S.87-31

# SIMON FRASER UNIVERSITY

## MEMORANDUM

**TO:** Senate

**FROM:** J.W.G. Ivany, Chair, SCAP

**SUBJECT:** Faculty of Applied Sciences
School of Computing Science
Reference: SCUS 87-9
SCAP 87-5

**DATE:** Nov.19, 1987

---

Action undertaken by the Senate Committee on Academic Planning/Senate Committee on Undergraduate Studies gives rise to the following motion:

MOTION: "That Senate approve and recommend approval to the Board of Governors, as set forth in S.87-31

New courses:

| | |
|---|---|
| CMPT 111-1 | Introduction to a Second Programming Language - COBOL |
| CMPT 112-1 | Introduction to a Second Programming Language - C |
| CMPT 113-1 | Introduction to a Second Programming Language - PL/1 |
| CMPT 114-1 | Introduction to a Second Programming Language - FORTRAN |
| CMPT 115-1 | Introduction to a Second Programming Language - PASCAL |

FOR INFORMATION

Acting under delegated authority, SCUS approved minor revisions to existing courses and a proposal to replace "Faculty of Arts" electives by "Liberal Arts" electives.

# SIMON FRASER UNIVERSITY A.S.U. 87-2.

**MEMORANDUM**

To: Faculty of Applied Science
Undergraduate Curriculum Committee

From: James J. Weinkam
Director, Undergraduate Program
School of Computing Science

Subject:

Date: May 5, 1987

Please place the following items which have been approved by the School of Computing Science Undergraduate Curriculum Committee on the agenda for the meeting of May 5, 1987.

1. New courses CMPT 111, 112, 113, 114, 115

   1 credit courses in various programming langues.

   Rationale: At present students may take CMPT 104-1 and study any of these languages. CMPT 104 is also used as an "upgrade" course for students who wish to declare a major in Computing Science but have taken CMPT 103 instead of the required CMPT 101.

   Under the proposed changes CMPT 104 will be used only for the "upgrade" function and the new courses will be taken by students who simply wish to learn another language. Students will be limited to taking ~~most of~~ these courses for credit. An additional advantage is that the language studied will be indicated on the student's transcript.

2. CMPT 484 Prerequisite Change

   Rationale: Since CMPT 484 concentrates on those aspects of compiler construction other than parsing and lexical analysis, and since several parser operators are available, a course in symbolic computing is an adequate substitute for CMPT 483 as a prerequisite.

3. CMPT 291 Credit and Vector Change

   Rationale: It has been found that more lab time is necessary to cover the material and permit a coherent set of topics to be covered.

   CMPT 291 may no longer be taken concurrently with CMPT 290 because it has been found that material needed from 290 is covered too late in the semester to be of use in 291.

4. CMPT 370 Prerequisite Change

   Rationale: Prior to the introduction of CMPT 275, introductory material was required to be presented in CMPT 370 before the major themes of the course, as described in the calendar, could be presented.

   CMPT 275 now provides the development necessary for the instructor to proceed immediately into the substantive material of the course, since there will no longer be a mixture of students with and without previous exposure to the formal aspects of software engineering.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: COMPUTING SCIENCE

Abbreviation Code: CMPT Course Number: 111 Credit Hours: 1 Vector: (0-0-6)

Title of Course: INTRODUCTION TO A SECOND PROGRAMMING LANGUAGE - COBOL

Calendar Description of Course:

This is a self-study course for students who wish to learn COBOL. A self-study guide is provided and the student will have regular meetings with the instructor.

Nature of Course Self-study

Prerequisites (or special instructions): CMPT 101

Students may not receive credit for more than one of CMPT 104, 111, 112, 113, 114 or 115. This course may not be taken for credit if the student has studied COBOL in a previous course.

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

To provide students with an opportunity to learn a second language of their choice in a guided-self-study format.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library NIL

Audio Visual

Space

Equipment

5. Approval

Date: 87/05/05 19/5/87

Department Chairman Dean Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 112 Credit Hours: 1 Vector: (0-0-6)

Title of Course: Introduction to a second programming language - C.

Calendar Description of Course:
This is a self-study course for students who wish to learn C. A self-study guide is provided and the student will have regular meetings with the instructor.

Nature of Course Self-study

Prerequisites (or special instructions): CMPT 101
**Students may not receive credit for more than one of CMPT 104, 111, 112, 113, 114 or 115.**
**This course may not be taken for credit if the student has studied C in a previous semester.**

What course (courses), if any, is being dropped from the calendar if this course is approved: None

2. Scheduling

How frequently will the course be offered? Every semester

Semester in which the course will first be offered? Fall 1987

Which of your present faculty would be available to make the proposed offering possible? P.M. Brearley, S. Caplin, R. Hadley, M. Drew, A.H. Dixon.

3. Objectives of the Course

To provide students with an opportunity to learn a second language of their choice in a guided self-study format.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library NIL

Audio Visual

Space

Equipment

5. Approval

Date: 87/05/05 19/5/87

Department Chairman Dean Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 113 Credit Hours: 1 Vector: (0-0-6)

Title of Course: Introduction to a second programming language - PL/1

Calendar Description of Course:

This is a self-study course for students who wish to learn PL/1. A self-study guide is provided and the student will have regular meetings with the instructor.

Nature of Course Self-study

Prerequisites (or special instructions): CMPT 101

**Students may not receive credit for more than one of CMPT 104, 111, 112, 113, 114 or 115. This course may not be taken for credit if the student has studied PL/1 in a previous course.**

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

None

2. Scheduling

How frequently will the course be offered? Every semester

Semester in which the course will first be offered? Fall 1987

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

P.M. Brearley, S. Caplin, R. Hadley, M. Drew, A.H. Dixon

3. Objectives of the Course

To provide students with an opportunity to learn a second language of their choice in a guided self-study format.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library

Audio Visual NIL

Space

Equipment

5. Approval

Date: 87/05/05 19/5/87

Department Chairman

Dean

Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 114 Credit Hours: 1 Vector: (0-0-6)

Title of Course: Introduction to a second programming language - FORTRAN

Calendar Description of Course:

This is a self-study course for students who wish to learn FORTRAN. A self-study guide is provided and the student will have regular meetings with the instructor.

Nature of Course Self-study

Prerequisites (or special instructions): CMPT 101

**Students may not receive credit for more than one of CMPT 104, 111, 112, 113, 114 or 115. his course may not be taken for credit if the student has studied FORTRAN in a previour**

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

None

2. Scheduling

How frequently will the course be offered? Every semester

Semester in which the course will first be offered? Fall 1987

Which of your present faculty would be available to make the proposed offering possible? P.M. Brearley, S. Caplin, R. Hadley, M. Drew, A.H. Dixon

3. Objectives of the Course

To provide students with an opportunity to learn a second language of their choice in a guided self-study format.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library NIL

Audio Visual

Space

Equipment

5. Approval

Date: 87/05/05 19/5/87

Department Chairman Dean Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 115 Credit Hours: 1 Vector: (0-0-6)

Title of Course: Introduction to a second programming language - PASCAL

Calendar Description of Course:

This is a self-study course for students who wish to learn PASCAL. A self-study guide is provided, and the student will have regular meetings with the instructor.

Nature of Course Self-study

Prerequisites (or special instructions): CMPT 101

**Students may not receive credit for more than one of CMPT 104, 111, 112, 113, 114 or 115. This course may not be taken for credit if the student has studied PASCAL in a previourse**

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

None

2. Scheduling

How frequently will the course be offered? Every semester

Semester in which the course will first be offered? Fall 1987

Which of your present faculty would be available to make the proposed offering possible? P.M. Brearley, S. Caplin, R. Hadley, M. Drew, A.H. Dixon

3. Objectives of the Course

To provide students with an opportunity to learn a second language of their choice in a guided self-study format.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library NIL

Audio Visual

Space

Equipment

5. Approval

Date: 87/05/05 19/5/87

Department Chairman

Dean

Chairman, SCUS

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

# SIMON FRASER UNIVERSITY A.S.U. 87-2.

**MEMORANDUM** **FOR INFORMATION**

To: Faculty of Applied Science
Undergraduate Curriculum Committee

From: James J. Weinkam
Director, Undergraduate Program
School of Computing Science

Subject:

Date: May 5, 1987

Please place the following items which have been approved by the School of Computing Science Undergraduate Curriculum Committee on the agenda for the meeting of May 5, 1987.

1. New courses CMPT 111, 112, 113, 114, 115

   1 credit courses in various programming langues.

   Rationale: At present students may take CMPT 104-1 and study any of these languages. CMPT 104 is also used as an "upgrade" course for students who wish to declare a major in Computing Science but have taken CMPT 103 instead of the required CMPT 101.

   Under the proposed changes CMPT 104 will be used only for the "upgrade" function and the new courses will be taken by students who simply wish to learn another language. Students will be limited to taking most of these courses for credit. An additional advantage is that the language studied will be indicated on the student's transcript.

2. CMPT 484 Prerequisite Change

   Rationale: Since CMPT 484 concentrates on those aspects of compiler construction other than parsing and lexical analysis, and since several parser operators are available, a course in symbolic computing is an adequate substitute for CMPT 483 as a prerequisite.

3. CMPT 291 Credit and Vector Change

   Rationale: It has been found that more lab time is necessary to cover the material and permit a coherent set of topics to be covered.

   CMPT 291 may no longer be taken concurrently with CMPT 290 because it has been found that material needed from 290 is covered too late in the semester to be of use in 291.

4. CMPT 370 Prerequisite Change

   Rationale: Prior to the introduction of CMPT 275, introductory material was required to be presented in CMPT 370 before the major themes of the course, as described in the calendar, could be presented.

   CMPT 275 now provides the development necessary for the instructor to proceed immediately into the substantive material of the course, since there will no longer be a mixture of students with and without previous exposure to the formal aspects of software engineering.

CREDIT AND VECTOR CHANGE
SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM **FOR INFORMATION**

Department: COMPUTING SCIENCE

1. Calendar Information

Abbreviation Code: CMPT Course Number: 291 Credit Hours: 2 Vector: 2-0-2

Title of Course: INTRODUCTION TO DIGITAL CIRCUIT DESIGN

Calendar Description of Course:

This course augments CMPT 290, providing additional material emphasizing the physical principles underlying digital circuits and their influence on the organization and performance limits of digital systems.

Nature of Course

Prerequisites (or special instructions): CMPT 290

PHYS 120, PHYS 121

What course (courses), if any, is being dropped from the calendar if this course is approved: None, as this is only an increase in the number of credits for an existing course.

2. Scheduling

How frequently will the course be offered? Every fall and winter

Semester in which the course will first be offered? Fall 1987 (87-3)

Which of your present faculty would be available to make the proposed offering possible? Mark Grigoleit, Dr. Rick Hobson, Dr. Lou Hafer, Dr. Tony Dixon

3. Objectives of the Course

An introduction to the skills and techniques required to transform a logical design into a physical circuit.

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 2 or 3 additional oscilloscopes

5. Approval

Date: 87/05/05 19/5/87

Department Chairman Dean Chairman, SCUS

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

**FOR INFORMATION**

*SCHOOL OF COMPUTING SCIENCE*

*COURSE OUTLINE*

CMPT 291-2

FALL 1987

Introduction to Digital Circuit Design

This course will augment the basic concepts presented in CMPT 290 by considering the physical implementation of digital circuits, and the building blocks available to the designer. Among the topics to be covered are:

1. basic electronics
2. gate implementation
3. comparison of various digital technologies
4. overview of 7400 series logic family
5. A/D, D/A conversion
6. microprocessor interface and communication
7. practical considerations in microcomputer design

In addition, there will be 5 labs:

1. oscilloscope basics
2. basic electronics (diodes, transistors, etc)
3. DTL, TTL gate implementation
4. A/D, D/A conversion
5. serial communications

PREREQUISITES: PHYS 120,121
COREQUISITE : CMPT 290

TEXT: Mano, Morris - "Digital Design"
(same as CMPT 290)

Mark Distribution:

50% labs & assignments
50% final exam (3 hours)

PREREQUISITE CHANGE ONLY

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM **FOR INFORMATION**

1. Calendar Information

Department: COMPUTING SCIENCE

Abbreviation Code: CMPT Course Number: 370 Credit Hours: 3 Vector: 3-0-0

Title of Course: INFORMATION SYSTEM DESIGN

Calendar Description of Course:

This course focuses on the computer-related problems of information system design and procedures of design implementation. Well-established design methodologies will be discussed, and case studies will be used to illustrate various techniques of system design.

Nature of Course

Prerequisites (or special instructions):

CMPT 275

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

To provide the student with a detailed treatment of the major system development methodologies followed in the management and execution of large software projects.

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: 87/05/05 19/5/87

Department Chairman

Dean

Chairman, SCUS

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

PREREQUISITE CHANGE ONLY
SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM **FOR INFORMATION**

1. Calendar Information

Department: COMPUTING SCIENCE

Abbreviation Code: CMPT Course Number: 484 Credit Hours: 3 Vector: 3-0-0

Title of Course: COMPILER CONSTRUCTION

Calendar Description of Course:

Theoretical and practical aspects of language translation and compiler implementation, building on the material covered in CMPT 483 Parsing and Interpretation. Translation, intermediate representations, code generation, optimization, run time environments, semantic and execution error handling. Students will design and implement a working compiler for a simple language as a course project.

Nature of Course LECTURE

Prerequisites (or special instructions):

CMPT 483 or CMPT 205, 275, 383, 384 and MACM 300

What course (courses), if any, is being dropped from the calendar if this course is approved: None

2. Scheduling

How frequently will the course be offered? At least once every two years.

Semester in which the course will first be offered? 86-1

Which of your present faculty would be available to make the proposed offering possible? J.J. Weinkam, R. Cameron

3. Objectives of the Course

To introduce the basic theory of language translation and compiler design, as well as some of the practical aspects of compiler implementation. Students will develop a working compiler for a simple block-structured language as part of the course.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty NONE

Staff TEACHING ASSISTANT (1/2)

Library NONE

Audio Visual NONE

Space NONE

Equipment NONE. COMPUTING RESOURCES TYPICAL FOR PROJECT ORIENTED COMPUTING COURSES ON MTS OR OS SYSTEM.

5. Approval

Date: 87/05/05 19 May 87

Department Chairman — Dean — Chairman, SCUS

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

DESCRIPTION AND PREREQUISITE CHANGE ONLY

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM **FOR INFORMATION**

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 104 Credit Hours: 1 Vector: 1-0-6

Title of Course:

Calendar Description of Course:

This course is intended for students who may not take CMPT 101 because they already have credit for CMPT 102 or 103. The course includes a review of the concept of an algorithm and structured programming using subprograms, modules, recursion, and structured data objects.

Nature of Course Lecture/Laboratory

Prerequisites (or special instructions): CMPT 102 or 103 with a grade of B or higher. Students may not receive credit for more than one of CMPT 104, 111, 112, 113, 114 or 115. The student must select a different language from that studied previously.

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: 87/10/16 20/10/87

Department Chairman Dean Chairman, SCUS

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

FOR INFORMATION

SCUS approved 87/10/13

SIMON FRASER UNIVERSITY
MEMORANDUM

To: Ron Heath
Secretary of SCUS

From: James J. Weinkam
Director, Undergraduate Programs
School of Computing Science

Subject: CMPT 479

Date: 87/10/09

In its original form, the School of Engineering Science Undergraduate Program included the requirement that students take CMPT 493 to provide necessary background in real-time computing. Subsequently, the School of Computing Science eliminated this course in a curriculum reorganization that saw much of that material subsumed into CMPT 401. Unfortunately, CMPT 401 has prerequisites that make it difficult to fit into the program of most engineering students. Moreover, the material on real-time computing in CMPT 401 is taught at a level of detail that is insufficient to meet the needs of the engineering students.

The School of Computing Science agreed to develop a course to meet this need; and in the meantime, the requirement in the Engineering program was listed as CMPT 479-4.

Dr. Lou Hafer of Computing Science and Dr. Diane Ingraham of Engineering Science have been working on the deveolpment of such a course over the past eighteen months and it has been offered once under the number CMPT 479-3 Special Topics in Computing Systems. Unfortunately there are a number of problems that must be solved before the course is ready to be approved as a permanent calendar entry. The Schools of Computing Science and Engineering Science are establishing a liaison committee to address these problems and refine the course design.

Until this process is complete and the permanent course proposal approved, we have the problem that Computing Science has only a 3-credit number under which to offer the 4 credits of course material the engineering students require. Accordingly, this memo is a request to SCUS and Senate for approval to present one or two special offerings of CMPT 479 as a 4 credit course.

# SIMON FRASER UNIVERSITY

**MEMORANDUM** **FOR INFORMATION**

To: Faculty of Applied Sciences
Undergraduate Curriculum Committee

From: James J. Weinkam
Director, Undergraduate Program
School of Computing Science

Subject:

Date: September 21, 1987

At its meeting of September 15, 1987, the School of Computing Science Undergraduate Curriculum Committee approved the following change in the requirement for a Major in Computing Science:

Item iv: Faculty of Arts Electives, is to be replaced by

iv: Liberal Arts Electives

At least 9 semester hours of courses (at any level) from the list of courses approved for credit toward a Certificate in Liberal Arts excluding the areas 1. Verbal Skills, 10. Natural Science, and 12. Quantitative Skills. This list is published annually. Copies may be obtained from the Computing Science General Office, the Office of the Dean of Arts, or Academic Advice. Please note that a course taken to satisfy the Social Aspects of Computing Requirement may not simultaneously be used to satisfy the Liberal Arts requirements.