# SIMON FRASER UNIVERSITY

## *OFFICE OF THE VICE-PRESIDENT, ACADEMIC*

## MEMORANDUM

**To:**      Senate

**From:**    J. M. Munro, Chair
            Senate Committee on Academic Planning

**Subject:**  Faculty of Applied Sciences -
            Curriculum revisions
            (SCUS Reference:  SCUS 99-24)
            (SCAP Reference:  SCAP 99-42)

**Date:**    December 10, 1999

---

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

**Motions:**

a)      "that Senate approve and recommend to the Board of Governors as set forth in S.00 - 4 approval of the proposed Bachelor of General Studies (Applied Sciences)."

b)      "that Senate approve and recommend to the Board of Governors as set forth in S.00 - 4 approval of the proposed new entry model for Computing Science Programs."

c)      "that Senate approve and recommend to the Board of Governors as set forth in S.00 - 4 approval of the proposed change to admission requirements for Kinesiology Majors."

**For Information**

Acting under delegated authority, SCUS approved curriculum revisions in the following School:

c)      School of Kinesiology

        Change to Minor requirements

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

# Proposal: Bachelor of General Studies (Applied Sciences)

### Robert D. Cameron

### Associate Dean, Faculty of Applied Sciences

### Revision C - October 21, 1999

## I. Introduction

The Bachelor of General Studies (Applied Sciences) is a proposed generalist degree of the Faculty of Applied Sciences at Simon Fraser University. It allows students to pursue a broad applied degree with advanced studies in Communication, Computing Science, Engineering Science, Kinesiology and/or Resource and Environmental Management without specialized emphasis in any one particular area. Alternatively, students may pursue a minor program in an Applied Science together with an appropriate minor within another Faculty.

## II. Draft Calendar Description

This is a nonspecialist 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.

### General Applied Sciences Option

Students must complete 30 credit hours of upper division Science and Applied Sciences courses subject to the following constraints.

- No more than 9 credit hours of these courses may be from the Faculty of Science.
- No more than 12 credit hours of these courses may be taken from any one School in Applied Sciences.
- No more than 9 of these 30 credit hours may be satisfied by transfer credit.
- A GPA of 2.00 is required on the courses used for the General Applied Sciences Option.

For the purposes of this requirement, MACM courses are counted as courses of the School of Computing Science.

### Double Minor Option

Students may satisfy the double minor option by taking two minors (or extended minors), at least one of which must be in the Faculty of Applied Sciences. If the only minor from Applied Sciences is in Communication, the second minor must be from the Faculty of Science.

### Overall Degree Requirements

Students must complete 120 credit hours overall for the degree, including 45 upper division credit hours. A 2.00 graduation GPA is required as described under *Graduation Requirements* in the *General Information* section of this calendar.

### Admission

Students in the Faculty of Applied Sciences may apply for admission to either the General Applied Sciences Option or the Double Minor Option at any time.

Students in Faculties other than Applied Sciences may apply for admission the Double Minor option upon acceptance into two qualifying Minor programs by the schools or departments concerned.

In addition, a limited number of spaces will be made available each year for students transferring to the General Applied Sciences Option from other Faculties. Admission is competitive based on GPA in upper division Applied Sciences courses. To be considered for admission, students must have successfully completed at least 9 credits of

upper division Applied Sciences courses with a GPA of 2.25.

Enrolment in the upper division courses of a particular School may be limited to those BGS students who also meet the admission standards of that School. Admission to the BGS program may not be used to bypass the enrolment limitations of any other Applied Sciences program.

# III. Rationale

With the recent introduction at SFU of direct entry by Faculty, there is now a need to add a general studies degree in the Faculty of Applied Sciences to complement the Bachelor of General Studies in the Faculty of Arts and the General Science program in the Faculty of Science. The Bachelor of General Studies (Applied Sciences) allows students enrolled in the Faculty of Applied Sciences to have an option for generalist education in the event that they do not wish to pursue, or do not qualify for, a specialist program.

The program design meets University norms for general degree requirements and is comparable to the double minor structure of other general degrees. In addition, the 30-credit General Applied Sciences Option, without restriction to two minors, allows participation by Engineering Science and by Resource and Environmental Management, neither of which offer a traditional 15-credit minor credential. Furthermore, this approach is somewhat more flexible than the two minors approach.

SCAP 99 - 42 b

# New Entry Model for Computing Science Programs

## Robert D. Cameron

## Revision B - November 25, 1999

Admission of students into Computing Science programs presently occurs through a 5-track system with many substantive issues of equity and appropriateness. A simplified and unified approach is proposed.

# I. Introduction

## I.1 The Present System

Students are admitted to Computing Science programs in the following ways.

Grade 12 Direct Entry
> Based on an average over 4 Grade 12 subjects (Math 12, English 12, and two others from the following AP Calculus AB, Biology 12, Chemistry 12, Comparative Civilizations 12, English Literature 12, French 12, Geography 12, Geology 12, German 12, History 12, IB Russian, Japanese 12, Latin 12, Mandarin 12, Principles of Math 12, Physics 12, Punjabi 12, Spanish 12, Survey Math 12, IB Western Civilization, Writing 12).

College/Post-secondary Direct Entry
> Based on CGPA over a 10 course minimum with no subject constraints.

Internal Transfer
> Three Categories:
> 1. Internal transfer from SFU at 30-44 total credits including CMPT 101, 150 and MACM 101, based on Computing-Related GPA (CRGPA) and CGPA.
> 2. Internal transfer from SFU at 45-56 total credits including CMPT 101, 150, 201 and MACM 101, based on CRGPA and CGPA.
> 3. Internal transfer from SFU at 57 credits including all required lower division courses, based on CRGPA and CGPA.
>
> These total credit numbers may include transfer credits, but GPAs are calculated over SFU credits only, with at least 12 credits taken at SFU.

## I.2 Problems with the Present System

Grade 12 Direct Entry
> o The two elective courses used for admission average have a strong influence on the admission average yet vary widely in their relevance to computing science.
> o The grades in foreign language 12 courses may select more for exposure to that language from early childhood than for computing aptitude.
> o The set of courses specified for admission does not help direct students to identify an appropriate mix of courses relevant to preparation for computing science.
> o On the current mix of courses, a preposterously high admission average of 94% is projected to be necessary to keep direct admissions within enrolment targets.

College/Post-secondary Direct Entry.
> o There are no specific subject requirements, creating a significant imbalance in comparison to high school admission and internal transfer.
> o The admission standards provide no guidance to appropriate versus inappropriate preparation for computing science and no selection pressure in favor of students who do prepare appropriately.

Internal Transfer
> o The three-track system is complex and involves a number of arbitrary cutoffs.
> o The strong structure of the requirements in comparison to weakly structured high school and college requirements creates severe equity anomalies.
> o Very good high school students who don't quite meet the direct entry GPA will typically require at least three semesters to amass the 30 credits necessary for "early" internal transfer. On the other hand, college students who do not qualify for direct entry may be evaluated for internal transfer on as little as a single semester (12 credits).
> o Students pursuing the "normal" entry based on 57 credit hours may find it difficult to choose an alternative academic path if they fail to meet CMPT admission standard.
> o The requirements provide too many opportunities for students to prolong the effort to reach the appropriate admission GPA. These opportunities include taking as many courses as necessary to raise CGPA, taking as many CMPT courses are as available to raise CRGPA and duplicating up to five courses to raise both.
> o Raising GPA by course duplication can be dramatically more effective than by taking new courses, creating equity anomalies.

# II. Proposed New Model

A unified approach to Computing Science admissions is proposed based on an average over a small set of courses (5 to 7) that satisfy particular breadth constraints. High School admissions are based on a 5-course model in line with recent recommendations of the Director of Admissions. A comparable 5-course model could be used for college direct entry and internal transfer, but a 7-course model has a number of advantages.

The breadth models are described by proposed new calendar text as outlined in the following subsections.

## II.1 Admission Requirements Calendar Section

A new *Admission Requirements* calendar section replaces the *Enrolment Limitations* section of the Computing Science calendar entry. This section refers to the *Admission and Readmission* section, described subsequently.

| Current | Proposed |
|---|---|
| **Enrolment Limitations**<br><br>Registration in the upper division courses for major, minor, honors and related joint programs is limited. Space in upper division computing science courses is primarily reserved for students who have been formally accepted into such a program; only such students will be generally able to obtain the upper division courses necessary to complete the program.<br><br>Normally, students apply for acceptance upon completion of 57 credit hours including the lower division requirements for the program. Early acceptance is available for Simon Fraser University students and transfer students with high CGPAs and computer related GPAs (CRGPA). Direct acceptance is also possible for secondary schools students with strong university admission GPAs.<br><br>Approval into a computing science program is based both on overall academic performance as measured by the CGPA and on specific academic performance in computing related material as measured by the CRGPA. The CRGPA for a given program is the GPA calculated on all courses used for the lower division requirements for that program and any other Simon Fraser University CMPT courses taken.<br><br>For early acceptance into a program, students are required to fulfil the following requirements depending on the number of credit hours completed at Simon Fraser University (or equivalent):<br><br>  • 30-44 credit hours completed: students are required to have completed CMPT 101, 150 (or 105) and MACM 101 (or equivalent courses taken elsewhere)<br>  • 45 or more credit hours completed: students must have completed CMPT 201, in addition to the courses listed for 30 credit hours<br><br>A student can be formally approved into any of the programs involving computing science if their CGPA and CRGPA are both greater than or equal to the | **Admission Requirements**<br><br>Entry into computing science programs is possible via<br><br>  • direct admission from high school,<br>  • direct transfer from a recognized post-secondary institution, or<br>  • internal transfer from within Simon Fraser University.<br><br>Admission is competitive. A separate admission average for each of the three entry routes is established each semester, depending on the number of spaces available and subject to the approval of the Dean of Applied Sciences. Admission averages are calculated over a set of five to seven courses satisfying particular breadth constraints. For the provisions governing direct entry from high school or direct transfer from another post-secondary institution, see the appropriate Computing Science entry in the *Admissions and Readmissions* section of this calendar.<br><br>**Internal Transfer**<br><br>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.<br><br>  • One writing course: PHIL 001-3 or any 100-level ENGL course.<br>  • Two mathematics courses chosen from: MACM 101-3, MACM 201-3, MATH 151-3, MATH 152-3, and MATH 232-3.<br>  • Two computing courses chosen from: CMPT 101-4, CMPT 150-3, CMPT 201-4, CMPT 250-3, and CMPT 275-4.<br>  • One physical sciences course: BISC 101-4, BISC 102-4, CHEM 120-3, CHEM 121-4, KIN 142-3, PHYS 101-3, PHYS 102-3, PHYS 120-3, or PHYS 121-3.<br>  • One social sciences course: ARCH 105-3, CMNS 110-3, CMNS 130-3, CNS 160-3, CRIM 101-3, ECON 100-3, HIST 106-3, POL 100-3, PSYC 100-3, SA 101-4, SA 150-4, or WS 101-3. |

computing science acceptance GPA. The acceptance GPA is higher for early approval and decreases as students near completion of lower division requirements. The actual values may vary from semester to semester depending on the number of available spaces and the number of qualified applications, and are subject to the dean's approval. In previous semesters, the acceptance GPA of 57 credit hours was 2.60. Applications for formal approval must be received by the fifth day of classes for consideration in that semester.

For direct acceptance on the basis of BC secondary school achievement, students are required to fulfil the general university admission requirements and to include mathematics 12 in the courses they use for the admission GPA calculation. Students with strong admission GPAs are encouraged to apply for direct acceptance into the computing science program. To remain in a program in computing science, a student will be expected to maintain at least the minimum CGPA of 2.25.

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. However, students are free to take additional courses in each breadth area; the admission GPA is calculated over the best seven courses that satisfy the constraints.

## Continuation Requirements

Students in computing science programs are expected to maintain a CGPA of 2.4 or better. Students whose CGPA falls below 2.4 will be placed on probationary standing with the School. The number of courses available to probationary students may be limited. Each semester, probationary students are required to consult an advisor prior to course registration and must achieve either a semester GPA of at least 2.4 or an improvement in CGPA to at least 2.4. Reinstatement from probationary standing occurs when CGPA improves to 2.4 or better.

## II.2 Admission and Readmission - Secondary Schools

Within the *Admission and Readmission /Admission to Faculty /British Columbia - Secondary Schools* section of the calendar the following changes are made under the heading *Faculty of Applied Sciences - Computing Science* .

| Current | Proposed |
|---|---|
| The admission target for Fall semester 1999 is 20 new students.<br><br>Students planning to enter the BSc degree program must satisfy the same requirements as for the faculty of arts except that principles of mathematics 12 (or IB mathematics) must be included among the grade 12 courses.<br><br>Admission is highly competitive. Selection will be based on the average achieved in English 12 and principles of mathematics 12, in addition to the overall admission average. | Students applying for the Computing Science program may be admitted directly based on excellent high school grades or may be offered general University admission with the opportunity to apply for later admission based on SFU grades. Admission is highly competitive.<br><br>The direct admission target for Fall semester 2000 is 30 new students.<br><br>Direct admission requires secondary school graduation, English 12, and four or five additional courses at the Grade 12 level or beyond (that is, including AP or IB courses) satisfying the following breadth constraints.<br><br>● One writing course: English 12.<br>● One mathematics course: Principles of Mathematics 12, IB Algebra, IB Mathematics, AP Calculus AB or AP Calculus BC.<br>● Two science or applied sciences courses in different subjects, with at least one course chosen from biology, chemistry or physics. The following courses qualify: Biology 12, AP General Biology, IB Biology, Chemistry 12, AP General Chemistry, IB Chemistry, Physics 12, AP Physics B, IB Physics, Geology 12, AP Computer Science A, AP Computer Science AB, IB Computer Science, AP Environmental Science 12.<br>● One social sciences course: Comparative Civilizations 12, Geography 12, IB Geography, History 12, AP European History, IB History IB Western Civilization, AP Psychology 12, IB Psychology 12, AP Economics 12, or AP Comparative |

|  |  |
|---|---|
|  | Government and Politics 12.<br><br>Admission will be based on an average computed over the best five courses satisfying these constraints. |

## II.3 Admission and Readmission - Colleges

Within the *Admission and Readmission /Admission to Faculty /British Columbia - Community and University Colleges* section of the calendar the following changes are made under the heading *Faculty of Applied Sciences - Computing Science* .

| Current | Proposed |
|---|---|
| Students planning to enter the BSc degree program must satisfy the same requirements as for the faculty of arts and the following requirements depending on the number of credit hours completed:<br><br>• have completed at least 30 credit hours of transfer credit, including CMPT 101, 150 (or 105) and MACM 101 and<br>• have completed at least 45 credit hours of transfer credit including CMPT 101, 150 (or 105), MACM 101 and CMPT 201 or<br>• have completed at least 57 credit hours including the lower division requirements as discussed in the School of Computing Science section.<br><br>Admission is highly competitive. Acceptance as an approved computing science student is based both on overall academic performance as measured by the CGPA and on specific academic performance in computing-related courses as measured by the computing-related GPA (CRGPA). The CRGPA for a program is the GPA calculated on all courses used for the lower division requirements for that program. | Students applying for the Computing Science program may be admitted directly based on excellent college grades or may be offered general University admission with the opportunity to apply for later admission based on SFU grades. Admission is highly competitive.<br><br>For direct entry from college, students must complete at least seven courses that receive the following transfer credit assignments.<br><br>• One writing course awarded PHIL 001-3 or 3 credits in English.<br>• Mathematics course receiving credit for two of the following: MACM 101-3, MACM 201-3, MATH 151-3, MATH 152-3, and MATH 232-3.<br>• Computing courses receiving credit for two of the following: CMPT 101-4, CMPT 150-3, CMPT 201-4, CMPT 250-3, and CMPT 275-4.<br>• One physical sciences course awarded at least 3 credits in Biological Sciences, Chemistry, Kinesiology or Physics.<br>• One social sciences course awarded at least 3 credits in Archaeology, Communications, Canadian Studies, Crimionology, Economics, History, Political Science, Psychology, Sociology and Anthropology or Women's Studies.<br><br>Admission will be based on a grade point average computed over the best seven courses satisfying these constraints. All seven courses must have been taken from a single institution within a two-year period. No course may be included in the average if it is considered a duplicate of any previous course taken. |

## II.4 Additional Deletions

The following text is to be deleted from the *Lower Division Requirements* section of the *Computing Science/Major and Honors Programs* calendar entry.

The GPA calculated over all Simon Fraser University courses used to fulfil the above requirements plus any other CMPT courses taken is called the computing-related GPA for declaration of a computing science major or honors and is used in determining admission to these programs.

The following text is to be deleted from the *Lower Division Requirements* section of the *Computing Science/Minor Program* calendar entry.

The GPA calculated over all the Simon Fraser University courses used to fulfill the above requirements plus any other CMPT courses taken is called the computing related GPA for declaration of a minor in computing science and is used in determining admissions to the computing science minor program.

## II.5 Post Baccalaureate Diploma Admission

In the *Post Baccalaureate Diploma in Computing Science* subsection of the Computing Science calendar entry, the following changes to admission requirements are made.

| Current | Proposed |
|---|---|
| Admission to a post baccalaureate diploma in computing science is available for students who have already completed a bachelor's degree. For information about the program's general regulations, refer to *Continuing Studies* . | Admission to the post baccalaureate diploma in computing science is available to students who have a bachelor's degree with outstanding academic achievement. An admission grade point average will be established each semester, depending on the number of spaces available and subject to the approval of the Dean of Applied Sciences. The School reserves the right to use either the CGPA of the previous bachelor's degree or an average computed over a set of courses chosen by the School to most closely match the breadth constraints for its general admission requirements. For information about the program's general regulations, refer to *Continuing Studies* . |

# III. Benefits of The Proposed Model

The proposed model addresses many problems with the current system. It has other specific benefits as well.

Grade 12 Direct Entry
- o The set of Grade 12 courses identified may help counter the impression that computing science is a narrow program for technonerds, suggesting instead that it is a science-based program in which strong communication skills and ability to deal with social consequences are considered important.
- o With more strongly structured high school admission requirements, the program may help high school teachers and counsellors motivate students by identifying the relevance of specific high school courses to computing technology.

College Direct Entry.
- o The 7-course breadth model fits nicely within the structure of a 10-course, one-year, college program. With the flexibility of courses that may be used to satisfy each breadth area, it ought to be reasonably easy for most colleges to offer well-structured programs that both provide good preparation for Computing at SFU and additionally prepare for other programs as well.
- o The 7-course breadth model should allow designers of college computing curricula the ability to demonstrate the relevance of their programs to their students from the perspective of further study in Computing.
- o The 7-course model should encourage students to complete a well-structured program of courses in college in hopes of obtaining direct admission to Computing Science.

Internal Transfer
- o The 7-course model should allow all students who wish to pursue Computing a reasonable chance to be evaluated for admission after two semesters at SFU.
- o The flexibility in the number of courses available to satisfy individual breadth requirements allows students to recover from poor performances by good performance on alternative material in the breadth area.
- o The restriction that 5 of the breadth courses must have been completed in the one-year period prior to the admission application:
    - □ ensures that students are competing for admission on courses taken over reasonably comparable time frames,
    - □ allows students who switch to CMPT from other disciplines to use 2 older breadth courses from the years prior to their first year of CMPT study, and
    - □ discourages students from fruitlessly pursuing CMPT admission over prolonged time periods.
- o With a strong breadth orientation in the admission requirements, student efforts to raise their grades for computing admission are directed to courses that may also serve as good preparation for other programs.

Although a 5-course model could be considered for post-secondary transfer as well as high school courses, it may have the disadvantage of encouraging students to attempt what might otherwise be considered unwise: a 16-credit load in their initial semester of post-secondary work. In addition, dropping 2 courses from the 7-course model would either weaken breadth or weaken the evaluation of computing/math aptitude. If we accept the idea that the first evaluation for internal transfer should occur after two semesters, the 7-course model is quite reasonable.

The 7-course model outlined above should in fact provide good preparation for many fields of study. Thus the model can have the twin benefits of providing a reasonable basis for selecting students with good aptitude for computing as well as ensuring that unsuccessful students have not limited themselves unduly in the effort.

# IV. Phase-In Provisions

Starting September 2000, these changes will be phased-in over a two-year period. The provisions for direct entry either from high school or from college will be effective for new admissions for September 2001. For internal transfer, both the current and proposed admission systems will operate for a two-year period commencing September 2000. During this period the internal transfer quotas will be split between the two admission systems in a structure that gradually shifts the admission basis from the current to the proposed system.

# Additional 2000/2001 Calendar Changes: Kinesiology

**Tony Leyland, Undergraduate Curriculum Committee Chair, Kinesiology**

**Sophie Dunbar, Departmental Assistant, Kinesiology**

**Robert D. Cameron, Associate Dean, Faculty of Applied Sciences**

**October 28, 1999**

## 1. Change to Minor Requirements

The requirements for a KIN minor are modified to lower the minimum grade in lower division courses from C to C-, and to add a compensating overall 2.0 GPA requirement for KIN courses, as follows.

| Current | Proposed |
|---|---|
| **Application Requirements**<br><br>Application for a minor in kinesiology requires the following.<br><br>• completion of KIN 105 (or 205) and KIN 142 with a minimum grade of C<br>• submission of a program approval form to the undergraduate advisor.<br><br>**Program Requirements**<br><br>Students must complete the following for a minor in kinesiology.<br><br>• KIN 142 and 105 (or 205)<br>• 15 credit hours of upper division kinesiology<br>• 3 credit hours of other kinesiology work (upper or lower division)<br>• a minimum GPA of 2.00 calculated from those upper division kinesiology courses used to satisfy the requirements<br><br>At least seven credit hours of upper division kinesiology courses used toward the minor must have been completed at Simon Fraser University. | **Application Requirements**<br><br>Application for a minor in kinesiology requires the following.<br><br>• completion of KIN 105 (or 205) and KIN 142 with a minimum grade of C-<br>• submission of a program approval form to the undergraduate advisor.<br><br>**Program Requirements**<br><br>Students must complete the following for a minor in kinesiology.<br><br>• KIN 142 and 105 (or 205)<br>• 15 credit hours of upper division kinesiology<br>• 3 credit hours of other kinesiology work (upper or lower division)<br>• a minimum GPA of 2.00 calculated over all kinesiology courses used to satisfy the requirements<br>• a minimum GPA of 2.00 calculated from those upper division kinesiology courses used to satisfy the requirements<br><br>At least seven credit hours of upper division kinesiology courses used toward the minor must have been completed at Simon Fraser University. |

**Rationale**

This lowers the required grade in lower division courses to C-, to be consistent with the majors program. With this lowering, it becomes technically possible to have a lower division GPA of less than 2.0 in KIN courses, so wording as added to ensure that an overall 2.0 on all KIN courses is maintained. (Previously, this was automatically true because of the minimum C grade on all lower division courses, together with the minimum 2.00 over upper division courses).

## 2. Admission Requirements for KIN Majors

The admission requirements for the KIN Majors program are changed to introduce the following rules.

• If one or more of the required post-secondary courses have been duplicated (repeated), the grades from all course attempts will be used equally in calculating the Kinesiology admission GPA.
• For students transferring some of the required core courses from another post-secondary institution: At least 15 credit hours of required core courses must have been completed at SFU. An admission average will be calculated based on the required core courses taken at Simon Fraser University. (These 15 credit hours may include any of the required math and science courses, the two hundred level required kinesiology courses & Stat 301.)

These changes result in the following modified calendar description.

| Current | Proposed |
|---|---|
|  |  |

## Admission Requirements

Entry to the bachelor of science (kinesiology) program is possible via

- direct admission from high school
- transfer from a recognized post-secondary institution
- internal transfer from within Simon Fraser University

Admission requirements for high schools and transfer from post-secondary institutions are described in the *Admission and Readmission* section.

Current Simon Fraser University students will be eligible for formal acceptance into the kinesiology major program (BSc) if they

- fill out a program approval form (available at Student Academic Resources or the kinesiology general office) and submit it to the kinesiology general office by August 1 (for fall semester approval), December 1 (for spring semester approval), or April 1 (for summer semester approval)
- have completed biology 12 and mathematics 12 (or equivalents), and at least one of chemistry 12 and physics 12 (or equivalents)
- have completed the following courses:

- BICH 221-3 Cellular Biology and Biochemistry
- BISC 101-4 General Biology
- CHEM 121-4 General Chemistry and Laboratory I
- CHEM 122-2 General Chemistry II
- CHEM 281-4 Organic Chemistry I
- KIN 142-3 Introduction to Kinesiology

one of

- MATH 151-3 Calculus I
- MATH 154-3 Calculus I for the Biological Sciences

one of

- MATH 152-3 Calculus II
- MATH 155-3 Calculus II for the Biological Sciences

one of

- PHYS 101-3 General Physics I
- PHYS 120-3 Modern Physics and Mechanics

one of

## Admission Requirements

Entry to the bachelor of science (kinesiology) program is possible via

- direct admission from high school
- transfer from a recognized post-secondary institution
- internal transfer from within Simon Fraser University

Admission is competitive. A separate admission average for each of the three entry routes is established each semester, depending on the number of spaces available and subject to the approval of the Dean of Applied Sciences. Admission averages are calculated over four required courses from high school or eleven or more required post-secondary courses. If one or more courses have been duplicated (repeated), the grades from all course attempts will be used equally in calculating the Kinesiology admission GPA.

## Direct Admission - High School and Direct Transfer - Post-secondary Institution

For the provisions governing direct entry from high school or direct transfer from another post-secondary institution, see the appropriate Kinesiology entry in the *Admission and Readmission* section of this calendar.

## Internal Transfer

Simon Fraser University students applying for admission to the School of Kinesiology must complete the following courses:

- BICH 221-3 Cellular Biology and Biochemistry
- BISC 101-4 General Biology
- CHEM 121-4 General Chemistry and Laboratory I
- CHEM 122-2 General Chemistry II
- CHEM 281-4 Organic Chemistry I
- KIN 142-3 Introduction to Kinesiology

one of

- MATH 151-3 Calculus I
- MATH 154-3 Calculus I for the Biological Sciences

one of

- MATH 152-3 Calculus II
- MATH 155-3 Calculus II for the Biological Sciences

one of

- PHYS 101-3 General Physics I
- PHYS 120-3 Modern Physics and Mechanics

one of

- PHYS 102-3 General Physics II
- PHYS 121-3 Optics, Electricity and Magnetism

one of

- PHYS 130-2 General Physics Laboratory A
- PHYS 131-2 General Physics Laboratory B

Applicants are selected based on an admission GPA calculated over these eleven required courses together with any of the following four courses taken.

- PHYS 102-3 General Physics II
- PHYS 121-3 Optics, Electricity and Magnetism

one of

- PHYS 130-2 General Physics Laboratory A
- PHYS 131-2 General Physics Laboratory B

Approval into the kinesiology program is based on academic performance in the courses listed above. The minimum GPA for acceptance may vary from semester to semester depending on the number of available spaces and the number of qualified applicants. Admission is competitive.

- KIN 201-3 Basic Biomechanics
- KIN 205-3 Introduction to Human Physiology
- KIN 207-3 Information Processing in Human Motor Systems
- STAT 301-3 Statistics for the Life Sciences

Students may apply for admission as soon as the eleven required courses have been completed. Unsuccessful applicants may take any of the four additional courses to improve the admission GPA. Students who do not meet the Kinesiology admission GPA upon completion of all four additional courses will be advised regarding alternative degree options.

**For students transferring some of the core courses from another post-secondary institution:** only courses completed at SFU (and not previously taken elsewhere) are used in the Kinesiology admission GPA. Normally, at least 15 credits from core courses are required to establish a basis for the GPA calculation: exceptions must be approved by the School.

## Application Procedure

Students should complete a program approval form available at the Kinesiology general office and submit it to the kinesiology advisor by July 1 (for fall semester approval), November 1 (for spring semester approval), or March 1 (for summer semester approval).

## Rationale

The change in how the Kinesiology admission GPA is calculated with respect to duplicate courses is designed to improve the fairness of the competitive admission process. At present, the system discriminates against a student who has for example a 2.5 GPA with no duplicates vs. a student who has a 2.6 GPA with 5 duplicates. In addition, the GPA benefits of the standard course duplication rule make duplication (of even C or C+ courses) a better strategy for admission than getting good grades in new courses. The new rule will mean that the GPA benefit of getting a B in a duplicated course will have precisely the same benefit (for KIN admission purposes) of getting a B in a new course.

New language is also added to explicitly define how the admission process works for students who have transfer credit for some of the courses required for KIN admission. At least 15 credits must be taken (for the first time) at SFU in order to establish an admission GPA. An alternative would be to discount college GPA's by 0.3, but this seems arbitrary and contentious.

In addition, the possibility of using KIN 201, 205, 207 and STAT 301 grades to improve admission GPAs gives both SFU students and college transfer students some flexibility.

This will not affect good students transferring from other post-secondary institutions. Those who have completed all of the required courses and who meet our direct admission GPA will be approved outright. Those who meet the direct admission GPA but are short of some of the required courses won't have any trouble completing those courses with the required GPA. This will only affect those college students whose transfer GPA is borderline. They will have to demonstrate that they can do well in required courses at SFU and thus have a chance to succeed in the Kinesiology program under the current competitive climate.