 which redefines the prerequisites. This revision was considered and approved at a meeting of the Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee held on Tuesday, July 7, 1981, and it is forwarded to you for inclusion on the next agenda of the Senate Committee on Undergraduate Studies.

J. M. Blanchet

ATTACHMENT

JB/pgm

RECEIVED
JUL 17 1981
REGISTRAR'S OFFICE
MAIL DESK

I.S.C. 81-11.

CHANGE OF DESCRIPTION, PREREQUISITE

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

~~NEW COURSE PROPOSAL FORM~~

COURSE REVISION

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 360 Credit Hours: 3 Vector: 3-0-0

Title of Course: Computation for Statistical Data Processing

Calendar Description of Course:

This course is designed to develop expertise in using the computer to aid in the statistical analysis of large data sets. Exploratory data analysis and computer graphics. Use of statistical packages and related algorithms. Optional topics possibly including Monte Carlo simulations, cluster analysis, and pattern recognition.

Nature of Course Lecture

Prerequisites (or special instructions):

CMPT 103-4, MATH 232-3 and MATH 302-3: required
MATH 272-3 : recommended

What course (courses), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered?

Semester in which the course will first be offered?

Which of your present faculty would be available to make the proposed offering possible?

3. Objectives of the Course

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library

Audio Visual

Space

Equipment

5. Approval

Date: 19 JUNE 1981

Department Chairman | Dean | Chairman, SCUS

SCUS 73-34b: (When completing this form, for instructions see Memorandum SCUS 73-34a. attach course outline).

PROPOSED DETAILED COURSE OUTLINE

1) Computer assisted exploratory data analysis - a survey of techniques in data presentation.

   i) Numerical summary of data sets: means, medians, fractiles, hinges, etc.

   ii) Graphical summaries: stem-and-leaf plots, boxplots, scatterplots, histograms, etc. Computer graphics for presenting multivariate data sets: Chernoff faces starplots, Andrews plots, projection of higher dimensional scatterplots, etc.

   iii) Graphical techniques in regression and goodness-of-fit: residual plots, probability plots, etc.

2. Use of statistical packages and related algorithms:

   i) A comparative study of widely used packages for statistical analysis including SPSS, BMDP and others.

   ii) Introduction to algorithms for statistical problems - Gaussian elimination on normal equations, centering and standardizing variables, methods based on orthogonal transformations. Diagnostic techniques. Application to the comparison of widely used packages, and to the development of more specialized programs.

3. Optional further topics possibly including:

   - Monte Carlo simulation
   - clustering
   - pattern recognition