



OFFICE OF THE
ASSOCIATE VICE PRESIDENT ACADEMIC AND ASSOCIATE PROVOST

MEMO

| | |
|-----------|--|
| ATTENTION | Senate |
| FROM | Bill Krane, Chair Senate Committee on Undergraduate Studies <i>Bill Krane</i> |
| RE | BC 12 Provincial Exam Requirements (SCUS 08-12) |
| DATE | June 16, 2008 |

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of June 10, 2008, gives rise to the following recommendation:

Motion:

“that Senate approve that BC 12 students not be required to write optional BC Provincial Grade 12 examinations for admission other than those required for graduation. If written, grades from the optional provincial examinations would be used only if they increase a student’s admission average.”

Student Services
MBC 3000
8888 University Drive
Burnaby, BC V5A1S6
Canada

ATTENTION Bill Krane, Chair,
Senate Committee on Undergraduate Studies

FROM Mehran Kiai, Director of Enrollment Services

cc: Kate Ross, Registrar & Senior Director, Enrollment Services
RE Provincial Examination Requirements

DATE May 30, 2008

Background

The Canadian admission landscape has significantly changed with the decision by the BC Ministry of Education in 2006 that provincial exams in grade 12 would be optional with the exception of English 12 (or alternative Language Arts 12).

In January 7, 2008, Senate moved into a "Committee of the Whole" to discuss a proposed change to admission requirements with regard to BC Provincial Grade 12 Examinations. Questions, comments, and suggestions were raised during the discussion of this issue leading to the request for more information and data. Please see Appendix A for a list of questions and the related responses.

Issues

The Competitive Environment of Recruitment:

SFU has experienced profound changes in the student recruitment environment in the past few years. Where there was once more than one qualified applicant for every available seat, with declining BC high school graduates and a hot employment market, we are now in direct competition for qualified students with universities and colleges within BC and across Canada. SFU's current practices and policies of admission require a careful review to respond to the intense nature of recruitment.

With the change in BC Ministry's policy, Ontario universities were the first to eliminate the requirement for optional exams to gain a competitive edge in order to retain their share of BC graduates. Recent data from the Student Transition Project of BC, shows that the number of direct entry BC high school graduates who have not enrolled in a BC post-secondary institution and instead, have enrolled in Ontario universities has grown.

Recently, University of British Columbia Senate decided that beginning in 2009, applicants will not be required to write the optional provincial examinations offered by the BC Ministry of Education (BC Provincial Examinations) other than those required for graduation. University of Victoria Senate, earlier this year, made a similar decision. Most universities in jurisdictions outside of BC have opted to eliminate the requirement of provincial exams for admission. Please see the list of selected universities in Appendix B. SFU is currently the only comprehensive-research university in British Columbia that requires provincial exams for admission.

Students faced with making a decision to choose a university over another will take into consideration the added requirement of writing additional provincial exams. Recent data from SFU Applicant Survey reveals that 45% qualified applicants who declined SFU offer of admission in 2007, chose to go to UBC instead. Next year, SFU stands to lose an even larger percentage of qualified students to UBC and other universities if it does not respond to the changes in their admission policies.

Fairness to Students:

Students expect consistency of treatment from universities. Having two comprehensive-research universities in BC not require the exams while SFU continues to require optional exams would be seen as unfair and inconsistent. This has

also been the consistent feedback received from high school counsellors who have requested that we have a common approach to provincial exams. Even with the recent improvement in the admission process using interim marks, because of the provincial exams, there is still an implied date much later in the summer for admission decisions to be finalized.

Currently, students from other jurisdictions and college students are not required to write the BC provincial examinations. By dropping this requirements for BC 12 students, we treat all applicants with the same degree of fairness and equity.

By eliminating the requirement for provincial exams, SFU becomes more competitive with BC universities and other Canadian universities and will be better positioned to attract and recruit the best and the brightest students.

Recommendation

The optional BC Provincial examination results no longer be required for admission to the University for BC 12 students. Provincial examination results will be required for any subject where the examination is a mandatory requirement for high school graduation. If optional BC Provincial examinations are written, the results from them would be used only if they increased a student's admission average.

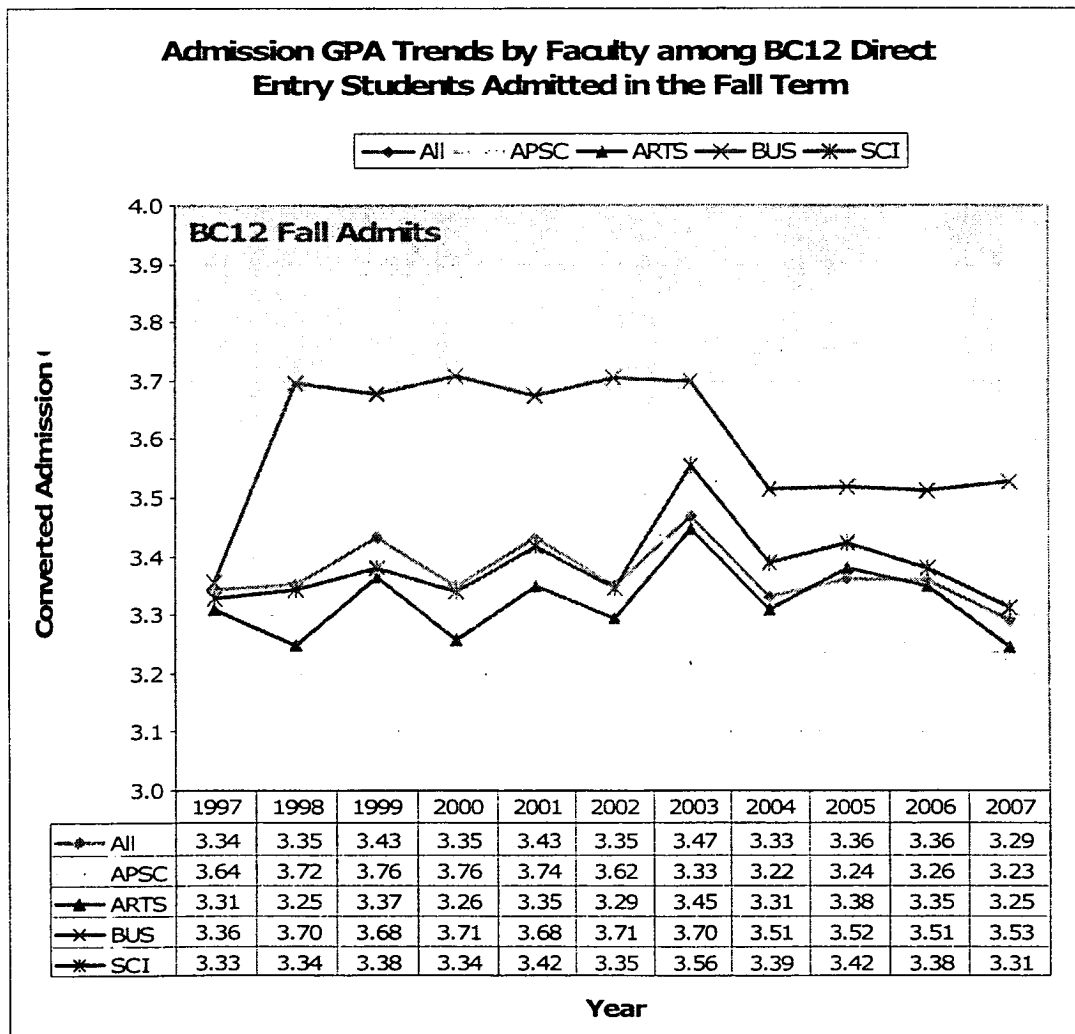
Appendix A

On January 7, 2008 the paper titled, "Change to admission requirements with regard to BC Provincial Grade 12 Examinations" (Paper S.08-10) was discussed at Senate. This appendix contains information in response to certain questions that were raised in the course of that discussion.

1. What is the general quality of incoming BC 12 Direct Entry Students at SFU?

Using the average admission GPA in the Fall semester as an indication of quality of students, Figure 1 indicates that the overall average admission GPA varies year by year and ranges from 3.33 to 3.47 between Fall 1997 and Fall 2007.

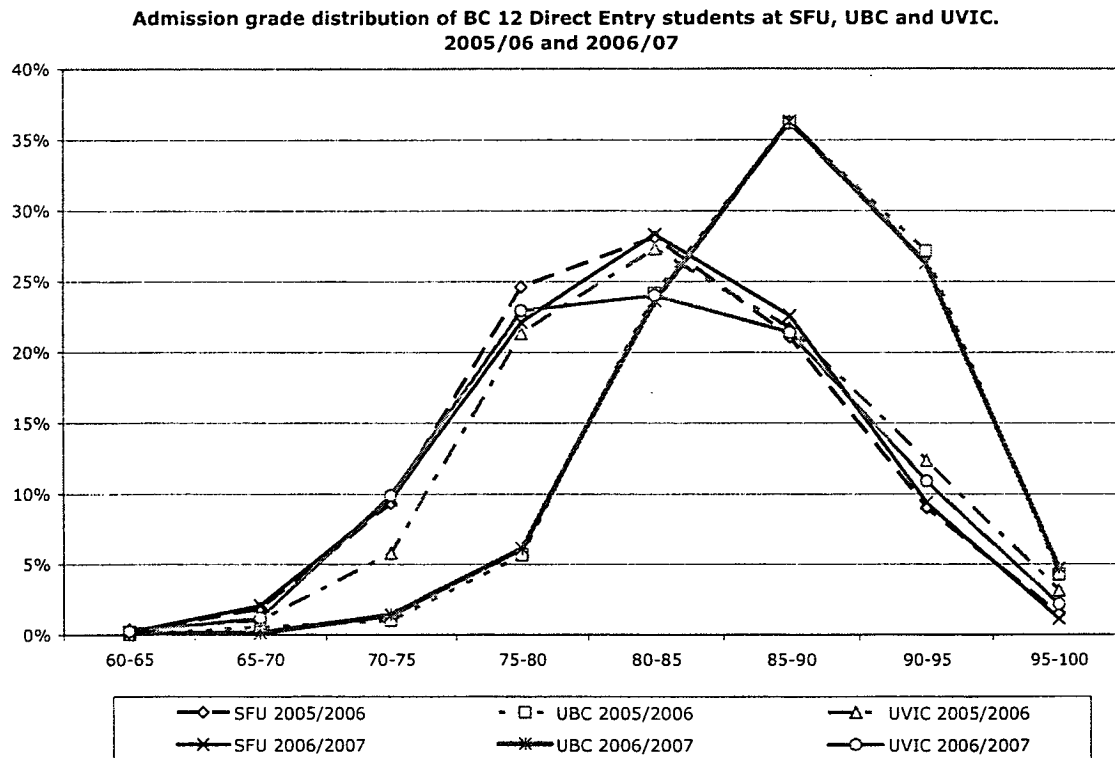
Figure 1:



2. How does the admission GPA of SFU students compare with students attending at UBC and at UVic?

Figure 2 shows the number and per cent of BC12 Direct Entry students to SFU, UBC and UVic by year of graduation and grade distribution (source: Student Transition Project¹). The grade bracket with the highest percent distribution is 80 – 85 for SFU and UVic compared to 85 – 90 for UBC.

Figure 2:



Source: STP

Of all the students admitted to SFU, UBC and UVic, the total percentage of students who had admission GPA of between 90 – 100 was 21% and 20% in 2005/06 and 2006/07 respectively.

Compared to UBC, SFU admits a significantly lower percentage of the students with grades between 90 and 100 between 2002/03 and 2006/07. Table 1 indicates the distribution of students at the three universities with admission grades that are between 90 – 100 and by year of admission.

¹ Please note that the most current STP data available is for the 2006/07 admission year.

Table 1:

| Year | SFU | | UBC | | UVIC | |
|-----------|--------|-----------------|--------|-----------------|--------|-----------------|
| | 90-100 | % of all 90-100 | 90-100 | % of all 90-100 | 90-100 | % of all 90-100 |
| 2002/2003 | 204 | 16% | 870 | 68% | 201 | 16% |
| 2003/2004 | 320 | 19% | 1071 | 64% | 288 | 17% |
| 2004/2005 | 249 | 16% | 1034 | 65% | 303 | 19% |
| 2005/2006 | 275 | 17% | 1077 | 66% | 281 | 17% |
| 2006/2007 | 283 | 17% | 1101 | 67% | 265 | 16% |

Source: STP

3. What is the relationship between high school admission grades and student performance at SFU?

Institutional Research and Planning (IRP) modeled a study after one conducted at UBC using provincial examination, course, and blended admission grades to address the following three sub-questions.

- a. To what extent are provincial examination (exam-only) and course-only grades associated with one another in BC Grade 12 subjects?**

For this question, IRP selected the seven most commonly taken subjects in Grade 12, namely:

- Biology (Biol 12);
- Chemistry (Chem 12);
- Geography (Geog 12);
- English (Eng 12);
- History (Hist 12);
- Principles of Mathematics (Math 12); and
- Physics (Phys 12).

Within each of these subjects, an analysis was conducted to determine the degree of association between the exam-only and course-only grades of a sample of students admitted directly from BC Grade 12 between Fall 2003 and Summer 2007 (i.e., new admits from each of the twelve semesters). The sample included 8,839 students.²

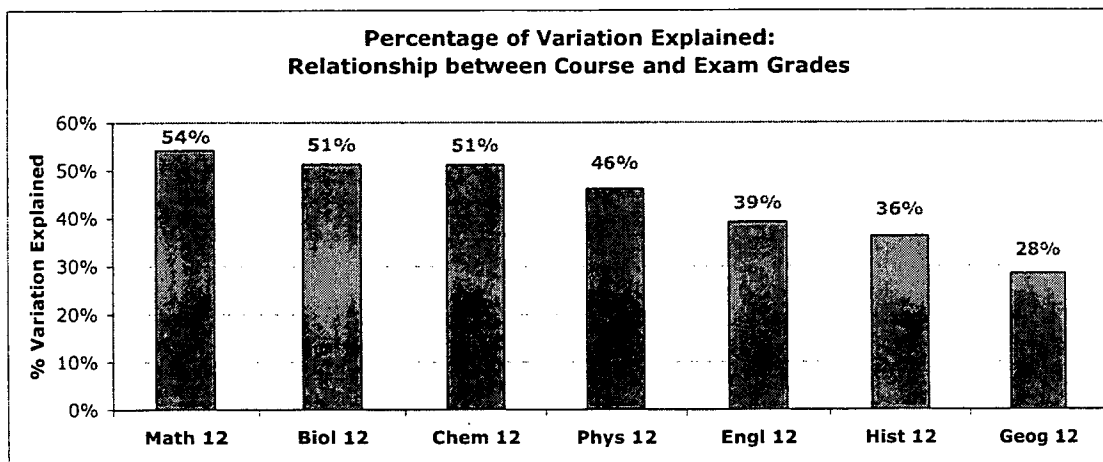
Figure 3 below shows the degree of association between exam-only and course-only grades by subject. The percentages in the table are the measures of association: each of the percentages represents the percentage of variation in one grade type that can be explained by the other grade type for each subject. For example, for Math 12, the degree of association between exam-only and course-only grades is 54%. In other words, 54% of variability in the exam-only grades can be explained by course-only grades and vice versa.

Figure 3:

² For the analysis of 30-credit CGPA below, the sample included 6,375 students who had been admitted between Fall 2003 and Summer 2005 because it is unlikely that cohorts admitted after Summer 2005 would have completed 30 credits.

**Squared Correlation between Course and Exam Grades by Subject: % Variability Explained:
BC12 Direct Entry, Admitted 1037 to 1074**

| | % Variability Explained | Sample Size |
|---------|--------------------------------|--------------------|
| Math 12 | 54.2% | 9522 |
| Biol 12 | 51.3% | 5769 |
| Chem 12 | 51.2% | 6650 |
| Phys 12 | 46.1% | 3993 |
| Engl 12 | 39.2% | 9941 |
| Hist 12 | 36.2% | 3041 |
| Geog 12 | 28.4% | 2938 |



The study found that course-only and exam-only grades are more strongly associated in Mathematics and the sciences (i.e., Biology, Chemistry and Physics) than in English and the social sciences (i.e. History and Geography). For the sciences (Biol 12, Chem 12 and Phys 12), 46% - 54% of the variability in the exam-only grades can be explained by course-only grades and vice versa. In contrast, for English and the social sciences (Hist 12 and Geog 12), less than 40% of the variability in the exam-only grades can be explained by course-only grades and vice versa.

b. How effective are the three types of grades (course-only, exam-only and blended-course-and-exam) at predicting student success?

To answer this question, firstly, each student in the sample was assigned an average course-only, exam-only and blended-course-and-exam admission grade based on four grade 12 subjects. The subjects included: English, plus three other provincially examinable courses in which the student achieved the highest blended-course-and-exam average grade. For example, if a student's highest blended-grade average was calculated based on English, Math, Geography and Biology, the exam-only and course-only averages were also calculated based on these subjects.

Second, analysis was conducted to determine the degree of association between each grade type and academic performance at SFU using regression models. Academic performance at SFU was measured using the following five performance measures:

- On Academic Probation (OAP) within 2 years of admission;
- Required to Withdraw (RTW) within 2 years of admission;

- Cumulative Grade point Average (CGPA) at the end of the first term;
- CGPA after completing 30 credits; and
- Completion or persistence as of the Summer 2007 term.

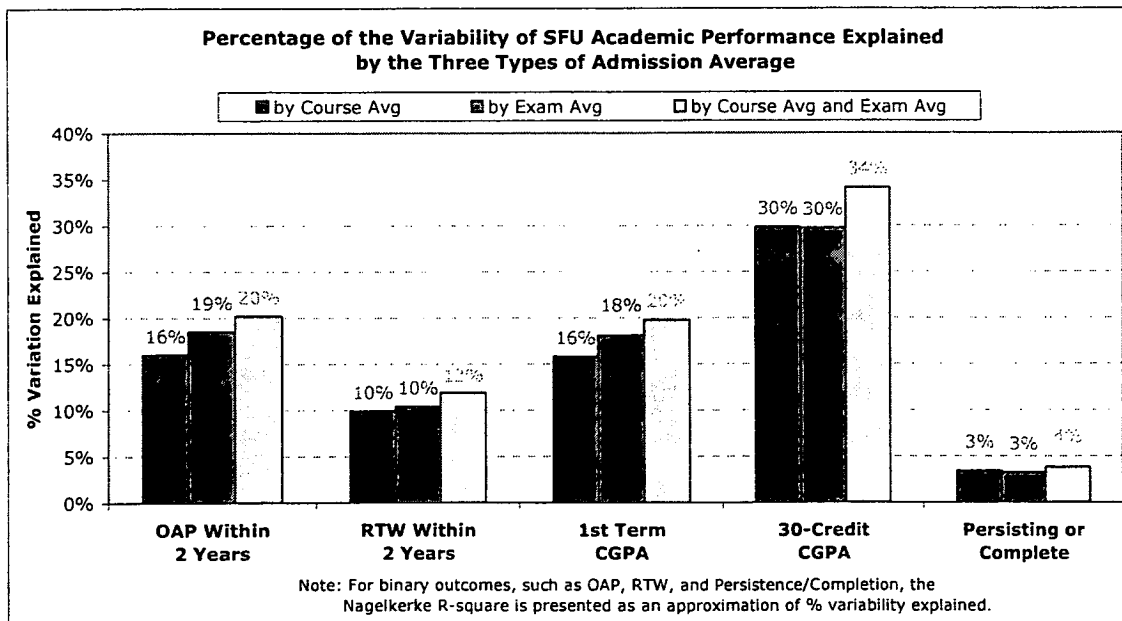
The analysis indicates that the blended-course-and-exam average grade type is a better predictor of student performance compared to course-only and exam-only average grade types. This is expected: models with blended grade types will provide better indicators because they contain more information.

Figure 4 indicates the degree of association between each of the three grade types and each of the five SFU academic performance outcomes. The higher the percentage, the higher the association and the better the average grade type is as a predictor of academic performance. When comparing course-only and exam-only averages as predictors of academic performance, the analysis suggests that the exam-only average is a slightly better indicator of OAP within two years and first term CGPA. For the remaining three performance outcomes, RTW within 2 years, 30-credit CGPA and Completion or Persisting, the course-only and exam-only averages exhibit similar association.

Figure 4:

% Variability of SFU Academic Performance Explained by Admission Avg:

| BC12 Grade Type | OAP Within 2 Years | RTW Within 2 Years | 1st Term CGPA | 30-Credit CGPA | Persisting or Complete |
|----------------------------|--------------------|--------------------|---------------|----------------|------------------------|
| by Course Avg | 16.0% | 9.9% | 15.8% | 29.8% | 3.4% |
| by Exam Avg | 18.5% | 10.4% | 18.1% | 29.7% | 3.2% |
| by Course Avg and Exam Avg | 20.2% | 11.9% | 19.8% | 34.1% | 3.8% |



IRP also plotted the relationships between the three types of average grades and performance at SFU. The plots indicate that the shapes of these relationships are the same for all three grade types, and show expected patterns. As admission average increases:

- The percentage of students who are OAP within two years decreases;
- The percentage of students who are RTW within two years decreases;
- The average first term CGPA increases;
- The average 30-credit CGPA increases; and
- The percentage of students who have graduated or are persisting at SFU increases.

c. Does the predictive effectiveness of the three types of grades vary by Faculty?

This question breaks down the analysis of SFU CGPA done in question 3b above by the following Faculties:

- Applied Sciences (APSC);
- Arts and Social Sciences (ARTS);
- Business Administration (BUS); and
- Science (SCI).

Figures 5 and 6 below indicate the percentage of variability of the first term CGPA and the 30-credit CGPA respectively that can be explained by each of the three average grade types by Faculty. Generally, the analysis indicates a considerably higher level of association between admission average and SFU CGPA at first term and after 30 credits among students in the Faculty of Science than among students from other Faculties. As well, in both first term CGPA and 30-credit CGPA, students in Arts and Social Sciences show a stronger relationship between admission average and the SFU CGPA than do students admitted to the Faculties of Applied Sciences and Business Administration. This may reflect the fact that few eligible grade 12 courses are related to business and applied sciences.

Figure 5 indicates that when comparing all grade types, in all four Faculties, the percentage of variability in first term CGPA is best explained by the blended-course-and-exam average grade type. Comparing the course-only and exam-only grade types, for students in the Faculties of Business, Science and to a lesser extent Applied Sciences, the degree of association between first term CGPA and exam-only average grades is stronger than between first term CGPA and course-only average grades. For students in the Faculty of Arts and Social Sciences, the course-only and exam-only average grades exhibit similar association.

Figure 5:

% Variability of Term 1 CGPA Explained by Admission Avg, by Faculty:

| BC12 Grade Type | APSC | ARTS | BUS | SCI |
|----------------------------|-------|-------|-------|-------|
| by Course Avg | 10.9% | 18.3% | 11.6% | 25.2% |
| by Exam Avg | 12.0% | 18.7% | 17.4% | 29.4% |
| by Course Avg and Exam Avg | 13.1% | 22.2% | 19.2% | 32.4% |

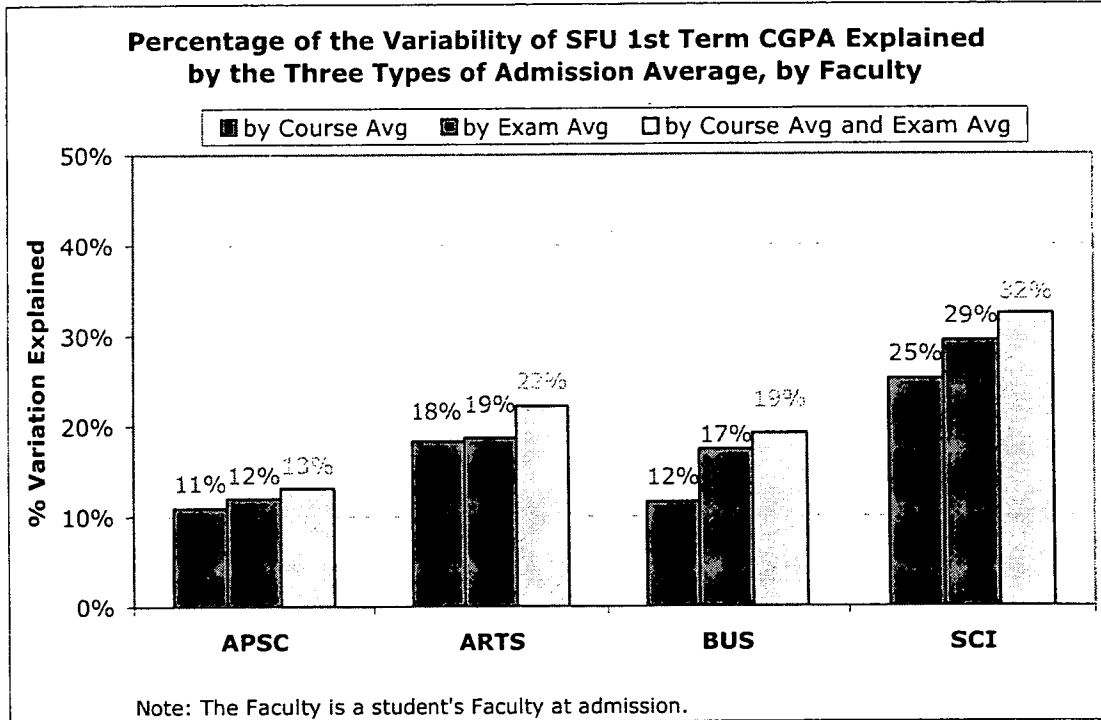
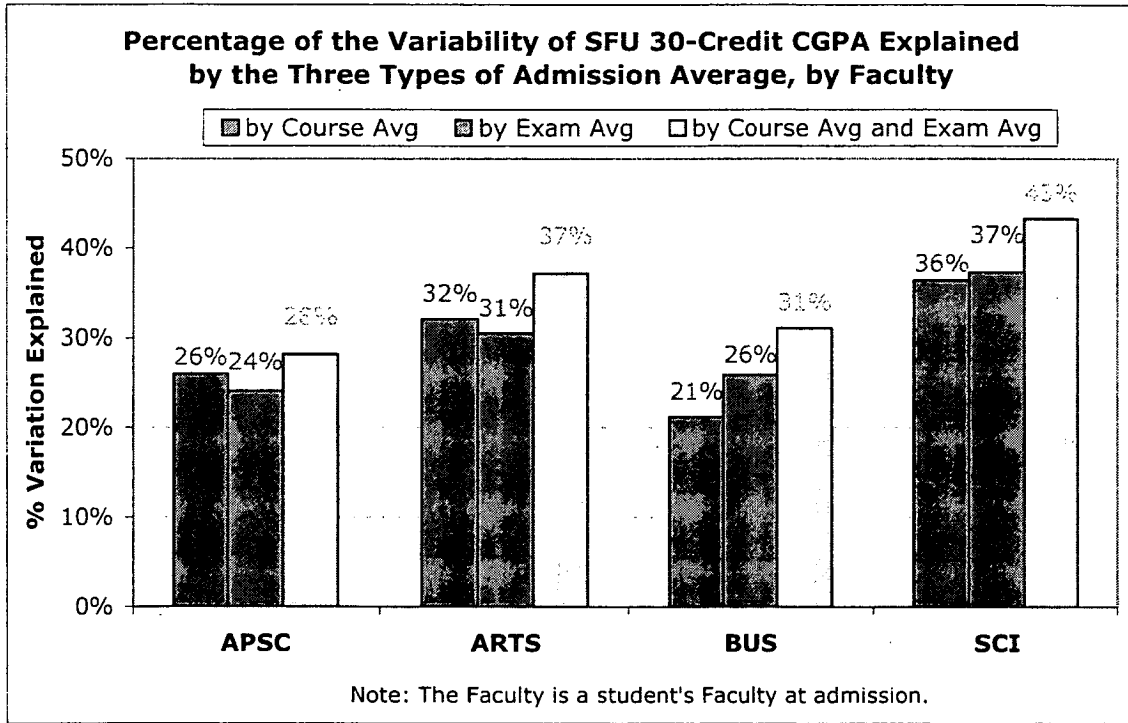


Figure 6 indicates that when comparing all grade types, in all four Faculties, the percentage of variability in the 30-credit CGPA is best explained by the blended-course-and-exam average grade type. Comparing the course-only and exam-only grade types, for students in the Faculties of Business and to lesser extent Science, the degree of association between 30-credit CGPA and exam-only average grades is stronger than between 30-credit CGPA and course-only average grades. For students in the Faculties of Applied Sciences and the Arts and Social Sciences, the course-only average grades exhibit slightly stronger association than exam-only average grades.

Figure 6:

% Variability of 30-Credit CGPA Explained by Admission Avg, by Faculty:

| BC12 Grade Type | APSC | ARTS | BUS | SCI |
|----------------------------|-------|-------|-------|-------|
| by Course Avg | 26.0% | 32.1% | 21.2% | 36.4% |
| by Exam Avg | 24.1% | 30.5% | 25.9% | 37.3% |
| by Course Avg and Exam Avg | 28.2% | 37.2% | 31.1% | 43.3% |



In summary, firstly, the study concludes that course-only and exam-only grades are more strongly associated in Mathematics and sciences than in English and the social sciences. Second, the three BC 12 grade types examined all exhibit similar relationships with subsequent student academic performance at SFU. Third, although including information from both grade types provides a better indicator of success at SFU than looking at either type of grade alone, the improvement in the percentage of the variability of SFU academic performance explained is quite small, varying from 1% to 4%. Fourth, differences in percentage of variability are larger when looking at some individual Faculties. For example, in the Faculties of Science and Business and for first term CGPA, the improvement in the percentage of variability for blended-course-and-exam over course-only average grades is over 7%.

Appendix B

Admissions Requirements Fall 2009- BC12 Provincial Exam

| Jurisdiction/University | Provincial Exams required | Future Plans/Remarks |
|---|----------------------------------|---|
| <u>BRITISH COLUMBIA</u> | | |
| University of British Columbia | NO | They do not use the BC12 provincial exam results unless they are higher than the course marks |
| University of Victoria | NO | They do not use the BC12 provincial exam results unless they are higher than the course marks |
| Thompson Rivers University | NO | |
| University of Northern British Columbia | NO | |
| <u>ALBERTA</u> | | |
| University of Alberta | YES | dependent on BC Universities |
| University of Calgary | YES | dependent on BC Universities |
| <u>ONTARIO</u> | | |
| Queens University | NO | |
| University of Toronto | NO | |
| Trent University | NO | They do not use the BC12 provincial exam results unless they are higher than the course marks |
| University of Waterloo | NO | |
| University of Western Ontario | NO | They do not use the BC12 provincial exam results unless they are higher than the course marks |
| York University | NO | |
| <u>OTHER JURISDICTIONS</u> | | |
| Dalhousie University | NO | |
| University of Guelph | NO | |
| McGill University | NO | OPTIONAL |