SIMON FRASER UNIVERSITY

S.81-164

MEMORANDUM

To: SENATE	From: SENATE COMMITTEE ON UNDERGRADUATE STUDIES
Subject: CHANGES - COMPUTING SCIENCE	Date: NOVEMBER 20, 1981

FOR INFORMATION

Acting under delegated authority at its meeting of November 17, 1981, the Senate Committee on Undergraduate Studies approved changes in Computing Science as follows:

1. Changes in Description for
   CMPT 001-3 Computers and the Activity of People

2. Changes in Prerequisites for
   CMPT 104-1 Introduction to a High Level Programming Language II
   CMPT 105-3 Fundamental Concepts of Computing
   CMPT 118-3 Computing Projects in the Arts Sciences
   CMPT 205-3 Introduction to Formal Topics in Computing Science
   CMPT 290-3 Introduction to Digital Systems
   CMPT 291-4 Introduction to Digital Circuit Design
   CMPT 305-3 Computer Simulation and Modelling
   CMPT 404-4 Computer System Measurement and Evaluation
   CMPT 405-3 Design and Analysis of Computing Algorithms
   CMPT 426-0 Practicum I
   CMPT 427-0 Practicum II
   CMPT 428-0 Practicum III
   CMPT 429-0 Practicum IV

3. Change in Number, Title, Prerequisite for Former
   CMPT 283-3 Programming Languages to
   CMPT 383-3 Comparative Programming Languages

4. Change of Description, Prerequisite for
   CMPT 360-3 Computation for Statistical Data Processing

5. Change in Title for
   CMPT 400-3 Hardware-Software Architecture I to
   Hardware Architecture

   Change in Title, Prerequisite for
   CMPT 401-3 Hardware-Software Architecture II to
   Software Architecture

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of November 17, 1981 gives rise to the following motion.

MOTION: "That Senate approve and recommend approval to the Board of Governors, as set forth in S.81-164, the proposed changes in Computing Science as follows:

1) Changes in lower division course requirements for those who plan a Major or Honors in Computing Science;

2) Amendments to Tables I, II (to be consistent with final SCUS decisions);

3) Lower division course requirements for those who plan a Minor in Computing Science;

4) Upper division course requirements for a Minor in Computing Science."

Some items originally in this submission have been deleted on transmittal to Senate as the topics are still under discussion at SCUS or other bodies. Some will come forward when cleared. Meanwhile action should be undertaken on those transmitted now.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. W. Calvert
FIDS

From: Ronald Harrop
Dept. of Computing Science

Subject: Changes in
Lower Division Course Requirements
Majors and Honors

Date: November 4, 1981.

CHANGE (p. 366) from:

Lower Division Course Requirements

Students who plan to undertake a Major, or Honors in Computing Science must obtain credit for the following lower division courses (or equivalents):

CMPT 103-4	Introduction to a High Level Programming Language I
CMPT 105-3	Fundamental Concepts of Computing
CMPT 118-3	Computing Projects in the Arts and Sciences
CMPT 201-4	Data and Program Organization
CMPT 205-3	Introduction to Formal Topics in Computing Science
CMPT 260-3	Social Implications of a Computerized Society
CMPT 290-3	Introduction to Digital Systems
	OR CMPT 291-4 Analogue and Digital Circuits
MATH 101-3	Introduction to Statistics
MATH 151-3	Calculus I
MATH 152-3	Calculus II
MATH 216-3	Introduction to Computational Methods

MATH 316-3 may be used to satisfy the requirements of MATH 216-3

MATH 272-3 may be used to satisfy the requirements of MATH 101-3.

MATH 232-3 is a prerequisite for CMPT 351-3.

PHYS 150-3 is a prerequisite for CMPT 291-4.

In addition, PHIL 210-4 is recommended.

TO:

Lower Division Course Requirements

Students who plan to undertake a Major, or Honors in Computing Science must obtain credit for the following lower division courses (or equivalents):

~~CMPT 103-4~~	~~Introduction to a High Level Programming Language I~~
CMPT 105-3	Fundamental Concepts of Computing
CMPT 118-3	Computing Projects in the Arts and Sciences
CMPT 201-4	Data and Program Organization
CMPT 205-3	Introduction to Formal Topics in Computing Science
CMPT 260-3	Social Implications of a Computerized Society
CMPT 290-3	Introduction to Digital Systems
	OR CMPT 291-4 Analogue and Digital Circuits
MATH 101-3	Introduction to Statistics

CMPT 101-4 Introduction to Programming Languages for Computing Majors/Minors/Honors

or MATH 272-3 Introduction to Probability and Statistics
(This course is a prerequisite for CMPT 305-3 Computer Simulation and Modelling)

MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 216-3 Introduction to Computational Methods

MATH 316-3 may be used to satisfy the requirements of MATH. 216-3

MATH 232-3 is a prerequisite for CMPT 351-3.
PHYS 150-3 is a prerequisite for CMPT 291-4.
In addition, PHIL 210-4 is recommended.

Approval of calculus courses in place of MATH 151, MATH 152 would be based on corresponding approval within the Mathematics Department.

Rationale

This summarizes changes which have been approved or for which approval is sought.

Registrar's Note: Some items have been deleted as they are still under discussion at SCUS or other bodies and will be brought forward when appropriate.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Ronald Harrop
Dept. of Computing Science

Subject: Amendments to Table 1, 2 in Computing Science Calendar

Date: November 4, 1981.

CHANGE FROM:

TABLE I

Area	Course	Title
Computer Design and Organization	CMPT 390	Digital Circuits & Systems
	CMPT 393	Systems Software for Minicomputers and Microcomputers
	CMPT 400	Hardware-Software Architecture I
	(CMPT 401)	Hardware-Software Architecture II
	CMPT 491	Computers in Real-Time Experiments
	MATH 401	Switching Theory & Logical Design
Software Systems*	CMPT 301	System Development Methodology
	CMPT 305	Computer Simulation & Modeling
	CMPT 401	Hardware-Software Architecture II
	CMPT 404	Computer System Measurement & Evaluation
	CMPT 483	Compiler Construction
	(CMPT 491)	Computers in Real-Time Experiments
Information Systems*	CMPT 302	System Development Projects
	CMPT 350	Information and Public Policy
	CMPT 354	File and Database Structures
	CMPT 370	Information System Design
	CMPT 371	Data Communications and Networking
	CMPT 340	Computers in Biomedicine
Intensive Applications	CMPT 351	Introduction to Computer Graphics
	CMPT 380	Computational Linguistics
	CMPT 410	Artificial Intelligence
	CMPT 451	Interactive Graphics & Animation Systems
Theoretical Computing Science	CMPT 405	Design & Analysis of Algorithms
	MATH 306	Introduction to Automata Theory
	MATH 343	Combinatorial Aspects of Computing
	MATH 401	Switching Theory & Logical Design
	MATH 402	Automata & Formal Languages
Analytical Tools for Scientific Computation	(CMPT 305)	Computer Simulation & Modeling
	CMPT 360	Computation for Statistical Data Processing
	MATH 308	Linear Programming
	MATH 316	Numerical Analysis I
	(MATH 343)	Combinatorial Aspects of Computing
	MATH 408	Discrete Optimization

* Software in this context is distinguished from Information Systems which are meant to include data bases and systems for management decision-making.

CHANGE TO:

TABLE I

Area	Course	Title
Computer Design and Organization	CMPT 390	Digital Circuits & Systems
	CMPT 391-3	Microcomputer Hardware Workshop
	CMPT 392-3	Introduction to Digital Signal Processing
	~~CMPT 400~~	~~Hardware-Software Architecture I~~ ← Hardware Architecture
	~~(CMPT 401)~~	~~Hardware-Software Architecture II~~ ← Software Architecture
	~~CMPT 491~~	~~Computers in Real-Time Experiments~~ Analogue and Digital Circuits
	CMPT 492-3	Microprogramming and Emulation
	CMPT 495-3	Digital Systems Design & Specification Lab I
	CMPT 496-3	Digital Systems Implementation Laboratory
	MATH 401	Switching Theory & Logical Design
Software Systems*	CMPT 301	System Development Methodology
	CMPT 305	Computer Simulation & Modeling
	CMPT 383-3	Comparative Programming Languages
	CMPT 393-4	Systems Software for Minicomputers and Microcomputers
	CMPT 401	~~Hardware-~~Software Architecture ~~II~~
	CMPT 404	Computer System Measurement & Evaluation
	CMPT 483	Compiler Construction
	~~(CMPT 491)~~	~~Computers in Real-Time Experiments~~
Information Systems*	CMPT 302	System Development Projects
	CMPT 350	Information and Public Policy
	CMPT 354	File and Database Structures
	CMPT 370	Information System Design
	CMPT 371	Data Communications and Networking
Intensive Applications	CMPT 351	Introduction to Computer Graphics
	CMPT 380	Computational Linguistics
	CMPT 410	Artificial Intelligence
	CMPT 340	Computers in Biomedicine
	CMPT 451	Interactive Graphics & Animation Systems
Theoretical Computing Science	CMPT 405	Design & Analysis of Algorithms
	MATH 306	Introduction to Automata Theory
	~~MATH 343~~	~~Combinatorial Aspects of Computing~~
	MATH 401	Switching Theory & Logical Design
	MATH 402	Automata & Formal Languages
Analytical Tools for Scientific Computation	(CMPT 305)	Computer Simulation & Modeling
	CMPT 360	Computation for Statistical Data Processing
	~~MATH 308~~	~~Linear Programming~~
	MATH 316	Numerical Analysis I
	~~(MATH 343)~~	~~Combinatorial Aspects of Computing~~
	~~MATH 408~~	~~Discrete Optimization~~

CHANGE FROM

TABLE II

Area	Key Course(s)
Computer Design and Organization	CMPT 400
Software Systems	CMPT 301
Information Systems	CMPT 354
Intensive Application	CMPT 410 or 351
Theoretical Computing Science	MATH 306
Analytical Tools for Scientific Computation	any course

CHANGE TO

TABLE II

Area	Key Course(s)
Computer Design and Organization	CMPT 400
Software Systems	CMPT 301
Information Systems	CMPT 354
Intensive Application	CMPT 410 or 351
Theoretical Computing Science	MATH 306
Analytical Tools for Scientific Computation	~~any course~~ CMPT 305

Rationale

Introduced the new courses into the Tables and make minor modifications.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean FIDS	From: Ronald Harrop Dept. of Computing Science
Subject: Curriculum Changes	Date: November 2, 1981.

Change in Lower Division Course Requirements for a Minor in Computing Science

The entry:

Program for a Minor in Computing Science

Lower Division Course Requirements

Students who plan to undertake a Minor in Computing Science should normally obtain credit for the following lower division courses:

CMPT 103-4	Introduction to a High Level Programming Language I
CMPT 105-3	Fundamental Concepts of Computing
CMPT 118-3	Computing Projects in the Arts and Sciences
CMPT 201-4	Data and Program Organization
CMPT 260-3	Social Implication of a Computerized Society

should be ammended to

Program for a Minor in Computing Science

Lower Division Course Requirements

Students who plan to undertake a Minor in Computing Science should normally obtain credit for the following lower division courses:

~~CMPT 103-4~~	~~Introduction to a High Level Programming Language I~~ CMPT 101-4 Introduction to a Programming Language for Computing Majors/Minors/Honors
CMPT 105-3	Fundamental Concepts of Computing
CMPT 118-3	Computing Projects in the Arts and Sciences
CMPT 201-4	Data and Program Organization
CMPT 260-3	Social Implication of a Computerized Society

or CMPT 205-3 Introduction to Formal Topics in Computing Science

MATH 151-3 Calculus I

Approval of calculus courses in place of MATH 151 would be based on corresponding approval within the Mathematics Department.

RATIONALE

The CMPT 101-4 change has been approved by Senate.
CMPT 205-3 has been introduced as an alternate to CMPT 260.
CMPT 205 provides an introduction to several topics in Theoretical Computer Science. (It is a required course for the major being itself a prerequisite to required courses in the major.)
MATH 151-3 has been added, and a proposed change to the prerequisite for CMPT 201-4.

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Dr. R. Harrop
Dept. of Computing Science

Subject: Upper Division Requirements for Minor

Date: November 6, 1981.

CHANGE FROM:

Upper Division Course Requirements

Students minoring in Computing Science must complete at least 15 credits of upper division Computing Science courses, excluding CMPT 415 and 416. Some suggested sequences from which programs may be chosen are:

Chemistry and Physics —	CMPT 301-3, 305-3, 351-3, 360-3, 390-3, 393-4, 451-3, 491-3, MATH 316-3, 401-3.
Life and Social Sciences —	CMPT 305-3, 340-3, 351-3, 360-3, 390-3, 393-4, 410-4, 451-3, 491-3.
Mathematics —	CMPT 301-3, 305-3, 351-3, 354-3, 405-3, 410-4, 483-4, MATH 306-3, 316-3, 401-3, 402-3.
Business and Management —	CMPT 301-3, 302-3, 305-3, 351-3, 354-3, 370-3, 371-3, 393-4, 404-4.
Humanities —	CMPT 350-3, 351-3, 354-3, 360-3, 380-3, 410-4.

All Minors who want to develop skills in manipulating computer-controlled instruments and display devices (CMPT 491-3) should note that they will require some background in electricity and mechanics (CMPT 290-3 is adequate to provide sufficient information in these areas to enable most students to take CMPT 491-3).

CHANGE TO:

Upper Division Course Requirements

Students minoring in Computing Science must complete at least 15 credits of upper division Computing Science courses, excluding CMPT 415 and 416. ~~Some suggested sequences from which programs may be chosen are:~~

Normally at least 12 of these credits will be in CMPT courses.

Chemistry and Physics —	CMPT 301-3, 305-3, 351-3, 360-3, 390-3, 393-4, 451-3, 491-3, MATH 316-3, 401-3.
Life and Social Sciences —	CMPT 305-3, 340-3, 351-3, 360-3, 390-3, 393-4, 410-4, 451-3, 491-3.
Mathematics —	CMPT 301-3, 305-3, 351-3, 354-3, 405-3, 410-4, 483-4, MATH 306-3, 316-3, 401-3, 402-3.
Business and Management —	CMPT 301-3, 302-3, 305-3, 351-3, 354-3, 370-3, 371-3, 393-4, 404-4.
Humanities —	CMPT 350-3, 351-3, 354-3, 360-3, 380-3, 410-4.

All Minors who want to develop skills in manipulating computer-controlled instruments and display devices (CMPT 491-3) should note that they will require some background in electricity and mechanics (CMPT 290-3 is adequate to provide sufficient information in these areas to enable most students to take CMPT 491-3).

Rationale: There have been some majors in mathematics getting a minor in Computing Science by doing mathematics courses which are acceptable for Computing credit (the courses for which MACM status is sought). The Computing Science Undergraduate Committee and the Department felt this to be undesirable and recommend that the 15 hours upper division credit in Computing Science students required from a student applying for a minor should normally contain 12 hours of credit in CMPT courses.

SCUS 81-69

SIMON FRASER UNIVERSITY

MEMORANDUM

To: H.M. Evans, Registrar and Secretary of the Senate Committee on Undergraduate Studies.

From: Janet Blanchet, Secretary to the Faculty of Interdisciplinary Studies Undergraduate Curriculum Ct

Subject:

Date: November 10, 1981

Re: Computing Science Curriculum Changes (I.S.C. 81-21)

At a meeting of the Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee held today members of the Committee reviewed and approved the attached changes in the Computing Science curriculum.

Would you please place this item on the next agenda of the Senate Committee on Undergraduate Studies for consideration.

J. M. Blanchet

ATTACHMENT

JB/pgm

Registrar's Note: Some further changes may be proposed later.

SIMON FRASER UNIVERSITY

I.S.C. 81-21

MEMORANDUM

To: Dr. T. Calvert, Dean FIDS	From: Dr. R. Harrop Dept. of Computing Science
Subject: Curriculum Changes	Date: November 6, 1981.

I attach copies of recommendation for those changes in the Computing Science calendar which require FIDS approval. All the major changes have been reported previously verbally to the Faculty Committee. Minor changes are consequential ones which are of one of these forms:

(i) greater precision in course description

(ii) greater precision in stating of relevant prerequisites and the bringing of the lower division required mathematics courses into the formal prerequisite structure

(iii) amendment of upper division requirements to take into account the existence of new courses.

The one change not covered in the above statements is the raising of a course from lower division to upper division to fit more appropriately the level of the students attending the course and the actual nature of the course.

RH/dc

Ronald Harrop

Dr. T. Calvert, Dean
FIDS
List of Curriculum Changes

Ronald Harrop
Computing Science
7 November 1981

This memo acts as a list of contents for the documents supplied showing proposed changes to the Computing Science Calendar which are of a Curriculum nature.

Lower Division course requirements
Majors and Honors

Amendments to Tables 1,2

Lower Division course requirements
for Minor
Upper Division course requirments
for Minor

CMPT	001		D	
	104			P
	105			P
	118			P
	201			P
	205			P
	260			P
	283	N	T	P
	290			P
	291			P
	305			P
	360		D	P
	400		T	
	401		T	P
	404			P
	405			P
	~~410~~		~~D~~	
	426			P
	427			P
	428			P
	429			P

KEY: N Number, T Title, D Description, P Prerequisite.

Ronald Harrop

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean FIDS	From: Ronald Harrop Dept. of Computing Science
Subject: CMPT 001 Revised course description	Date: November 4, 1981.

CHANGE FROM

CMPT 001-3 Computers and the Activity of People
The purpose of this course is to provide a basic understanding and knowledge about computers, what they are, what they do, and what they imply. Such information is an increasingly necessary component of the armamentarium of every educated person. Topics covered will be Programming Computers, Programming Languages, Application of Computers to the World of the Arts, Commerce, Industry, Science, and everyday activity, the implications of Computers for the Future of People and Society. This is not just a computer appreciation course. Students will acquire elementary programming skills and critically analyse examples of contemporary research and thought. (Lecture)
No special prerequisite.
Students who have obtained credit for or are currently enrolled in any other Computing Science course may not take this course for further credit.

TO

CMPT 001-3 Computers and the Activity of People
The purpose of this course is to provide a basic understanding and knowledge about computers, what they are, what they do, and what they imply. Such information is an increasingly necessary component of the armamentarium of every educated person. Topics covered will be Programming Computers, Programming Languages, Application of Computers to the World of the Arts, Commerce, Industry, Science, and everyday activity, the implications of Computers for the Future of People and Society. This is not just a computer appreciation course. Students will acquire elementary programming skills and critically analyse examples of contemporary research and thought. (Lecture)
No special prerequisite.
Students who have obtained credit for or are currently enrolled in any other Computing Science course may not take this course for further credit.

This course is concerned with computer literacy and appreciation. What are computers? What do they do? How do they do it? How will they affect us? Illustrations given of applications of computing in the arts, commerce, industry, science and everyday activity. While primarily not a programming course, students will learn some programing as well as critically examining some current developments in the computing field and their implication for the future of individuals and society.

Rationale:

This does not involve changing content of the course but gives a more precise indication of the course content.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Ronald Harrop
Dept. of Computing Science

Subject: Change in Prerequisite
CMPT 104-1

Date: November 3, 1981.

Change from:

CMPT 104-1 Introduction to a High Level Programming Language II
This course is identical to CMPT 103-4 and is intended for the student who wishes to learn a second high level language under supervision and for academic credit. The student may only take this course once for credit. It is considerably easier to master a second high level language; therefore this course carries only one credit. (Lecture/Laboratory)
Prerequisite: CMPT 103-4.
The student must select a different language from that studied in CMPT 103-4.

to

CMPT 104-1 Introduction to a High Level Programming Language II
This course is identical to CMPT 103-4 and is intended for the student who wishes to learn a second high level language under supervision and for academic credit. The student may only take this course once for credit. It is considerably easier to master a second high level language; therefore this course carries only one credit. (Lecture/Laboratory)
~~*Prerequisite: CMPT 103-4.*~~
~~*The student must select a different language from that studied in CMPT 103-4.*~~

PREREQUISITE: CMPT ~~104-1~~ 101-4 (or 103-4 with a grade of B or higher). The student must select a different language from that studied in CMPT 101 or 103.

RATIONALE:

These changes are consequent on approved changes in CMPT 103 and the introduction of CMPT 101.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean FIDS	From: Ronald Harrop Dept. of Computing Science
Subject: CMPT 105-3 - Change in Prerequisite	Date: November 3, 1981.

Change from:

***CMPT 105-3 Fundamental Concepts of Computing**
This course introduces fundamental concepts and procedures by which problems are defined, described, and implemented on computing machines. The student learns principle organizations of computer architecture, how instructions are implemented, the principles of machine, assembly and higher order languages, principles of monitors and executive systems, interactions of hardware and software designs. (Lecture/Tutorial)
Prerequisite: CMPT 103-4.
Students with credit for CMPT 100-3 may not take this course for further credit.

to

***CMPT 105-3 Fundamental Concepts of Computing**
This course introduces fundamental concepts and procedures by which problems are defined, described, and implemented on computing machines. The student learns principle organizations of computer architecture, how instructions are implemented, the principles of machine, assembly and higher order languages, principles of monitors and executive systems, interactions of hardware and software designs. (Lecture/Tutorial)
~~*Prerequisite: CMPT 103-4.*~~
~~*Students with credit for CMPT 100-3 may not take this course for further credit.*~~

PREREQUISITE:

CMPT 101-4 (or 103-4 with a grade of B or higher)

RATIONALE:

This change is consequent on approved changes in CMPT 103 and the introduction of CMPT 101.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Ronald Harrop
Dept. of Computing Science

Subject: CMPT 118-3
Change in Prerequisite

Date: November 3, 1981.

Change from:

***CMPT 118-3 Computing Projects in the Arts and**
This course is intended primarily to strengthen an computer applications and techniques. Emphasis tured programming, documentation, validation of

Prerequisite: See below.

Short project courses are sometimes offered u

CMPT 121-1	Computing Project -
CMPT 131-1	Computing Project -
CMPT 132-1	Computing Project -
CMPT 141-1	Computing Project -
CMPT 142-1	Computing Project -
CMPT 151-1	Computing Project -
CMPT 152-1	Computing Project -
CMPT 161-1	Computing Project -
CMPT 162-1	Computing Project -
CMPT 163-1	Computing Project -
CMPT 164-1	Computing Project -
CMPT 165-1	Computing Project -
CMPT 171-1	Computing Project -
CMPT 172-1	Computing Project -
CMPT 181-1	Computing Project -
CMPT 182-1	Computing Project -
CMPT 183-1	Computing Project -
CMPT 184-1	Computing Project -
CMPT 185-1	Computing Project -
CMPT 186-1	Computing Project -

Prerequisite for CMPT 118 through CMPT short project courses may require additional pr

To:

***CMPT 118-3 Computing Projects in the Arts and Sciences**
This course is intended primarily to strengthen and broaden the student's experience with computer applications and techniques. Emphasis will be placed on project planning, structured programming, documentation, validation of programs, and performance evaluation. (Lecture/Tutorial)

Prerequisite: See below.

Short project courses are sometimes offered under the following numbers:

CMPT 121-1	Computing Project — Mathematics
CMPT 131-1	Computing Project — Chemistry
CMPT 132-1	Computing Project — Physics
CMPT 141-1	Computing Project — Biology
CMPT 142-1	Computing Project — Kinesiology
CMPT 151-1	Computing Project — Geography
CMPT 152-1	Computing Project — Archaeology
CMPT 161-1	Computing Project — Anthropology
CMPT 162-1	Computing Project — Communication
CMPT 163-1	Computing Project — History
CMPT 164-1	Computing Project — Political Science
CMPT 165-1	Computing Project — Sociology
CMPT 171-1	Computing Project — Business Administration
CMPT 172-1	Computing Project — Economics
CMPT 181-1	Computing Project — Languages
CMPT 182-1	Computing Project — Linguistics
CMPT 183-1	Computing Project — English
CMPT 184-1	Computing Project — Literature
CMPT 185-1	Computing Project — Design
CMPT 186-1	Computing Project — Music

~~*Prerequisite for CMPT 118 through CMPT 186 inclusive: CMPT 103-4. Some short project courses may require additional prerequisites.*~~

PREREQUISITE for CMPT 118 through CMPT 186 inclusive:
CMPT 101-4 (or CMPT 103-4 with a grade of B or higher)

RATIONALE:

This change is consequent on approve changes in CMPT 103 and the introduction of CMPT 101.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Ronald Harrop
Dept. of Computing Science

Subject: CMPT 201-4
Change in Prerequisite

Date: November 3, 1981.

Change from:

***CMPT 201-4 Data and Program Organization**
This course reviews the basic organization of programs, data, and control languages and input/output routines. Advanced methods will be introduced for the design and implementation of large programs including the need for, type of, and implementation of modular design programs. (Lecture/Tutorial)
Prerequisites: CMPT 103-4, 105-3 and 118-3.

to

***CMPT 201-4 Data and Program Organization**
This course reviews the basic organization of programs, data, and control languages and input/output routines. Advanced methods will be introduced for the design and implementation of large programs including the need for, type of, and implementation of modular design programs. (Lecture/Tutorial)
~~*Prerequisites: CMPT 103-4, 105-3 and 118-3.*~~

PREREQUISITES: CMPT 105-3, MATH 151-3

RATIONALE:

Since CMPT 105 requires CMPT 103 there is no need to mention CMPT 103 explicitly; the Mathematics course required for minors, majors and honours ought to be taken by the time this course is studied and has been added as a formal prerequisite to the course.

Registrar's Note: Some further changes may be proposed later.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean FIDS	From: Ronald Harrop Dept. of Computing Science
Subject: CMPT 205-3 Change in Prerequisite	Date: November 3, 1981.

Change from:

*CMPT 205-3 Introduction to Formal Topics in Computing Science
This course provides an introduction to the theoretical aspects of computing, building on computational concepts encountered in CMPT 103-4 and 105-3. Topics include discrete mathematical structures as they apply to computing science, and an introduction to the formal study of models of computation, formal languages and algorithms. This material is developed more extensively in subsequent upper level theory courses. (Lecture/Tutorial)
Prerequisites: CMPT 103-4 and 105-3.

to

*CMPT 205-3 Introduction to Formal Topics in Computing Science
This course provides an introduction to the theoretical aspects of computing, building on computational concepts encountered in CMPT 103-4 and 105-3. Topics include discrete mathematical structures as they apply to computing science, and an introduction to the formal study of models of computation, formal languages and algorithms. This material is developed more extensively in subsequent upper level theory courses. (Lecture/Tutorial)
~~*Prerequisites: CMPT 103-4 and 105-3.*~~

PREREQUISITES: CMPT 105-3, MATH 151-3

RATIONALE:

There is no need to mention CMPT 103 since it is a prerequisite for CMPT 105; it is considered that the MATH 151 course should be completed before this course is attempted. This is to ensure that the student has reached a standard of mathematical sophistication appropriate to the content of CMPT 205.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Ronald Harrop
Dept. of Computing Science

Subject: CMPT 260-3 - Change in Prerequisite

Date: November 3, 1981.

Change from:

***CMPT 260-3 Social Implications of a Computerized Society**
An examination of social processes that are being automated and implications for good and evil, that may be entailed in the automation of procedures by which goods and services are allocated. Examination of what are dehumanizing and humanizing parts of systems and how systems can be designed to have a humanizing effect. (Lecture/Seminar)
Prerequisites: CMPT 103-4, or 105-3 (or CMPT 001-3 for students not taking Computing Science programs) and completion of 45 semester hours of credit.

to

***CMPT 260-3 Social Implications of a Computerized Society**
An examination of social processes that are being automated and implications for good and evil, that may be entailed in the automation of procedures by which goods and services are allocated. Examination of what are dehumanizing and humanizing parts of systems and how systems can be designed to have a humanizing effect. (Lecture/Seminar)
Prerequisites: ~~CMPT 103-4, or 105-3 (or CMPT 001-3 for students not taking Computing Science programs) and completion of 45 semester hours of credit.~~

PREREQUISITES: A course in Computing Science, and 45 semester hours of credit.

RATIONALE:
The possibility exists of persons not specializing in Computing Science taking this course.

Registrar's Note: Some further changes may be proposed later.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Ronald Harrop
Dept. of Computing Science

Subject: CMPT 283-3 Title Change, Number Change and Prerequisite Change

Date: November 6, 1981.

CHANGE FROM:

CMPT 283-3 Programming Languages
This course introduces the student to the structures of different programming languages. Global properties of algorithmic languages will be compared including scope of storage allocation, grouping statements, control of program logic, type of procedures implemented, default mechanisms, and debugging facilities. Students will learn to evaluate different languages and when some are of greater use than others. (Lecture/Tutorial)
Prerequisites: CMPT 103-4, 105-3, 118-3, at least one course in Grammar, a Foreign Language, or Linguistics.

CHANGE TO:

~~CMPT 283-3 Programming Languages~~
This course introduces the student to the structures of different programming languages. Global properties of algorithmic languages will be compared including scope of storage allocation, grouping statements, control of program logic, type of procedures implemented, default mechanisms, and debugging facilities. Students will learn to evaluate different languages and when some are of greater use than others. (Lecture/Tutorial)
~~*Prerequisites: CMPT 103-4, 105-3, 118-3, at least one course in Grammar, a Foreign Language, or Linguistics.*~~

CMPT 383-3 COMPARATIVE PROGRAMMING LANGUAGES

Prerequisite: CMPT 201-4

Rationale:

It is considered that the course as currently taught would be more suitably labelled as an upper division course and that the prerequisite of CMPT 201 would be advisable. Students attending the course generally have that prerequisite. The course description remains unchanged.

MEMORANDUM

To: Dr. T. Calvert, Dean FIDS	From: Ronald Harrop Dept. of Computing Science
Subject: CMPT 290-3 Change of Prerequisite	Date: November 3, 1981.

CHANGE FROM:

***CMPT 290-3 Introduction to Digital Systems**
The physical principles underlying digital circuitry will be developed. Digital circuit components will be introduced and typical digital systems will be described. The aim is to give those with minimal background in the physical sciences an understanding of the physical limits which govern the organization and performance of computers. (Lecture/Laboratory)
Prerequisite: CMPT 105-3.
CMPT 290-3 may not be taken for further credit by those who have obtained credit or are concurrently registered in CMPT 291-4.

TO

***CMPT 290-3 Introduction to Digital Systems**
The physical principles underlying digital circuitry will be developed. Digital circuit components will be introduced and typical digital systems will be described. The aim is to give those with minimal background in the physical sciences an understanding of the physical limits which govern the organization and performance of computers. (Lecture/Laboratory)
~~*Prerequisite: CMPT 105-3.*~~
CMPT 290-3 may not be taken for further credit by those who have obtained credit or are concurrently registered in CMPT 291-4.

PREREQUISITES:

CMPT 105-3 and MATH 151-3 ~~(or MATH 157-3 with a grade of B or higher)~~

Rationale:

The mathematics course required for majors and minors should have been completed by this stage of a student's program; knowledge of some material from that course as well as the degree of mathematical sophistication associated with the course is appropriate before a student attempts CMPT 290.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean FIDS	From: Ronald Harrop Dept. of Computing Science
Subject: CMPT 291-4 Change in Prerequisite	Date: Nov 3, 1981.

Change from:

***CMPT 291-4 Introduction to Digital Circuit Design**
Digital circuit design principles are developed for small, medium and large scale integrated circuit building blocks. Topics include switching theory, transistor theory, micro-processor interfacing and analog/digital and digital/analog conversion. A sequence of laboratory experiments parallel and augment lecture material. Laboratory work is assisted by a microprocessor development system, which itself is examined in detail.
(Lecture/Laboratory)
Prerequisites: PHYS 150-3, CMPT 105-3.
CMPT 291-4 may not be taken for further credit by those who have obtained credit in CMPT 290-3.

to

***CMPT 291-4 Introduction to Digital Circuit Design**
Digital circuit design principles are developed for small, medium and large scale integrated circuit building blocks. Topics include switching theory, transistor theory, micro-processor interfacing and analog/digital and digital/analog conversion. A sequence of laboratory experiments parallel and augment lecture material. Laboratory work is assisted by a microprocessor development system, which itself is examined in detail.
(Lecture/Laboratory)
Prerequisites: ~~PHYS 150-3, CMPT 105-3.~~
CMPT 291-4 may not be taken for further credit by those who have obtained credit in CMPT 290-3.

Prerequisites: PHYS 150-3, CMPT 105-3 and MATH 151-3

Rationale:

The mathematics course required for majors and minors should have been completed by this stage of a student's program; knowledge of some material from that course as well as the degree of mathematical sophistication association with the course is appropriate before a student attempts CMPT 291.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Dr. R. Harrop
Dept. of Computing Science

Subject: CMPT 305 Prerequisite

Date: November 6, 1981.

CHANGE FROM:

CMPT 305-3 Computer Simulation and Modelling
This course introduces the techniques for modelling and computer simulation of complex systems. The philosophy and practice of modelling and of Monte Carlo simulation will be reviewed. The student will learn at least one simulation language (SIMULA, SIMSCRIPT, GPSS, CCS or other languages implemented at SFU), apply it to a model, and simulate a non-trivial system from his/her area of interest. (Lecture/Tutorial)
Prerequisites: CMPT 201-4. At least six credits in a Science, Kinesiology, or Business. Some knowledge in statistics and probability (at least at the level of MATH 101-3).

CHANGE TO:

CMPT 305-3 Computer Simulation and Modelling
This course introduces the techniques for modelling and computer simulation of complex systems. The philosophy and practice of modelling and of Monte Carlo simulation will be reviewed. The student will learn at least one simulation language (SIMULA, SIMSCRIPT, GPSS, CCS or other languages implemented at SFU), apply it to a model, and simulate a non-trivial system from his/her area of interest. (Lecture/Tutorial)
Prerequisites: ~~CMPT 201-4. At least six credits in a Science, Kinesiology, or Business. Some knowledge in statistics and probability (at least at the level of MATH 101-3).~~

~~CMPT~~ CMPT 201-4, MATH 272-3 and at least six credits in a Science, Kinesiology or Business.

Rationale: The statistic prerequisite of MATH 101-3 has been found to be unsatisfactory for the presentation of the material to be covered in the course.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dean Calvert
FIDS

From: Ronald Harrop
Dept. of Computing Science

Subject: Change of Description
CMPT 360 - Change of Prerequisites

Date: November 3, 1981.

Change from:

CMPT 360-3 Computation for Statistical Data Processing
This course provides the student with the background required for applying computers to the statistical analysis of scientific data. Special computer-controlled instrumentation for data acquisition and display. Graphic and numeric description of data using varieties of available output devices. Curve fitting, linear and non-linear, multiple regression. Special search techniques for data screening. Interactive data processing. (Lecture/Tutorial)
Prerequisites: CMPT 103-4 and a background in statistics and in research methods are required.

to

~~CMPT~~ 360-3 Computation for Statistical Data Processing
his course provides the student with the background required for applying computers to e statistical analysis of scientific data. Special computer-controlled instrumentation for ta acquisition and display. Graphic and numeric description of data using varieties of ailable output devices. Curve fitting, linear and non-linear, multiple regression. Special arch techniques for data screening. Interactive data processing. (Lecture/Tutorial)
rerequisites: ~~CMPT 103-4 and a background in statistics and in research methods are~~
quired.

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.

Prerequisites: CMPT 101-4 (or 103-4 with a grade of B or higher), MATH 232-3, MATH 302-3, MATH 272-3 is recommended.

Rationale:

The new outline gives a more precise description of the course content than the original outline. The number change is in accordance with a decision previously passed by FIDS. The prerequisites, like the course content, have been agreed between Computing Science and Mathematics. These new prerequisites are more precise than the original ones.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Dr. R. Harrop
Dept. of Computing Science

Subject: CMPT 400 CHANGE OF TITLE

Date: November 6, 1981.

CHANGE FROM:

•CMPT 400-3 Hardware-Software Architecture I
This course explores the functional behavior and underlying structures of computer systems. Topics include evolution of computer architectures, memory organizations, microarchitectures, virtual memories, microprogramming, stack machines, pipelined processors, array processing and protection. (Lecture)
Prerequisites: CMPT 201-4, 205-3, and 290-3 or 291-4.

CHANGE TO:

•CMPT 400-3 ~~Hardware-Software Architecture I~~ ← Hardware Architecture
This course explores the functional behavior and underlying structures of computer systems. Topics include evolution of computer architectures, memory organizations, microarchitectures, virtual memories, microprogramming, stack machines, pipelined processors, array processing and protection. (Lecture)
Prerequisites: CMPT 201-4, 205-3, and 290-3 or 291-4.

Rationale:

The uncoupling of the courses CMPT 400, CMPT 401 fits more closely with the method of presentation of the courses one of which is concerned with Hardware, the other with Software.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Dr. R. Harrop
Dept. of Computing Science

Subject: CMPT 401 - Change of Title and Change of Prerequisite

Date: November 6, 1981.

CHANGE FROM:

CMPT 401-3 Hardware-Software Architecture II
This is the second semester of the hardware-software architecture sequence. Topics include evolution of operating systems, multiprogramming and time-sharing, concurrent processes, process co-operation, deadlocks and scheduling algorithms. (Lecture)
Prerequisite: CMPT 400-3.

CHANGE TO:

CMPT 401-3 ~~Hardware-Software Architecture II~~ <-- Software Architecture
This is the second semester of the hardware-software architecture sequence. Topics include evolution of operating systems, multiprogramming and time-sharing, concurrent processes, process co-operation, deadlocks and scheduling algorithms. (Lecture)
Prerequisite: ~~CMPT 400-3~~.

CMPT 201-4, 205-3

Rationale:

The uncoupling of the courses CMPT 400, CMPT 401 fits more closely with the method of presentation of the courses one of which is concerned with Hardware, the other with Software.

There is no need to impose a CMPT 400 prerequisite on the CMPT 401 course. The relevant CMPT 400 prerequisites have been inserted.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Dr. R. Harrop
Dept. of Computing Science

Subject: CMPT 404-4 Prerequisite

Date: November 6, 1981.

CHANGE FROM:

CMPT 404-4 Computer System Measurement and Evaluation
This course introduces the major problems encountered and choice of available methods to evaluate suitability and performance of a computer system. Topics include evaluation of objectives, economics of computers, measurement of tools and techniques, analysis of performance, special problems. (Lecture/Tutorial)
Prerequisites: CMPT 400-3 and a working knowledge of applied statistics.

CHANGE TO:

CMPT 404-4 Computer System Measurement and Evaluation
This course introduces the major problems encountered and choice of available methods to evaluate suitability and performance of a computer system. Topics include evaluation of objectives, economics of computers, measurement of tools and techniques, analysis of performance, special problems. (Lecture/Tutorial)
Prerequisites: ~~CMPT 400-3 and a working knowledge of applied statistics.~~

CMPT 305-3 and CMPT 400-3

Rationale:

The phrase 'working knowledge of statistics' has been made more precise through the statistics requirements implicit in CMPT 305-3 (namely MATH 272-3). The course is a sequel to CMPT 305.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean
FIDS

From: Dr. R. Harrop
Dept. of Computing Science

Subject: CMPT 405-3 Prerequisite

Date: November 6, 1981.

CHANGE FROM:

•**CMPT 405-3 Design and Analysis of Computing Algorithms**
Models of computation; methods of algorithm design; complexity of algorithms; algorithms on graphs and integers, sorting and searching, NP-complete problems, applications in graphics and artificial intelligence. (Lecture)
Prerequisites: CMPT 201-4 and 205-3 or MATH 243-3.

CHANGE TO:

•**CMPT 405-3 Design and Analysis of Computing Algorithms**
Models of computation; methods of algorithm design; complexity of algorithms; algorithms on graphs and integers, sorting and searching, NP-complete problems, applications in graphics and artificial intelligence. (Lecture)
Prerequisites: ~~*CMPT 201-4 and 205-3 or MATH 243-3*~~.

CMPT 201-4, MATH 152-3, and CMPT 205-3 or MATH 243-3, and MATH 216-3 or MATH 232-3

Rationale:

The mathematical prerequisites have been strengthened to make them more appropriate to the level of the course. The courses added are ones which have for some years been required or recommended for students majoring in Computing Science. As they are lower division courses, students would normally be expected to have completed them in any case before entering CMPT 405.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. T. Calvert, Dean, FIDS

From: Dr. R. Harrop, Dept. of Computing Science

Subject: CMPT 426-427/428/429 Change in Prerequisite

Date: November 6, 1981.

CHANGE FROM:

CMPT 426-0 Practicum I
This is the first semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice.
Prerequisite: Open only to Computing Science Co-op students. The Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 427-0 Practicum II
This is the second semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice.
Prerequisite: Open only to Computing Science Co-op students. The Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 428-0 Practicum III
This is the third semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice.
Prerequisite: Open only to Computing Science Co-op students. The Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 429-0 Practicum IV
This is the fourth semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice.
Prerequisite: Open only to Computing Science Co-op students. The Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CHANGE TO:

CMPT 426-0 Practicum I
This is the first semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice.
Prerequisite: ~~Open only to Computing Science Co-op students~~. The Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 427-0 Practicum II
This is the second semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice.
Prerequisite: ~~Open only to Computing Science Co-op students~~. The Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 428-0 Practicum III
This is the third semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice.
Prerequisite: ~~Open only to Computing Science Co-op students~~. The Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 429-0 Practicum IV
This is the fourth semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice.
Prerequisite: ~~Open only to Computing Science Co-op students~~. The Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

Rationale: The restriction of admission to only Computing Science Co-op students is being removed as a formal restriction.