New Directions for the Undergraduate Curriculum: A Discussion Paper on the Implementation of University-Wide Writing, Quantitative, and Breadth Requirements

1: INTRODUCTION AND OVERVIEW

1.1 A

In this paper, we highlight “focus questions” about issues that we beliesi6

upper division; (b) 6 credits in courses that foster quantitative abilities (Q courses); (c) 18 credits in designated breadth (DB) courses, including 6 credits in the Humanities, 6 credits in the Sciences and 6 credits in the Social Sciences; and (d) 6 credits in undesignated breadth (UB) courses taken outside the student's major program. Programs may permit their students to substitute UB courses for the DB courses in their area.

Students will be encouraged to take at least one W and one Q course within their first 30 credits at SFU, and required to take them within their first 60 credits.

Recommendation 5: A Student Learning Centre

We recommend that a Task Force be established to review existing university-wide student academic support services and structures and to

the level of lectures and discussions. Many faculty members and students have spoken of the demoralizing effect of this problem. The *Draft Report of the Task Force on Academic Honesty and Integrity*[2] discusses how "the challenges of working in a second or other language, a lack of familiarity with the conventions of Western academic discourse, and the more general need to develop academic literacy contribute to instances of both intentional and unintentional plagiarism in students' writing."

At present, all students admitted directly from high school are required to have passed English 12 and at least Principles of Math 11[4]. Many programs (e.g., Science, Business Administration, Computing Science, Engineering Science and Kinesiology) require Principles of Math 12. Unfortunately, SFU instructors encounter a significant number of students who have passed high school math courses, but have not mastered their content. Approximately 20% of first year students who takt

(b) a grade of 70% or higher in a course more advanced than English 12 or equivalent (e.g., International Baccalaureate, Advanced Placement or a college English course for which English 12 is a prerequisite); or

(c) a score of Level 6 on the essay component of the Language Proficiency Index (LPI) or a similar level of achievement on an equivalent language proficiency test; or

(d) a grade of 70 - 79% in English 12 or equivalent, plus a score of Level 4 or 5 on the essay component of the LPI or a similar level of achievement on an equivalent language proficiency test; or

(e) a grade of 60 - 69% in English 12 or equivalent plus a score of Level 4 or 5 on the essay component of the LPI or a similar level of achievement on an equivalent language proficiency test. Applicants admitted in this category will be required to complete a Foundational Writing course with a grade of C- or better before being allowed to register in a W course.

We recommend that International applicants continue to be required to provide evidence of English

Recommendation 2: New Post-secondary Transfer Admissions Requirements

To improve the consistency between our admission requirements for applicants from high schools and applicants from post-secondary institutions, we recommend that students entering SFU from other colleges, universities or institutes be required to meet the same

logistics of administering such tests as, in effect, prerequisites to Q courses, was deemed not to be administratively feasible.

Recommendation 3: A Course-specific Test of Quantitative Proficiency

After extensive discussion, the Quantitative Support Group recommended that the most effective way of assessing students' quantitative abilities is to encourage instructors of introductory-level Q courses to develop tests designed to assess the preparedness of students to learn the quantitative concepts the instructors intend to teach. Separate instruments could be developed for Q courses requiring Math 11, Math 12, and formal logic. Such tests could be made available for students to take online before registering in Q courses. Students who scored below the level expected for introductory competence could be encouraged to register in a less demanding Q course, or to seek assistance from sources such as a Student Learning Centre, tutors, and/or online resources. Most upper-level Q courses would not require such tests. For example, students who passed Calculus I would be considered ready to take Calculus II.

Focus Question 2: Should we assess students' quantitative proficiency and, if so, when and how?

2.5 Navigating the New Course Requirements

Recommendation 4 below reiterates and elaborates on the University-wide requirements approved in principle by Senate in October 2002. We have specified an implementation date, recommended when W and Q courses should be taken and outlined a process for exemptions.

Recommendation 4: New WQB Graduation Requirements

We recommend that the following University-wide graduation requirements be implemented for students admitted to SFU for the Fall 2006 (2006-3) semester:

- 6 credits of courses that foster writing abilities (W courses), including at least one course from the upper division;
- 6 credits of courses that foster quantitative abilities (Q courses);
- 24 credits of breadth, including:
  - 18* credits of Designated Breadth (DB), consisting of 6 credits in the Humanities, 6 credits in the Sciences and 6 credits in the Social Sciences; and
  - 6 credits of Undesignated Breadth (i.e., courses taken outside the student's major program).

*Programs may waive the requirement that their students take the DB courses in their areas. For instance, Biological Sciences may exempt its students from completing DB Science courses. In such cases, students would be required to replace the credits with

Undesignated Breadth (UB) courses. In the example cited, Biological Sciences majors would replace the 6-credit Science DB requirement with an additional 6 credits of Undesignated Breadth, for a total of 12 credits of DB (6 in the Humanities and 6 in the

a centralized Student Learning Centre. Such a Centre might offer workshops, clinics, individual consultations and peer tutoring, and assist in the development of such new online resources as skills-assessment quizzes and self-guided tutorials.

We understand that the *Task Force on Academic Honesty and Integrity* intends to recommend that the University "establish an Academic Learning Centre for the Burnaby campus and accommodate the needs of students at Harbour Centre and the Surrey campuses," and that the *Language Instruction Committee* plans to recommend that a Student Learning Centre be the point of contact between ESL students admitted to SFU and programs designed to improve their academic English. Currently, the English Bridge Program and the English Language and Culture Program offer services of this kind.

Recommendation 6: Foundational Writing Courses

We recommend the development of a new Foundational Skills writing course for students admitted to SFU with low grades in English and/or low scores on a language proficiency test. A foundational skills course aims to prepare students to read and write at a first year university level. While it serves some remedial functions, it does not repeat instruction given at the high school for different purposes. Rather, it establishes a framework for uses of reading and writing that direct students toward such goals of university literacy as: use of Standard English, accurate representation and critical assessment of sources, and ability to construct and develop arguments.

Students needing additional assistance before attempting the Foundational Skills course would be referred to appropriate resources. Such resources might include individual assistance or online, self-directed programs teaching basic writing skills, which could be coordinated in a Student Learning Centre.

Focus Question 3: Do we need a Student Learning Centre and, if so, what form should it take?

3: ISSUES FOR FACULTY

3.1 Innovation and Collaboration

Implementing the new requirements will create opportunities for faculty to develop new courses and to redesign existing courses in ways that enhance their teaching experiences and the learning experiences of their students. Faculty who have structured their courses to include a writing-intensive component have been impressed with the contributions this change has made to the quality of the courses. Some have even said that they would never go back to their old way of teaching the courses.

increase in effort required, they learned significantly more than they did in courses without a writing-intensive component.

Some students are insecure about their quantitative abilities. We need quantitative courses that will help these students allay their insecurities. Courses that enable students to acquire skills such as those involved in evaluating the statistical information they encounter daily through the media and elsewhere, understanding basic probabilities and risks, and completing their own income tax forms are of considerable practical value. Designing such courses is a challenging but potentially rewarding experience.

Creating breadth courses that expose students to new ways of thinking about important issues and the "big ideas" that shape cultures should offer an exciting and invigorating experience for faculty. Replacing or supplementing the current array of breadth requirements with one coherent set should help organize, standardize and clarify the curriculum.

3.2 Definitions of W, Q and B Courses

To designate courses as W, Q and B, we need criteria that enable us to distinguish them from other kinds of courses. In April 2003 we sent preliminary definitions of W, Q and B courses to programs for comment. Following discussion of the comments and suggestions we received,[6] we revised the definitions, which we offer here for further comment.

3.2.1 What is a W course?

On the assumption that students entering W courses have met a basic competency standard (see section 2.2), we propose that W-courses fulfill the following conditions:

1. Students have opportunities to use writing as a way of learning the content of the course and are taught to write in the forms and for the purposes that are typical of disciplines and/or professions, in ways that are clearly distinguished from remedial and foundational skills courses.

2. Examples of writing within the disciplines are used as a means of instruction about typical structures, modes of reasoning, styles of address, and the use of technical language and of evidence.

3. Students receive appropriate feedback and response to their writing that is explicitly directed at improving the quality of their writing.

[6] A compendium of WQB comments received in response to our April questionnaire is available at **http://www.sfu.ca/ugcr/WQB_Requirements/**

4. Revision is built into the process of writing for formal assignments, usually in terms of revisions of the same paper, or alternatively, in revisions accomplished through successive similar assignments.

5. At least half the course grade is based on the quality and content of written assignments, which are evaluated according to explicit criteria. (Note that this standard does not equate to half the grade being based on the quality of writing.) Students whose grade on written work is C- or less may not claim W credit even if they have an overall passing grade in the course.

On these criteria, courses that require written assignments but do not provide explicit instruction in writing would not qualify as W courses. A list of courses developed in conjunction with the Centre for Writing Intensive Learning (CWIL) or which are otherwise deemed likely to be W courses is available in Appendix B**.**

Focus Question 4: Do these criteria adequately define a W course?

Focus Question 5: What is the appropriate amount of writing a course should require to be considered a W course?

Focus Question 6: Is half the grade allocated to written assignments too much or too little, and should final exams count as "written" work?

3.2.2 What is a Q course?

To qualify as a Quantitative (Q) course, we propose that a course must have either

and detecting fallacies of reasoning. Aspects of mathematics might include measurement, quantitative data representation, computation or spatial visualization. (These lists are not meant to be definitive.)[7]

Focus Question 7: Do these criteria adequately define a Q course?

3.2.3 What is a Designated Breadth (DB) course?

To qualify as a Designated Breadth (DB) course, we propose that a course should be intellectually accessible to "non-majors"; that is, students' ability to master the course content should not depend on bringing to it the kind of specialized knowledge typically possessed by students majoring in a discipline. Although most DB courses will be introductory in nature,

3.2.4 What is an Undesignated Breadth (UB) course?

A UB course is simply a course taken outside a student's program, as determined by the program. For example, the Department of History might decide that courses in all programs except History count as UB courses.

3.3 Designing and Developing

Support Groups: Members of the Writing, Quantitative and

seeking to have a course certified DB will be asked to recommend a classification. The Breadth Support Group may seek clarification from other programs regarding the appropriate classification/category proposed for a DB course.

The content of some courses may qualify them to be classified in more than one sub-group (e.g., both B-Sci and B-Soc). When a course qualifies for more than one DB designation, students taking the course may select one (and only one) of the designations.

Credits for individual courses should not be split. However, specialized programs such as the Semester for Dialogue and various Field Schools may qualify to have some or all of their credits distributed among classifications (e.g., 6 credits B-Hum, 6 credits B-Soc).

All courses that are identified, revised or developed as a result of this curriculum initiative will have to go through the normal channels of review and approval at Departmental, Faculty and University levels**.**

4: RESOURCE ISSUES

4.1 A Planning Challenge

Implementation of

4.3 Resource Allocation

We are eager to encourage and support the participation of faculty and programs in the identification and development of W, Q, and B courses. We are preparing guidelines and procedures to guide the allocation of resources to implement and sustain the new requirements. We expect the costs of initial development to be higher than the costs of maintaining the requirements.

Models for teaching W, Q and B courses differ in expense, but different models may be necessary to support different pedagogies. We are committed to developing fair and open procedures for the allocation of resources and to making hard decisions that ensure that resources are allocated equitably and used effectively and efficiently. Whenever possible, structures designed to develop, implement and maintain the requirements should be housed within, and be complementary to, existing University frameworks. The long-term success of the W, Q and B requirements will depend on implementing sustainable teaching and administrative models.

courses). Most high school students who apply to SFU also apply to other BC colleges or university colleges.

Students applying to UBC and UVic from outside BC are not exempted from the LPI requirement, although some students choose to write the test following their arrival in BC. Sittings of the LPI are offered in a number of locations outside of BC, and individual sittings can be arranged anywhere in the world.

Some concern has been expressed that requiring language proficiency scores will discourage otherwise qualified applicants from applying to SFU, but as mentioned, most applicants take the test anyway. Although data provided by Analytical Studies suggest that a relatively small number of high school students applying to SFU would be deemed inadmissible on the basis of their language proficiency scores, we believe the benefits of identifying such students are worth the costs. The proposed requirements are sufficiently flexible to allow for exceptions to be made when appropriate. We believe that the statement of SFU's commitment to excellence implicit in the new requirements should be beneficial to recruiting activities.

5.3 Admissions

One foreseeable impact of the changes in the admission process is that applicants would have to write the LPI far enough in advance for their scores to be included in their applications. Currently, the early admission deadline for Fall semester entry (for Canadian high school applicants) is two months before the regular application deadline. Students seeking early admission would have to write the LPI before December of their Grade 12 year. Such students could, however, be granted admission contingent on achieving acceptable language proficiency scores. Applicants seeking admission to SFU in other semesters would have more time to submit language proficiency scores, because spring and

5.4.1. Articulating Q Courses

We expect the articulation process to be relatively straightforward for Q courses because the quantitative component of courses is usually apparent in course descriptions. Q for the Humanities-type courses may require closer analysis.

5.4.2. Articulating W Courses

We expect the articulation process to be more complex for W courses. The characteristics that distinguish a W course from other courses are in large part pedagogical, and these features are often not apparent from standard course descriptions. It will take much closer inspection to determine whether transfer courses meet the W criteria. Adding to this complexity is the possibility that a transfer course may merit a W designation when taught in one way, but not when taught another way (while being fully deserving of non-W transfer status in both cases). Because most transfer courses are lower division, students will generally be unable to satisfy the upper-division W requirement before admission to SFU.

5.4.3. Articulating B Courses

It will be relatively easy for students to satisfy Undesignated Breadth (UB) requirements with transfer courses. The situation with Designated Breadth (DB) is more akin to that for W-course articulation. SFU will have to examine the sending institutions' courses carefully to determine which ones merit a DB designation.

5.5 Record Keeping

The new Student Information System (SIMS) will be able to track completed W, B, and Q requirements. Courses with W, Q, or B labels will be listed in the SFU Calendar, the electronic course catalogue, and when successfully completed, on students' records Students will be able to see which courses carry which designation for course selection purposes, and students and advisors will be able to track which requirements remain to be completed for graduation. We propose that the W, B and Q requirements be noted in cumulative fashion

6: CONCLUSION

We believe that this initiative has the potential to enhance significantly the quality of undergraduate education at SFU and to elevate its national profile. It also contains the potential to make faculty more aware of and engaged in the University curriculum as a whole and to engender a set of new and exciting courses. Although the costs of implementing the proposed recommendations may be significant in material and staff resources, we believe the benefits will vastly outweigh the costs.

Our consultation schedule is shown in Appendix G, as is a timeline for some major project goals over the next several months.

We welcome your comments and suggestions. Please send them to **kbell@sfu.ca.**

APPENDICES

Appendix A: Graphic Representation of the Proposed New English Admissions Standard

2006 English language skills competence requirements		
English requirement	**Additional requirements**	
A grade of 80% or higher in English 12 or equivalent		
A grade of 70% or higher in a course more advanced than English 12 or equivalent		
For example, IB, AP or a college English course for which English 12 is a prerequisite		
A score of Level 6 on the essay component of the LPI or equivalent test		

A grade of

Appendix B:

one of these experiments as a paper suitable for submission to a physics journal. Several of the other assignments have been changed to enhance and develop this experience.

The writing-related assignments are used to get the students ready to write their final report. For example, students are asked to analyze a classic physics paper with emphasis on how the material is presented and how

EDUC 211: Mathematical Experience 1: Numbers and beyond (pending

EASC 103: The Rise and Fall of Dinosaurs
An introductory course that deals with the class Dinosauria and, in particular, how our understanding of this extinct group of animals has been radically altered in the light of new discoveries during the last few decades. The course addresses the rise of the dinosaurs, criteria for the recognition of the different groups, fossil data regarding dinosaur metabolism, evidence of dinosaur behavior, possible evolutionary relationships with birds and so-called feathered dinosaurs, and theories of dinosaur extinction.

EVSC 200: Introduction to Environmental Science
The course focuses on how environmental scientists develop their insight and how the scientific discoveries eventually become incorporated (or not) into new regulations and attitudes.

PHYS 190: Introduction to Astronomy
Historical astronomy, telescopes, the sun and the solar system, stellar evolution, galaxies, cosmology.

Designated Breadth in the Social Sciences courses (B-Soc):

ARCH

Appendix C: Types of Writing-intensive courses

1. ***Content courses with a writing component.*** Existing courses (often relatively small in size) are modified to include writing assignments, typically with marker assistance. The balance of grades in such courses is adjusted to reflect the value attached to the written work.[11]

2. ***Writing courses linked to content courses***. One and two credit courses of this type are currently offered in the School of Engineering by lecturers with expertise in writing, rhetoric and technical communication who are assisted by TAs.[12]

3. ***Discipline-specific writing courses.*** Courses of this type are stand-alone writing courses designed to teach students to write in the genre of the disciplines that offer the courses. The writing courses taught in the Faculty of Business Administration, which are supported by a peer-mentoring program, are examples. It has been suggested that SFU develop a course for writing in the Sciences.

4. ***English writing courses***: In English 199 and English 371 students from different disciplines are taught to write in the genres of their disciplines.[13]

5. ***Content courses taught by faculty with the assistance of trained TA s.*** Relatively large content courses are restructured to meet the criteria for W-courses. TA s assume the primary responsibility for helping students develop their writing skills. TA s are trained and their workload is adjusted to reflect the additional work required to supply feedback and marking of writing.[14]

6. ***Content courses taught by faculty with the assistance of a head writing instructor and TAs***: A writing component is added to a relatively large course whose content is taught primarily by a faculty member. The writing component is overseen primarily by another instructor with expertise in teaching writing. Under the supervision of the faculty member, the writing instructor teaches tutorials and coaches and coordinates the teaching of several TAs, monitoring the writing-intensive features of the course, providing instruction on essay grading and revision, and organizing W-intensive tutorials.

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[11] See http://www.sfu.ca/cwil/facrespg/disciplines/archaeology.html for an example.
[12] http://www.ensc.sfu.ca/undergrad/courses/ENSC101.html
[13] http://www.sfu.ca/cde/cp/engl/engl199.htm
[14] (For an example see
http://www.sfu.ca/cwil/docs_content/fac_docs/w_courses/HIST_101_syllabus.)

Appendix E: Decision-making Process for the Initial Allocation of Resources to Develop W, Q and B Courses

Initially, we anticipate a large number of requests for resources. After the WQB requirements are in effect, we expect the administration of the requirements and allocation of resources needed to maintain them to be integrated into the regular operations of the University.

We propose to employ the following process for making decisions about the allocation of resources for the development, adaptation and/or teaching of W, Q and B courses:

Faculty members, in conjunction

Appendix F: Modeling Student Demand

- **Student Demand Projections**
  - Analyze the number of students we currently admit and propose to admit and determine how many of these students would qualify to take the recommended W, Q, B courses.
  - Estimate the number of students requiring W or Q foundational courses before they could proceed to fulfill the requirements.
  - Map projected student intakes and create flow models for W, Q, and B, courses that would potentially be required for academic years 2006/07 – 2011/12.
- **Student Places Required**
  - Have each of the Support Groups provide a rough estimate of the number of student places in courses that already exist that could potentially fulfill the requirements.
  - Review what courses WQB courses incoming college students could transfer .
  - Have each of the Support Groups provide a rough estimate of where gaps could occur, i.e., Q student places for Humanities students, W student places for Science students, Big Ideas or Flagshi Q q 1 0 0 -1 18 774 cm BT 11 0 .4 cm e0 00 11 043.

- March 30, 2004: Deadline to receive proposals for pilot WQB projects for Spring 2005
- May/June 2004: Recommendations to Senate for approval
- Students admitted for September 2006: Implementation Date