SIMON FRASER UNIVERSITY S.77-160

MEMORANDUM

To Senate	From Senate Committee on Undergraduate Studies
Subject New Courses and Changes: Computing Science	Date November 23, 1977

Action taken by the Senate Committee on Undergraduate Studies at its meeting of November 22, 1977, gives rise to the motions:

MOTION I

That the proposed new courses, CMPT 110-3 (Introduction to Computation in the Humanities) and CMPT 380-3 (Computational Linguistics), as set forth in S.77-160, be approved and recommended to the Board for approval.

NOTE - The two courses proposed are intended to replace CMPT 280-3 (Computation in the Humanities I) and CMPT 380-3 (Computation in the Humanities II - The Computer and the Humanist). There has now been extensive consultation between the originator of the course, Professor Cercone, and Professor Roberts, representative of Linguistics and Chairman of the Faculty of Arts Curriculum Committee. This consultation focussed on making the courses maximally useful to students in such fields as Linguistics.

MOTION 2

That the proposed changes in course description, prerequisite, and title, as set forth in S.77-160, be approved and recommended to the Board for approval. Specific changes proposed are as follows:

Change in Description
CMPT 118-3

Change in Prerequisite
CMPT 201-4
CMPT 240-3
CMPT 250-3
CMPT 283-3
CMPT 290-3
CMPT 291-3

. . . 2

Change in Title and Description
CMPT 301-3
CMPT 302-3
CMPT 351-3

Change in Description and Prerequisite
CMPT 400-3

Change in Description
CMPT 401-3

Change in Description and Prerequisite
CMPT 410-4

Change in Title, Description and Prerequisite
CMPT 411-5
CMPT 412-5
CMPT 413-5

Change in Title and Prerequisite
CMPT 451-3

Change in Title
CMPT 493-1

Change in Title and Prerequisite
CMPT 494-1

MOTION 3

That the proposed change in Lower Division Requirements for Majors and Honours in Computing Science, as set forth in S.77-160 be approved and recommended to the Board for approval.

D. R. Birch

DRB/tb

SIMON FRASER UNIVERSITY

SCUS 77-55A
S77-160

MEMORANDUM

To Mr. H.M. Evans, Registrar and Secretary, Senate Committee on Undergraduate Studies	From Janet M. Blanchet, Secretary Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee
Subject Revised New Course Proposals, CMPT. 110 and CMPT. 380	Date November 14, 1977

At a meeting held on November 7, 1977 the Faculty of Interdisciplinary Studies Undergraduate Committee approved changes made in the outlines of the above-noted courses, and I am resubmitting them to you for inclusion on the next agenda of the Senate Committee on Undergraduate Studies.

J. M. Blanchet

Janet M. Blanchet

JMB:jk

Attachment

SIMON FRASER UNIVERSITY

U.G.C. 77-52 (revised)

MEMORANDUM

To: John Dickenson, Chairman
Fac. of Interdisciplinary Studies
Undergraduate Curriculum Committee

From: N. Cercone

Subject: CMPT 110, CMPT 380

Date: November 14, 1977.

On 4 November, 1977 a meeting was held between T. Calvert (Dean of Interdisciplinary Studies), W. Roberts (Linguistics), and myself to discuss the CMPT 110 and CMPT 380 course proposals. As a result of that meeting the course outlines were modified and shortened to bring them closer in line with the content I envisaged. The nature of the changes for the most part involve a scaling down in the number of topics to be presented in each course and to allow provision for further investigations by students in complementary programs.

cc. T. Calvert

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

I.S.C. 77-32 (revised)

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 110 Credit Hours: 3 Vector: (3-1-0)

Title of Course: Introduction to Computation in the Humanities

Calendar Description of Course:

See Attached

Nature of Course Lecture / Tutorial

Prerequisites (or special instructions):

30 credit hours

What course (courses), if any, is being dropped from the calendar if this course is approved: CMPT 280

2. Scheduling

How frequently will the course be offered? Once Yearly (More if demand exist

Semester in which the course will first be offered? Fall, 1978

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

3. Objectives of the Course

To present students with an overview of techniques, methodology, and use of computers in humanistic work.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library None (replaces existing CMPT 280)

Audio Visual

Space

Equipment

5. Approval

Date: 11/14/77	14 Nov 77	22/11/77
Department Chairman	Dean	Chairman, SCUS

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

Calendar Description

Introduction to Computation in the Humanities

CMPT 110-3 (3-1-0)

This course is designed to present the student with an overview of the techniques, methodology, and use of computers in ~~humanistic work~~ the humanities. Students will be introduced to the concepts of several programming languages with emphasis on the uses to which they have been put for various types of humanistic research.

Note: Students will be expected to work on individual projects. In exceptional cases a group project may be sanctioned. Topics for projects can be picked by the student (after consultation) or may (by default) be assigned. In addition, one exam (take home, open notes, essay-type) will be given sometime toward the end of the term, and several homeworks will be assigned.

Introduction to Computation in the Humanities

Course Outline

Week	Material
1	Artificial Intelligence and its relationship to the humanities: what is Artificial Intelligence [AI]; AI research methods; the future.
2-4	Introduction to programming languages for humanistic endeavours: basic constructs, examples, structures, and uses of PL/1, LISP, SNOBOL (SPITBOL), ALGOL (ALGOLW, PASCAL).
5-6	Text Processing; classical methods of text processing (data representation, various kinds of indicies, concordances and frequency counts, etc.); editing; concordances; cryptography; stylistic description; authorship attribution; style analysis.
7-8	Machine Dictionaries: goals and functions in linguistic research; compiling, look-up; updating; survey of existing dictionaries; word morphology.
9	Simple parsing without complete sentence analysis.
10-11	Data Base Concepts: Data Base storage and structure; data retrieval; bibliographies; catalogues; thesaurses; archives; interactive use of data bases; information retrieval systems; organisation.
12	Selected discussions from the following topics (suitable for term paper projects):: Text processing in Law; Computer produced braille; The computer in art and visual display; Computer analysis, synthesis, and composition in music; Computer generated stories; Quantative methods in non-verbal oriented research including history, archeology, fine arts, and music;

REFERENCE MATERIALS

Lusignan, S., and North, J. (eds), (1977). COMPUTING IN THE HUMANITIES: Proceedings of the Third International Conference on Computing in the Humanities, Univ of Waterloo Press, Waterloo, Ontario.

Computers and the Humanities

Computer Studies in the Humanities and Verbal Behaviour

Computers and People

Computers and Human Concern

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

I.S.C. 77-52 (revised)

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: COMPUTING SCIENCE

Abbreviation Code: CMPT Course Number: 380 Credit Hours: 3 Vector: (3-1-0)

Title of Course: COMPUTATIONAL LINGUISTICS

Calendar Description of Course:

SEE ATTACHED

Nature of Course LECTURE/TUTORIAL

Prerequisites (or special instructions):

CMPT 201, CMPT 205 - OR -

CMPT 110, LING 405, LING 406 FOR THE NON-CMPT MAJOR

What course (courses), if any, is being dropped from the calendar if this course is approved: THIS IS TO REPLACE THE EXISTING CMPT 380.

2. Scheduling

How frequently will the course be offered? ONCE YEARLY (MORE IF DEMAND EXISTS)

Semester in which the course will first be offered? SPRING, 1979

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

3. Objectives of the Course

TO PRESENT STUDENTS WITH THE THEORETICAL AND APPLIED BACKGROUND TO CONSTRUCT AND MODEL SYSTEMS WHICH AIM TO EXTRACT AND REPRESENT THE MEANING OF NATURAL LANGUAGE UTTERANCES.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library NONE (CMPT 380 ALREADY EXISTS)

Audio Visual

Space

Equipment

5. Approval

Date: 11/14/77	14 Nov 77	22/11/77
Department Chairman	Dean	Chairman, SCUS

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

Calendar Description

Computational Linguistics

CMPT 380-4

(3-1-0)

This course examines the theoretical and applied problems of constructing and modeling systems, which aim to extract and represent the meaning of natural language sentences or of whole discourses, by drawing on contributions from the fields of linguistics, artificial intelligence, and computing science.

Note: Students will be expected to work on individual projects. In exceptional cases a group project may be sanctioned. Topics for projects can be picked by the student (after consultation) or may (by default) be assigned. In addition, one exam (take home, open notes, essay-type) will be given sometime toward the end of the term, and several homeworks will be assigned.

Computational Linguistics

Course Outline

Week	Material
1	Introduction to computational linguistics: history, aims, results, and applications.
2-4	Methodology: computing, linguistic, and mathematical foundations of computational linguistics; software (including LISP programming); tools.
5-6	Knowledge Representations: declarative and procedural knowledge; logic; semantic networks; frames, scripts, plans, schemata; models stressing intensional and extensional representations.
7	Introduction to Grammatical Processing: computational techniques for transformational, relational and transition-network grammars; computational models of psychological processes.
8	Reasoning and Inference procedures: survey of recent work in artificial intelligence in relation to language and cognitive simulation; reasoning from incomplete knowledge; heuristic methods of improving inference.
9	Discourse and conversational modeling: analysis and synthesis procedures; control structures, actors, demons, embedded procedural attachment of knowledge.
10	Descriptions of working natural language understanding systems: the role of their components; difficult or unsolved problems.
11	Speech Recognition and Speech Understanding: review of actual projects; special requirements of components of continuous speech understanding systems.
12	Applications: actual and perspective applications of computational linguistics.

REFERENCE MATERIALS

American Journal of Computational Linguistics
Journal of Cognitive Psychology
Cognition
Cognitive Science
Artificial Intelligence

Bobrow, D., and Collins, A. (1975). REPRESENTATION AND UNDERSTANDING, Academic Press.

Winograd, T. (1972). UNDERSTANDING NATURAL LANGUAGE, Academic Press.

Davidson, D. and Harman, G. (eds) (1972). SEMANTICS OF NATURAL LANGUAGE, D. Reidel Publishing Company, Boston, Massachusetts.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Nick Cercone, Computing Science.	From: Ch. P. Bouton, Chairman, Department of Modern Languages.
Subject: CMPT 380 Proposal.	Date: October 11, 1977.

After consultation with the Linguistic Division of this Department, this is to let you know that there is no overlap between our program and your course proposal, at least not at the undergraduate level. Our computational linguistic course is in the Calendar at the graduate level.

On the other hand, may I again tell you that we would be most pleased if you would give a talk to our graduate students at our Linguistics Colloquium.

CPB/bg

Ch. P. Bouton,
Chairman, DML.

cc - Dr. J. Hust

SIMON FRASER UNIVERSITY

SCUS 77-55

MEMORANDUM

To Mr. H.M. Evans, Registrar and Secretary of the Senate Committee on Undergraduate Studies	From J. Blanchet, Secretary of the Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee
Subject I.S.C. 77-32 Computing Science	Date November 7, 1977

New Course Proposals and Curriculum Modifications

At a meeting held on November 1, 1977 the Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee approved the changes outlined in the attached paper.

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

J. M. Blanchet
Janet M. Blanchet

JMB:jk

Attachment

SIMON FRASER UNIVERSITY

MEMORANDUM

To Chairman,
Faculty of Interdisciplinary Studies
Undergraduate Curriculum Committee

From David G. Kirkpatrick, Chairman
Computing Science Program
Undergraduate Curriculum Committee

Subject COURSE PROPOSAL FORMS

Date November 4, 1977

Attached are New Course Proposal Forms detailing changes in Course Title/Calendar Description/Prerequisites for the following courses: CMPT 118-3, CMPT 201/4, CMPT 240-3, CMPT 250-3, CMPT 283-3, CMPT 290-3, CMPT 291-3, CMPT 301-3, CMPT 302-3, CMPT 351-3, CMPT 400-3, CMPT 401-3, CMPT 410-4, CMPT 411-5, CMPT 412-5, CMPT 413-5, CMPT 451-3, CMPT 493-1 and CMPT 494-1.

These changes were approved at the Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee meeting of November 1, 1977. The rationale for individual changes is presented in the attached memorandum which is a revision of my memorandum of October 14th on CALENDAR CHANGES.

I trust this material will be appropriate for forwarding to SCUS.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: See distribution below

From: Elma Krbavac
Computing Science Program

Subject: COURSE PROPOSALS - COMPUTING SCIENCE

Date: October 18, 1977

In accordance with the regulations of the Senate Committee on Undergraduate Studies, please find attached two course proposals for your consideration.

Elma Krbavac

Enc.

DISTRIBUTION:

E.W. Roberts, Chairman, Arts Curriculum Committee
M. Wideen, Chairman, Education Curriculum Committee
D. Ryeburn, Chairman, Science Curriculum Committee

c.c. H. Evans, Registrar
J. Dickinson, Chairman, FIDS Undergraduate Curriculum Committee

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Chairman
Faculty of Interdisciplinary Studies
Undergraduate Curriculum Committee

From: David G. Kirkpatrick, Chairman
Computing Science Program
Undergraduate Curriculum Committee

Subject: CALENDAR CHANGES

Date: November 4, 1977

The attached 1977/78 Calendar Tear sheets contain recommended changes in the Computing Science portion of the Undergraduate Calendar as approved by the Computing Science Program. These are submitted for approval by the Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee and forwarding to SCUS. The following is a summary, with rationale, of the proposed changes.

NEW COURSES

CMPT 205-3 INTRODUCTION TO FORMAL TOPICS IN COMPUTING SCIENCE) Included for information
CMPT 293-3 INTRODUCTION TO MINICOMPUTERS & MICROPROCESSORS) only (courses were ap-
CMPT 315-2 ADVANCED SOFTWARE PROJECT) proved by Senate in Oct.)

CMPT 110-3 INTRODUCTION TO COMPUTATION IN THE HUMANITIES
This is intended to replace CMPT 280-3. New course proposal form is attached.

CMPT 380-3 COMPUTATIONAL LINGUISTICS
This is intended to replace the current CMPT 380-3. New course proposal form is attached.

CHANGES IN COURSE TITLE/CALENDAR DESCRIPTION/PREREQUISITES

Attached New Course Proposal Forms detail all of the following changes.

CMPT 118-3 - calendar description changed.

Rationale: The present calendar description is misleading. Students are lead to believe that some combinations of the courses CMPT 121 through 186 serve as an alternative (in fact, encouraged alternative) to CMPT 118. In practice, few of the courses CMPT 121 through CMPT 186 are offered on a regular basis. Furthermore, CMPT 118 has evolved in such a way that, while it remains fundamentally a project oriented course, a number of concepts have come to be regularly introduced in its context. The new calendar description indicates the concepts that are emphasized in CMPT 118.

.../2

CMPT 201-4, 240-3, 250-3, 283-3 - in prerequisites "at least two credits in Computing Projects in the Arts and Sciences" has been changed to CMPT 118-3.

Rationale: This is in keeping with our modification in CMPT 118-3 and our recognition that combinations of courses drawn from CMPT 121 through CMPT 186 do not serve as an alternative to CMPT 118.

CMPT 290-3 and 291-3 - changes in prerequisites (special instructions) and changes in Physics prerequisite for CMPT 291.

Rationale: Notes have been added as special instructions to ensure that students do not attempt to take both CMPT 290 and 291 for credit. (No students have been permitted to do so in the past.)

The change in CMPT 291 prerequisite from PHYS 204 to PHYS 150-3 is in response to the replacement in Physics of PHYS 204 by PHYS 150-3, the latter being designed specifically for students intending to take CMPT 291.

CMPT 301-3 - change in title and calendar description
CMPT 302-3 - " " " " " "
CMPT 351-3 - " " " " " "
CMPT 400-3 - " " calendar description and prerequisite
CMPT 401-3 - " " " "
CMPT 410-4 - " " " and prerequisites
CMPT 451-3 - " " title and prerequisites

Rationale: In all cases course title and calendar description changes are intended to reflect more accurately the content of the course as it is being offered. In no cases do these modifications represent substantial departures from the original intent of these courses.

The prerequisite changes are designed to take advantage of the recently introduced CMPT 205-3 and to ease the prerequisite structu which was making some of our highest level courses inaccessable to certain of our students.

CMPT 411-5, 412-5, 413-5 - changes in title, calendar description and prerequisites

Rationale: The title and calendar description is intended to clarify the natur of the practicum sequence. The added prerequisite specifies in writing the requirements that have been applied to date. It also makes the practicum courses sequential (already implied in the title) which makes it clear to students that they are not mutually exclusive.

CMPT 493-1 and 494-1 - changes in title and prerequisite

Rationale: The simplification of the title removes the possible suggestion that these colloquia are not restricted to issues in Computing Science. The prerequisite change makes the colloquia sequential (already implied in the title) which makes it clear to students that they are not mutually exclusive.

..../

CHANGES IN LOWER DIVISION COURSE REQUIREMENTS FOR MAJORS AND HONORS IN COMPUTING SCIENCE

Present requirements:
CMPT 103-3 - INTRODUCTION TO A HIGH LEVEL PROGRAMMING LANGUAGE I
CMPT 105-3 - FUNDAMENTAL CONCEPTS OF COMPUTING
Three credits in Computing Projects in the Arts and Sciences
CMPT 201-4 - Data and Program Organization
CMPT 260-3 - SOCIAL IMPLICATIONS OF A COMPUTERIZED SOCIETY

Proposed additional requirements:
CMPT 118-3 - COMPUTING PROJECTS IN THE ARTS AND SCIENCES
(replacing "Three credits in Computing Projects in the Arts and Sciences)
CMPT 205-3 - INTRODUCTION TO FORMAL TOPICS IN COMPUTING SCIENCE
CMPT 290-3 - INTRODUCTION TO DIGITAL SYSTEMS
or CMPT 291-3 - ANALOGUE AND DIGITAL CIRCUITS
MATH 101-3 - INTRODUCTION TO STATISTICS
MATH 151-3 - CALCULUS I
MATH 152-3 - CALCULUS II

Rationale: Our additional requirements stem from two sources:

1) It has been recognized for some time now that the mathematical background of many of our students is less than adequate both in preparation for our higher level courses and in terms of general problem solving skills. It is felt that this situation has resulted in part from our lack of insistence on mathematics prerequisites for certain courses and in part by our failure to encourage students to develop a working knowledge of general mathematical techniques.

CMPT 205-3 has been introduced to expose students to elements of discrete mathematics and their applications within Computing Science. This lays a foundation for the study of the theoretical aspects of Computing Science.

MATH 101-3, MATH 151-3, and MATH 152-3 - have been chosen as courses that provide a minimally adequate background in statistics and calculus.

2) CMPT 290-3 (or CMPT 291-3) has been proposed as a prerequisite for CMPT 400-3. Since CMPT 400 is a required upper level course for all Majors and Honors students CMPT 290-3 (or CMPT 291-3) is being listed as a lower division requirement.

In addition to the above requirements we have listed as "strongly recommended" and "recommended" respectively, the courses MATH 232-3 and PHIL 210-3. Elements of Linear Algebra, in particular, play a significant role in some of the courses. MATH 371-3 is specified as a recommended alternative to MATH 101-3 for students contemplating taking certain of our upper levels courses (CMPT 305-3, CMPT 360-3, or CMPT 404-4.)

DGK:ek
Encls.

Calendar Description Changed Only

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *118* Credit Hours: *3* Vector: ____

Title of Course: *Computing Projects in the Arts & Sciences*

Calendar Description of Course:
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.
(Seminar)

Short project courses are sometimes offered under the following numbers:
Nature of Course

Prerequisites (or special instructions):
Prerequisite for CMPT 118 through CMPT 186 inclusive: CMPT 103-3.
Some short project courses may require additional prerequisites.

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: *11/4/77* *7 Nov 77* *22/11/77*

Department Chairman — Dean — Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *201* Credit Hours: *4* Vector:

Title of Course: *Data and Program Organization*

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):
CMPT 103-3, 105-3, 118-3. (For Computing Science Majors.)

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: 11/4/77 7 NOV 77 22/11/77

Department Chairman — Dean — Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. **Calendar Information** Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *240* Credit Hours: *3* Vector: ______

Title of Course: *Computers in the Life Sciences*

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):

CMPT 103-3, CMPT 118-3, one course in Introductory Statistics, two appropriate courses in the Life Sciences.

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: 11/4/77	7 Nov 77	22/11/77
Department Chairman	Dean	Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *250* Credit Hours: *3* Vector:

Title of Course: *Computer Uses in Environmental Studies*

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):

CMPT 103-3, CMPT 118-3, at least two appropriate courses in the Environmental Sciences.

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: 7 Nov 77 22/11/11

Department Chairman — Dean — Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *283* Credit Hours: *3* Vector:

Title of Course: *Programming Languages*

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):

CMPT 103-3, 105-3, 118-3, at least one course in Grammar of a Foreign Language or Linguisti

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: 4/4/77	7 Nov 77	22/11/77
Department Chairman	Dean	Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: COMPUTING SCIENCE

Abbreviation Code: CMPT Course Number: 290 Credit Hours: 3 Vector: _____

Title of Course: INTRODUCTION TO DIGITAL SYSTEMS

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):
NOTE: This course may not be taken for further credit by those who have obtained credit or are concurrently registered in CMPT 291-3.
Prerequisite: CMPT 105-3.

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: 4/11/77 7 Nov 77 22/11/77

Department Chairman

Dean

Chairman, SCUS

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

~~Change in Prerequisite...~~

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information — Department: *COMPUTING SCIENCE*

Abbreviation Code: *CMPT* Course Number: *291* Credit Hours: *3* Vector:

Title of Course: *ANALOGUE AND DIGITAL CIRCUITS*

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):
NOTE: This course may not be taken for further credit by those who have obtained credit CMPT 290-3.
Prerequisites: PHYS 150-3, CMPT 105-3.

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: 11/4/77	7 Nov 77	22/11/77
[signature]	J. W. Bolert	[signature]
Department Chairman	Dean	Chairman, SCUS

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

Change in title and calendar description

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 301 Credit Hours: 3 Vector:

Title of Course: System Development Methodology

Calendar Description of Course: This course is designed to give the student detailed knowledge concerning the accepted methods used to develop computer application systems. Topics covered include system definition study, preliminary design, human engineering, database logical and physical design, data communications, security subsystems, coding, debugging, testing, system conversion, implementation and operation. The course consists of lectures and assignments given by the staff of the University's Computing Centre.

Nature of Course (Lecture/Tutorial)

Prerequisites (or special instructions):
Students with credit for CMPT 301 under its former title cannot take this course for further credit.

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: 17/11/77 7 Nov 77 22/11/77

Department Chairman — Dean — Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *302* Credit Hours: *3* Vector:

Title of Course: *System Development Projects*

Calendar Description of Course: *The concepts taught in CMPT 301-3 are applied in this course by assigning the student a project to develop a computer application system. The student is expected to prepare written and oral presentations covering the critical phases of project development-proposal, detailed design, status reporting, and implementation.*

(Lecture/Tutorial)

Nature of Course

Prerequisites (or special instructions):
Students with credit for CMPT 302 under its former title cannot take this course for further credit.

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: 11/4/77	7 Nov 77	22/11/77
Department Chairman	Dean	Chairman, SCUS

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

Change in title and calendar description

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

Department: *Computing Science*

1. Calendar Information

Abbreviation Code: *CMPT* Course Number: *351* Credit Hours: *3* Vector: _____

Title of Course: *Introduction to Computer Graphics*

Calendar Description of Course:

An introduction to concepts and techniques of computer graphics. Topics include graphic display hardware, input devices and functions, plotting and mapping algorithms, picture processing, graphic data structures, display algorithms, 2D and 3D graphic transformations and applications. *(Lecture/Tutorial)*

Nature of Course

Prerequisites (or special instructions):

Students with credit for CMPT 351 under its former title cannot take this course for further credit.

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: 7/4/77 7 Nov 77 22/11/77

Department Chairman — Dean — Chairman, SCUS

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

Change in Calendar

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

Department: Computing Science

1. Calendar Information

Abbreviation Code: CMPT Course Number: 400 Credit Hours: 3 Vector: _____

Title of Course: Hardware-Software Architecture I

Calendar Description of Course:

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)

Nature of Course

Prerequisites (or special instructions):

CMPT 201-4, CMPT 205-3, and CMPT 290-3 or CMPT 291-3.

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: 11/4/77 7 Nov 77 22/11/77

Department Chairman — Dean — Chairman, SCUS

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

Change in calendar description

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

Department: Computing Science

1. Calendar Information

Abbreviation Code: CMPT Course Number: 401 Credit Hours: 3 Vector:

Title of Course: Hardware-Software Architecture II

Calendar Description of Course: This is the second semester of the hardware-software architecture sequence. Topics include evolution of operating systems, multiprogramming and time-sharing, concurrent processes, process cooperation, deadlocks and scheduling algorithms. (Lecture)

Nature of Course

Prerequisites (or special instructions):

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: [illegible] 7 Nov 77 22/11/77

[signature] Department Chairman

J.W. Calvert Dean

[signature] Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *410* Credit Hours: *4* Vector: _____

Title of Course: *Artificial Intelligence*

Calendar Description of Course: *This course provides a unified discussion of the fundamental approaches to the problems in artificial intelligence. The topics considered are: representational typology and search methods; game playing; heuristic programming; pattern recognition and classification; theorem proving; question-answering systems; natural language understanding; computer vision.*

(Lecture/Tutorial)

Nature of Course

Prerequisites (or special instructions):

CMPT 201-4 and CMPT 205-3

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: 21/4/77	7 Nov 77	22/11/77
Department Chairman	Dean	Chairman, SCUS

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

Changes in Calendar Statement

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

Department: *Computing Science*

1. Calendar Information

Abbreviation Code: *CMPT* Course Number: *411* Credit Hours: *5* Vector: _____

Title of Course: *Job Practicum I*

Calendar Description of Course: *Students participate in a work/study program with business, industry, or government. Students must apply for admission to this program four months prior to actual enrolment.*

Nature of Course

Prerequisites (or special instructions):

Approval of the department. Students will normally be required to have completed at least CMPT 201-4. Students with credit for CMPT 411 under its former title cannot take this course for further credit.

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: *11/4/77* *7 Nov 77* *22/11/77*

Department Chairman — Dean — Chairman, SCUS

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

changes in title, calendar description and prerequisites.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *412* Credit Hours: *5* Vector: _____

Title of Course: *Job Practicum II*

Calendar Description of Course: *Students participate in a work/study program with business, industry, or government. Students must apply for admission to this program four months prior to actual enrolment.*

Nature of Course

Prerequisites (or special instructions):

CMPT 411-5 and approval of the department. Students with credit for CMPT 412 under its former title cannot take this course for further credit.

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: 11/4/77 7 NOV 77 22/11/77

Department Chairman — Dean — Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *413* Credit Hours: *5* Vector: _____

Title of Course: *Job Practicum III*

Calendar Description of Course: *Students participate in a work/study program with business, industry, or government. Students must apply for admission to this program four months prior to actual enrolment.*

Nature of Course

Prerequisites (or special instructions):

CMPT 412-5 and approval of the department. Students with credit for CMPT 413 under its former title cannot take this course for further credit.

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: 1/9/77 7 Nov 77 22/11/77

Department Chairman — Dean — Chairman, SCUS

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

Change in Title and Prerequisite Only

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *COMPUTING SCIENCE*

Abbreviation Code: *CMPT* Course Number: *451* Credit Hours: *3* Vector: _____

Title of Course: *INTERACTIVE GRAPHICS AND ANIMATION SYSTEMS*

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):

CMPT 205-3, CMPT 351-3. Students with credit for CMPT 451 under its former title cannot take this course for further credit.

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: 11/4/77	7 Nov 77	22/11/77
Department Chairman	Dean	Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: *Computing Science*

Abbreviation Code: *CMPT* Course Number: *493* Credit Hours: *1* Vector:

Title of Course: *Colloquium I*

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):
Students with credit for CMPT 493 under its former title cannot take this course for further credit.

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: [illegible] 7 Nov 77 22/11/77

[signature] Department Chairman — J.W. Bolvet Dean — [signature] Chairman, SCUS

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

Change in title and prerequisite

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE PROPOSAL FORM

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 494 Credit Hours: 1 Vector:

Title of Course: Colloquium II

Calendar Description of Course:

Nature of Course

Prerequisites (or special instructions):

CMPT 105-3, CMPT 493-1, and at least 60 semester hours credit. Students with credit for CMPT 494 under its former title cannot take this course for further credit.

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: 4/4/77	7 Nov 77	22/11/77
Department Chairman	Dean	Chairman, SCUS

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