

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Senate

From: Allan MacKinnon, Chair
Senate Committee on Undergraduate Studies

Subject: Curriculum Revisions
Faculty of Applied Sciences
(SCUS Reference 03-1)

Date: January 16, 2003



For Information

Acting under delegated authority, at the January 14, 2003 meeting, SCUS approved the following curriculum revisions in the Faculty of Applied Sciences:

- 1) a) Applied Sciences One Program – Reorganization of 1st year coursework (attached)
- b) School of Computing Science
 - i) Restructuring of Computing Science Lower Division (attached)
 - ii) Change of course description for CMPT 275 and CMPT 475
 - iii) Change in Upper Division Requirements for a Minor
 - iv) Typographic Correction under heading Management and Systems Science Program
- c) School of Communication
 - i) Deletion of CMNS 205-3, CMNS 224-3
 - ii) Change of title and description for CMNS 226
 - iii) Change of description and prerequisite for CMNS 323, 326
 - iv) Change of title, description and prerequisite for CMNS 331
 - v) Change of course number and prerequisite for CMNS 345, 422
 - vi) Change of course description for CMNS 372
 - vii) Change of title and prerequisite for CMNS 426
 - viii) Change of prerequisite for CMNS 304, 320, 354, 446, 447, 473
 - ix) Change of credit hours for CMNS 362

Any Senator wishing to consult the full report of curriculum revisions should contact Bobbie Grant, Senate Assistant at 291-3168 or email bgrant@sfu.ca

Applied Sciences One

R. D. Cameron, Associate Dean of Applied Sciences

Revision A - December 20, 2002

A General Introduction to Applied Sciences

Significant numbers of SFU applicants appear to be interested in general admission to Applied Sciences without necessarily committing themselves to any particular major program. In Fall 2002, for example, 45 new SFU students were drawn from the pool of applicants to the General Studies program in Applied Sciences. Only 2 of these applicants were admitted to Applied Sciences, while 22 were admitted to Arts and 21 to Science. Admission GPAs for FAS were in the mid 90% range.

Rather than turning high-GPA general studies applicants away, it may make sense to accept them into a program of first year studies that offers coursework in each of the Schools. Provided that the admission GPA is at least as high as that of other Applied Sciences programs, the applicants so selected are likely to represent a good source of potential recruits for any of our programs.

The following calendar revision to the *General Studies Program* under *Faculty of Applied Sciences* describes the proposed program.

Current Wording	Proposed Wording
	<p>Applied Sciences One</p> <p>Applied Sciences One is a challenging program of first year study for those who are interested in the applied sciences. It includes courses relevant to the study of communication, computing science, engineering science and kinesiology.</p> <p>Applied Sciences One consists of two semesters of coursework based on the following models. Students may vary these models and make substitutions in consultation with the program advisor.</p> <p>Recommended First Semester Coursework</p> <p>CMNS 110-3 Introduction to Communication Studies CMPT 101-4 Introduction to Computer Programming ENSC 150-3 Introduction to Computer Design KIN 142-3 Introduction to Kinesiology MATH 151-3 Calculus I</p>

This is a nonspecialist bachelor's degree program that offers students a broad education with an applied orientation. This program may be satisfied either through the general applied sciences option or through the double minor option.

Recommended Second Semester Coursework

CMNS 130-3 Explorations in Mass Communication
or REM 100-3 Global Change
ENGL 199-3 University Writing
MACM 101-3 Discrete Mathematics I
MATH 152-3 Calculus II
and one of
BISC 101-4 General Biology
CHEM 121-4 General Chemistry and Laboratory I
PHYS 120-3 Modern Physics and Mechanics

Upon completion of Applied Science One, it is expected that most students will choose to apply to one of the major programs offered by Schools within the Faculty of Applied Sciences. Students may also wish to pursue a major-minor combination involving two Schools.

Alternatively, students may continue on with the general studies program leading to the Bachelor of General Studies (Applied Sciences). Course planning for second and subsequent years should be carried out in consultation with the program advisor.

General Studies Degree Program

This is a nonspecialist bachelor's degree program that offers students a broad education with an applied orientation. This program may be satisfied either through the general applied sciences option or through the double minor option.

John Mackinnon
Jan 14/03

Computing Science Lower Division Restructuring: 2003/04

Rob Cameron, Qianping Gu, and Joseph Peters, School of Computing Science

Revision E - January 14, 2003

As approved at the Senate Committee on Undergraduate Studies meeting of January 14, 2003.

1. Introduction

This document presents a comprehensive and cohesive restructuring of computing science admission, internal transfer and lower division requirements. The principal goals of the restructuring are to define a recommended two-year course schedule in the form of a "soft" cohort program, to introduce a new concept of guaranteed placement for students pursuing admission to computing science and to improve the lower division breadth and writing requirements.

The restructuring is proposed in accord with the curriculum principles and directions outlines in the report of the Ad Hoc Committee to Review and Develop the Undergraduate Curricula as approved recently by Senate. Although full implementation of the report is an area for future work, the improvements to the writing and breadth requirements are in-line with the spirit of recommendations 1 and 3 of the report, while the notion of a soft cohort program with guaranteed placement provisions is in accord with the goal of improving course availability, accessibility and timely completion underlying recommendation 6.

2. Summary of Changes

The principal changes to lower division requirements are summarized as follows.

- The writing requirement is modified to remove PHIL 001 from the list of allowable courses, to be replaced by PHIL 100 or PHIL 120.
- The external breadth requirements are updated to bring them in line with the internal transfer provisions.
- CHEM 122 and EASC 101 are added to the list of allowable physical science courses.
- A recommended course schedule is defined.
- The concept of guaranteed placement is introduced.

3. Changes to Internal Transfer Provisions

Current	Proposed
<p>Internal Transfer</p> <p>SFU students applying for admission to the School of Computing Science are selected on the basis of an admission GPA calculated over seven courses chosen to satisfy the following breadth constraints.</p> <ul style="list-style-type: none"> • one writing course: PHIL 001 or any 100 level ENGL course. • two mathematics courses chosen from: MACM 101, 201, MATH 151, 152 and 232. • two computing courses chosen from: CMPT 101, 150/ENSC 150, 201, 250 and 275. • one physical sciences course: BISC 101, 102, CHEM 120, 121, KIN 142, PHYS 101, 102, 120 or 121. • one social sciences course: ARCH 105, CMNS 110, 130, CNS 160, CRIM 101, ECON 103/105, HIST 106, POL 100, PSYC 100, SA 101, 150 or WS 101. <p>All seven courses used for this calculation must have been taken at Simon Fraser University. At least five of the seven courses must have been taken in the one year period preceding the admission application. No course may be included in the average if it is considered a duplicate of any previous course taken at Simon Fraser University or elsewhere. Students are encouraged to take additional courses. The admission grade point average is calculated over the best seven courses that satisfy the constraints.</p>	<p>Internal Transfer</p> <p>SFU students applying for admission to the School of Computing Science are selected on the basis of an admission GPA calculated over seven courses chosen to satisfy the following breadth constraints.</p> <ul style="list-style-type: none"> • one writing course: PHIL 100, 120 or any 100 level ENGL course. • two mathematics courses chosen from: MACM 101, 201, MATH 151, 152 and 232. • two computing courses chosen from: CMPT 101, 150/ENSC 150, 201, 250 and 275. • one physical sciences course: BISC 101, 102, CHEM 120, 121, 122, KIN 142, PHYS 101, 102, 120 or 121, EASC 101. • one social sciences course: ARCH 105, CMNS 110, 130, CNS 160, CRIM 101, ECON 103/105, HIST 106, POL 100, PSYC 100, REM 100, SA 101, 150 or WS 101. <p>All seven courses used for this calculation must have been taken at Simon Fraser University and taken in the four most recent registered semesters preceding the admission application. No course may be included in the average if it is considered a duplicate of any previous course taken at Simon Fraser University or elsewhere. Students are encouraged to take additional courses. The admission grade point average is calculated over the best seven courses that satisfy the constraints.</p>

Rationale

This incorporates the changed writing requirement into the internal transfer provisions, adds two additional science courses to the physical sciences list, and REM 100 to the social sciences list. In addition, the troublesome requirement that 5 of 7 courses be completed in a calendar year is replaced by a simple requirement that all 7 courses be completed in 4 semesters of registration.

4. Revised Lower Division Requirements

The calendar description of CMPT lower division requirements is changed to reflect both the program changes described above and to provide a recommended course schedule.

Current	Proposed
	<p>Lower Division Requirements</p> <p>Students who plan to undertake a major, or honors in computing science must obtain credit for the courses listed below. The courses are listed in the form of a recommended schedule that students should complete within the first two years.</p> <p>Courses and Recommended Schedule</p> <p>Semester One (Fall)</p>

Lower Division Requirements

Students who plan to undertake a major, or honors in computing science must obtain credit for the following lower division courses (or equivalents).

one of

CMPT 101-4 Introduction to Computer Programming
CMPT 104-2 Computer Programming

plus all of

CMPT 150-3 Introduction to Computer Design
CMPT 201-4 Data and Program Abstraction
CMPT 250-3 Introduction to Computer Architecture
CMPT 275-4 Software Engineering I
MACM 101-3 Discrete Mathematics I
MACM 201-3 Discrete Mathematics II
MATH 151-3 Calculus I
MATH 152-3 Calculus II

MATH 232-3 Elementary Linear Algebra

PHIL 001-3 Critical Thinking

and one of

BUEC 232-3 Elementary Economic and Business Statistics I

STAT 270-3 Introduction to Probability and Statistics I

plus completion of at least two courses satisfying the School of Computing Science external breadth requirement 43-45 credit hours.

Notes

Approval of calculus courses in place of MATH 151 or 152 will be based on corresponding approval within the Department of Mathematics and Statistics.

Any 100 level English course may alternatively be used to satisfy the requirement for PHIL 001. A grade of C- or better is required in PHIL 001 or its alternative.

It is recommended that students with normal entry complete the above courses within the first four semesters.

CMPT 101-4 Introduction to Computer Programming
(or CMPT 104-2 Computer Programming)

MACM 101-3 Discrete Mathematics I

MATH 151-3 Calculus I

[one writing/breadth course]

Semester Two (Spring)

CMPT 150-3 Introduction to Computer Design

MATH 152-3 Calculus II

[two writing/breadth courses]

Semester Three (Fall)

CMPT 201-4 Data and Program Abstraction

CMPT 250-3 Introduction to Computer Architecture

MACM 201-3 Discrete Mathematics II

[one writing/breadth course]

Semester Four (Spring)

CMPT 275-4 Software Engineering I

MATH 232-3 Elementary Linear Algebra

STAT 270-3 Introduction to Probability and Statistics I

(or BUEC 232-3 with permission of an advisor)

[one writing/breadth course]

Courses marked [writing/breadth] above must be chosen to satisfy the following requirements.

Writing Requirement

Students must complete PHIL 100-3 Knowledge and Reality, or PHIL 120-3 Introduction to Moral Philosophy or any 100 level ENGL course.

External Breadth Requirement

Students must complete at least one course from each of the following science and social science lists.

Physical sciences: BISC 101, 102, CHEM 120, 121, 122, KIN 142, PHYS 101, 102, 120, 121, EASC 101.

Social sciences: ARCH 105, CMNS 110, 130, CNS 160, CRIM 101, ECON 103, 105, HIST 106, POL 100, PSYC 100, REM 100, SA 101, 150, WS 101.

Students must also choose two additional courses from the list of external breadth courses published annually by the School. Alternatively, the completion of a minor in a humanities program will complete the external breadth requirement.

Rationale

This provides a recommended course sequence that creates a soft cohort system. Although students may vary course schedules at their own discretion, the School will be able to provide better assurances of space availability in accord with the schedule. The separate breadth requirements of the internal transfer structure and the preexisting external breadth requirement have been unified and incorporated within the lower division requirements. The writing requirement has been strengthened and the note implying that a C- in the writing course is acceptable has been dropped.

5. Guaranteed Placement Program

The following new calendar section describing guaranteed placement provisions is introduced and inserted immediately before the calendar section entitled "Continuation Requirements".

Guaranteed Placement Program

This program is designed to assure students of timely access to the courses needed to enter the Computing Science Major or Honours programs under the internal transfer model.

BC12 applicants may be offered guaranteed placement in Computing Science courses in conjunction with general admission to the Faculty of Applied Sciences. The BC12 admission requirements for Computing Science must be satisfied: see Admission and Readmission on page XX.

Students admitted to the Guaranteed Placement Program are guaranteed registration into lower division computing courses in accord with the recommended schedule listed in the Lower Division Requirements section. Students may continue in the program for up to two years, provided that a CGPA of 2.4 or better is maintained.

Students may apply for admission to Computing Science major or honours programs at any time during the two years of the Guaranteed Placement Program. In the event that a student is unable to meet the admission requirements after completion of the program, registration for the Certificate in Computing Studies is available.

Rationale

This program is designed to aid in recruiting of students to SFU by providing them with an assurance of registration in required CMPT courses of the Computing Science lower division.

6. Deletion of External Breadth Upper Division Requirement

The following calendar text is to be deleted.

Current	Proposed
<p>External Breadth Requirement</p> <p>The school requires its honors and major students to acquire effective writing and discussion skills and to develop knowledge in diverse areas. Toward this end, students must complete at least nine credit hours (at any level) of external breadth courses in addition to PHIL 001. These courses must be from more than one department. Students are expected to take at least one external breadth course in each of their first three years. A list of courses approved for this requirement is published annually and is available from the office of the School of Computing Science.</p>	<p><i>Delete.</i></p>

Rationale

With the incorporation of breadth courses specifically within the lower division requirements, the calendar section including external breadth as an upper division requirement becomes obsolete.

7. Changes to Lower Division Requirements of CS Minor Program

Current	Proposed
<p>Lower Division Requirements</p> <p>Students who plan to undertake a minor in computing science should normally obtain credit for the following lower division courses.</p> <p>one of CMPT 101-4 Introduction to Computer Programming CMPT 104-2 Computer Programming</p> <p>one of CMPT 275-4 Software Engineering I CMPT 250-3 Introduction to Computer Architecture</p> <p>plus all of CMPT 150-3 Introduction to Computer Design CMPT 201-4 Data and Program Abstraction MACM 101-3 Discrete Mathematics I MATH 151-3 Calculus I PHIL 001-3 Critical Thinking 24 credit hours</p> <p>Notes</p> <p>Approval of a calculus course in place of MATH 151 will be based on corresponding approval within the Department of Mathematics and Statistics.</p> <p>Any 100 level English course may alternatively be used to satisfy the requirement for PHIL 001.</p> <p>A grade of C- or better is required in PHIL 001 or its alternative.</p>	<p>Lower Division Requirements</p> <p>Students who plan to undertake a minor in computing science should normally obtain credit for the following lower division courses.</p> <p>one of CMPT 101-4 Introduction to Computer Programming CMPT 104-2 Computer Programming</p> <p>one of CMPT 250-3 Introduction to Computer Architecture CMPT 275-4 Software Engineering I</p> <p>one of PHIL 100-3 Knowledge and Reality PHIL 120-3 Introduction to Moral Philosophy or any 100 level ENGL course</p> <p>plus all of CMPT 150-3 Introduction to Computer Design CMPT 201-4 Data and Program Abstraction MACM 101-3 Discrete Mathematics I MATH 151-3 Calculus I</p>

Rationale

The writing requirement for the minor program is changed for consistency with the major program.

Michael McKinnon

Jan 14/03