

**The Final Report of the
Curriculum Review and Renewal Committee
2006-2007**

Curriculum Review and Renewal Final Report

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Executive Summary

The Faculty of Arts and Science at the University of Toronto has long played an important leadership role in Canadian education. One of the means by which the Faculty maintains this stature is our tradition of periodic undergraduate curriculum renewal in which educational practices are reviewed and degree requirements revised in order to ensure achievement of our pedagogical goals. While our program and course offerings are continually evolving to reflect the most recent disciplinary and pedagogical research and practice, the last comprehensive review of our overall curricular structure and requirements was conducted in the late 1980s. Since that time, both our student and faculty populations have grown in number and become more diverse in cultural, social, and national background and in their world views. The world too has become more complex, as political, social, and economic factors increasingly cut across national boundaries, and local decisions and actions have a global reach and impact. Moreover, the pace of change within the realms of knowledge creation and the world at large has quickened due to continual technological advances and the immediacy of communications. Against this backdrop of global interconnectivity and rapid change, our curriculum once more must be renewed to ensure the continued relevance of the educational experience and outcomes for the students we are committed to educating as global citizens and as leaders.

In the fall of 2006, the Curriculum Review and Renewal Committee (CRRC) was struck with the mandate to evaluate the undergraduate curriculum in Arts and Science and to make recommendations to improve the quality and effectiveness of our offerings. The review and renewal exercise has taken place in a climate of increased recognition of the need to clarify and make transparent the goals and expected outcomes of post-secondary education, for the benefit of our students, faculty, and academic support staff. Moreover, the Province of Ontario recently announced a requirement for post-secondary institutions to articulate the educational goals associated with their degrees. We have used this opportunity to go beyond simply making our current goals explicit. We have aimed to take a leadership role by formulating learning objectives that capture the full range of abilities and skills that are essential for the 21st century graduate in the multicultural milieu of our nation. At the same time, our goal has been to ensure an academic experience that enables students to attain these objectives in a challenging but supportive environment. Because the Faculty of Arts and Science offers the broadest range of programs to the greatest diversity of students, our goals present an exciting challenge in current Canadian post-secondary education.

The review of our curriculum and its structure has affirmed that we start from a position of strength by bringing to the undergraduate mission a distinctive combination of attributes that are essential for educating students today. First, our approach to undergraduate education is founded on a deep-seated integration of the research and teaching missions. The involvement of students in the process of inquiry-based learning promotes critical thinking and problem-solving skills that are essential to lifelong learning and the effective response to change. Second, we offer a high degree of choice among very strong programs and courses, giving students an unparalleled opportunity for breadth and depth of learning that prepares them to be well-educated participants in the workplace and the community. Third, we promote and support interdisciplinarity in both teaching and research. Because innovation often thrives where meaningful connections are made between disciplines, our students are exposed to the leading edge of knowledge and discovery. Finally, we have a firm commitment to equity and diversity in a multicultural community that serves as a microcosm of global issues. This environment supports exploration of a multiplicity

of perspectives and the development of critical judgment and tolerance, essential characteristics of future leaders.

Within this context, the CRRC has identified its vision of undergraduate education, one that embodies our values and builds on our strengths to better equip our students for the 21st century:

Our aim is to provide a rich educational environment that produces global citizens whose depth of learning within an investigative framework inspires and enables them to:

- ***pursue lifelong learning within their field of study and more broadly;***
- ***draw meaningful connections across a range of knowledge areas;***
- ***relate their knowledge to complex and constantly changing situations in the workplace or the world;***
- ***interpret situations, arrive at judgments, solve problems, and make decisions in an informed and responsible manner;***
- ***participate meaningfully as leaders and community partners.***

In order to fulfill this purpose, we must impart to students a deep appreciation of the wide range and complexity of natural, social, and technological phenomena that shape all aspects of human endeavour, and develop within them the ability to participate in the activities that contribute to the creation and understanding of these phenomena.

This Executive Summary describes the primary guiding aims behind the current curriculum review and renewal process and our recommendations for achieving the above goals. The body of the report provides the detailed description of the recommendations, along with their motivation and expected impact.

One of our primary goals in the CRR process was to develop a clear statement of what an undergraduate degree in Arts and Science stands for, especially in the context that all three of our bachelor degrees are specified as “honours.” We offer an excellent educational experience with high standards of achievement, but there has been increasing recognition of the need for explicitly describing the expected outcomes of an honours degree in our Faculty. A clear statement of learning objectives will communicate these expectations to students and enable them to measure progress along various dimensions during their studies. Explicit objectives will also enable us to evaluate the effectiveness of our programs and pedagogical methods against our stated intentions. Our goal is to set the standard for the formulation of learning objectives that capture the abilities that are critical to Canadian undergraduates of the 21st century. To that end, our first set of recommendations elaborates a comprehensive set of learning objectives as follows:

- (a) Depth of knowledge in at least one field of study, to cultivate the capacities for critical understanding, intellectual rigor, and appreciation of the richness of an area of study.
- (b) Competencies critical to learning and to applying knowledge for responsible, effective, and adaptable participation in the workplace, community, and daily life, regardless of the particular area of specialization.
(The competencies include critical and creative thinking, communication, information literacy, quantitative reasoning, and ethical thinking and decision-making.)

- (c) Breadth of knowledge across fields and the capacity to understand and appreciate various perspectives and methodologies.
- (d) Integration of skills and knowledge through engagement in an inquiry-based activity that requires the creative synthesis of multiple elements of the student's undergraduate education.

The recommendations in Section 2.1.1 of the report explicitly link each of these objectives to degree requirements that ensure that the aims will be achieved by all honours students.

A second aim for the CRRC was to review the effectiveness of the structure of our programs of study (POSTs), which serve as the framework within which many of the educational goals outlined above are achieved. The basic POST structure is successful and our range of offerings is comprehensive, but we recognized the need for increased transparency in communicating the objectives of individual POSTs and of our overall program offerings, so that our degree learning objectives are clearly reflected in the individual programs and courses that students pursue. We recommend that a POST Advisory Committee be established to develop guidelines for the meaningful presentation of program and course objectives, and to periodically review the full range of the Faculty's POST offerings. We also noted the need for greater student choice and curricular flexibility. We recommend changes to POST requirements to bring about greater consistency and to improve accessibility to programs across broad areas, by increasing the range of programs without grade-point entry controls. These and related recommendations appear in Section 2.1.2 of the report.

A key focus in the CRRC discussion on learning objectives and programs of study was the identification of "core skills" —namely, those abilities that all graduates should have attained and the means by which they should be integrated into the degree requirements. These discussions led to the formulation of the competencies in the degree learning objectives in (b) above. The need for greater proficiency in communication was a primary focus of these discussions, leading to a number of recommendations regarding improved teaching of writing and other presentation skills, as well as the information literacy skills that interact with effective development and communication of ideas. Section 2.1.3 details these recommendations, as well as noting that other competencies, such as quantitative reasoning and ethical thinking, may similarly require creative pedagogical approaches in order to achieve the competency learning objective.

Expansion of the curricular and co-curricular options for students, with the goal of broadening their academic experiences, was another essential goal for the CRRC. Our proposals supporting the degree learning objectives reflect this, especially our call for a review and renewal of breadth requirements, and a requirement for an inquiry-based experience for all students. Our recommendations go further by encouraging greater diversification consistently throughout the curriculum, focusing especially on the incorporation of multiple perspectives and integration of global issues where these have not yet been achieved. We also propose that more options be provided for engagement in research across all disciplines, through offerings that accommodate a wider variety of research styles and methodologies, and alternative mechanisms for research experiences. We further recognize the importance of experiential learning more broadly. Pedagogical research shows that active learning, such as in a practicum, fieldwork experience, internship, or community involvement, can engage students more and show the relevance of their classroom learning to real-world experiences. We recommend cataloguing and publicizing

existing activity-based opportunities, both in and out of the classroom, as well as encouraging the development of novel mechanisms of delivery. These recommendations, as well as academic calendar changes to help support curricular flexibility and co-curricular expansion, are presented in Section 2.2.1.

Another key area of focus for the CRRC was the transition to university during a student's first year, which lays the foundation for the student's entire undergraduate experience in terms of both knowledge attained and attitudes developed to learning. Our aim was to determine the core educational goals for first-year students and the means to improve the first-year experience in the context of those goals. We elaborated the following goals: to stimulate students' intellectual curiosity and provide them with new capacities to learn; to provide students with a foundation of substantive knowledge; and to facilitate the development of skills expected of successful undergraduates. One means for effectively integrating first-year students into our learning community is through a small-class experience that allows them to engage with an experienced instructor, discuss and debate among peers, and develop core skills in a supportive environment. We recommend that small-class offerings be reviewed, evaluated, and expanded with the aim of ensuring that every first-year student can have such an opportunity. We also note that curricular exploration is an important aspect of the transition to university, and to this end recommend that students be given some limited option of taking courses as credit/non-credit. We further propose that a First-Year Math and Science Curriculum Committee be struck to undertake a comprehensive review and renewal of the content and delivery of introductory math and science in order to achieve coordination across first-year science courses and to stimulate student curiosity beyond the first-year science core. The recommendations regarding the first-year experience appear in Section 2.2.2.

The final overall aim guiding the CRRC was the provision for improved advising support for students in first year and beyond. The Faculty has a comprehensive advising system in place, but one in which support is provided in a distributed fashion by college registrar offices as well as departments and centres that offer undergraduate programs. It was acknowledged that these efforts could be strengthened through the following mechanisms: improved coordination among advising staff across units; better support from technological tools for degree, program, and course monitoring; and more proactive engagement with students, especially those in academic difficulty. Our proposals around advising are detailed in the recommendations in Section 2.2.3.

This report is the result of many hours of committee and subcommittee deliberations, as well as extensive consultation with and input from students, faculty, and administrative staff across the broad constituencies of Arts and Science and our primary partner divisions. We received 140 pages of commentary on an earlier draft of this report, as well as many hours of oral feedback in town halls and individual meetings with the committee co-chairs. In response, the CRRC made extensive revisions to the recommendations and to the explanatory text. Still, the work of the CRRC and the resulting recommendations in this report are but the first step of an in-depth, multi-stage process of curriculum renewal. We foresee many future areas of discussion and decision-making concerning the details—both large and small—in the implementation of these proposals. Moreover, important decisions must be made concerning the means by which we evaluate the success of curriculum reforms. In our committee deliberations, we were asked to consider ourselves relatively unfettered by details of resource implications; we were exhorted to be “visionary” while keeping our feet at least somewhat firmly on the ground. We have attempted to put forward guidelines for the future direction of the Faculty in curriculum renewal,

while acknowledging that many significant and substantial details remain to be worked out, especially those that impinge on resource trade-offs. We recommend that a Curriculum Renewal Steering Committee be struck to ensure the continuation of the consultation and constructive debate that has led to the many strong proposals herein, and that will be necessary to ensure the realization of the vision we have tried to communicate here.

Joe Desloges and Suzanne Stevenson, Co-Chairs
For the Curriculum Review and Renewal Committee

(The membership of the CRRC is given in Appendix A1.)

1 Introduction

1.1 Renewing Our Goals for the Undergraduate Curriculum

Undergraduate education is one of the key missions of the Faculty of Arts and Science. Both the Faculty and the University of Toronto have identified improving the undergraduate student experience as a primary focus of current initiatives in moving the institution forward. For the Faculty, our highest priority in this area is the academic experience that forms the core component of the overall student experience. Our undergraduate curriculum—the course offerings and the programs of study—is the foundational structure of the academic experience for over 25,000 students at the University.

Over the last dozen years, our curriculum has seen many innovations that have improved the opportunities for close student–faculty interaction and broadened the range of academic experiences. We now offer around 100 First-Year Seminars every year that provide entering students a small-class environment in which to interact with an instructor and peers in a supportive transition to the university learning community. Our research opportunities and independent experiential studies programs involve hundreds of second- and third-year undergraduates in research projects working closely with faculty and graduate students. Participation in the wide variety of international experiences we offer has doubled since the year 2000. In 2001/2002, we eliminated the three-year general bachelor degree to exclusively offer four-year honours degrees, indicating the priority of focusing on the best possible education for our students. All of this has taken place against a backdrop in which our program and course offerings have continually evolved to reflect the most recent disciplinary and pedagogical research and practice.

Although the Faculty has moved forward steadily through these initiatives to improve the academic experience, the last comprehensive review of our overall curricular structure and requirements was done in the late 1980s. Since then, our student and faculty populations have grown in number and become more culturally diverse, and the world has increased in complexity and pace of change. There has also been a growing recognition of the need for accountability, both to our students and, as a public institution, to the Province of Ontario. These circumstances have motivated a review and renewal of our overall curriculum in which we clearly and explicitly establish the aims of our undergraduate mission. These goals must be devised to ensure the relevance of the academic experience and outcomes for the citizens and leaders we educate over the next 20 years.

In the fall of 2006, the Curriculum Review and Renewal Committee (CRRC) was struck with the mandate to evaluate the current undergraduate curriculum in Arts and Science and to propose improvements to the quality and effectiveness of our offerings. We were urged to define what an honours bachelor degree in the Faculty of Arts and Science stands for, and to make recommendations in that context. Given the wide range of areas of study and the impressive array of methodologies, approaches, and perspectives taken in our Faculty, identifying a primary purpose shared by all undergraduate academic units was challenging. To formulate our view of the goal of our honours degrees, we started by identifying the particular combination of strengths and values that give our approach to undergraduate education its unique character:

Integration of the research and teaching missions. As a research- and teaching-intensive university, our classes are taught by scholars who not only are experts in their subject matter, but also make substantial and far-reaching contributions to the creation of knowledge. All of our students are therefore exposed to the research process and its influence on modern thought. Moreover, we are committed to engaging as many students as possible in the process of inquiry-based learning and knowledge creation. Such experiences provide integrative learning opportunities that encourage the critical thinking and problem-solving abilities essential to lifelong learning and the effective response to change.

Provision for a high degree of choice among very strong programs. The breadth of the Faculty, coupled with its large number of teaching and research staff, enables us to offer a wide range of programs that are grounded in a solid foundation of course offerings substantiated by high-calibre teaching and research. This abundance of high-quality programs gives students a choice in the areas of concentration that is unparalleled in Canada. Moreover, the wide spectrum of offerings provides the opportunity for our students to achieve the breadth of exposure to a range of subject matter required of well-educated participants in scholarly activity, in the workforce, and in the community.

Promotion of interdisciplinarity and of cross-disciplinary teaching and research. The Faculty recognizes the importance of cross-disciplinary connections and supports a wide range of interdisciplinary programs in partnership with the colleges. These programs provide an exceptional community and support structure for academic exploration. Because innovation often thrives at the intersection of disciplinary boundaries, students are exposed to the leading edge of knowledge discovery. Students are also encouraged to combine programs of study in areas of their choice. In devising their own interdisciplinary degrees, students learn to forge meaningful connections across areas of knowledge.

Commitment to equity and diversity in the context of a multicultural community. Our breadth and diversity of disciplines, perspectives, and methodologies reflect our location in what has been called the most multicultural city in the world. This environment is complemented by our diverse student body, together creating an intellectual community with a unique richness of learning opportunities. Cross-cultural learning occurs both in and out of the classroom, in an atmosphere of respect, responsibility, and the deep-seated Canadian value of mutual tolerance.¹ This environment encourages in our students the development of the critical judgment and tolerance that are essential components of leadership.

This combination of strengths and values positions us well for giving students a solid foundation for global citizenship in the 21st century. By global citizens, we mean those who: have a broad understanding of world issues and environments, drawing on historical, cultural, social, technological, and scientific knowledge; learn and adapt to changing local and global conditions; understand their own place, and the place of Canada, in the world; appreciate the value of diversity in a framework of mutual respect and tolerance; and act responsibly and ethically within their various communities. Our aspiration to produce graduates with these qualities has formed the basis for our vision of undergraduate education in the Faculty of Arts and Science:

¹We are firmly committed to the University's Statement on Equity, Diversity and Excellence, which can be found at <http://www.hrandequity.utoronto.ca/Assets/equity/statement.pdf>.

Our aim is to provide a rich educational environment that produces global citizens whose depth of learning within an investigative framework enables and inspires them to:

- *pursue lifelong learning within their field of study and more broadly;*
- *draw meaningful connections across a range of knowledge areas;*
- *relate their knowledge to complex and constantly changing situations in the workplace or the world;*
- *interpret situations, arrive at judgments, solve problems, and make decisions in an informed and responsible manner;*
- *participate meaningfully as leaders and community partners.*

The curriculum review and renewal process, briefly described next, was guided by this vision in developing the recommendations of this report, which formulate a precise statement of the learning objectives of our undergraduate curriculum as well as the pedagogical methods used to achieve them.

1.2 The Process of Curriculum Renewal

The Faculty has a history of periodic review and renewal of the overall curriculum, with substantial changes to the undergraduate degree arising from reviews completed in 1967, 1979, and 1989. As in earlier reviews, the current exercise was founded on core principles of transparency and openness, and a high degree of consultation. The current CRRC was established with broad representation from students, faculty, administrative staff, and alumni, and including assessors from our major partner divisions in the undergraduate mission. Each academic unit that offers an undergraduate program also identified a liaison to serve as an important communication link between the unit and the CRRC.² A curriculum renewal website was established to disseminate information and draft materials as the committee proceeded in its work, and an email address was created to encourage direct communication to the CRRC from all constituencies throughout process. Two town halls were held each term, in the fall and spring.

A draft report on the developing recommendations was released to the Arts and Science community in March 2007. In response to the draft, we received 140 pages of written commentary and numerous hours of oral input, from unit liaisons as well as individual students, faculty, and staff. To incorporate the many helpful comments and suggestions and to respond to concerns and criticisms, the CRRC met seven more times for a total of 15 hours to revise our recommendations and to clarify their motivation and goals. In sum, this final report represents the fruits of a highly consultative process which included many hours of reflection and constructive debate among the committee and the broader constituency of Arts and Science and its partners.³

² Arts and Science is comprised of departments, colleges, centres, institutes, and interdivisional consortiums (e.g., A&S and Medicine) that sponsor various academic programs. In this report, we refer to each of these program sponsors as academic units or simply units.

³ Appendix 1 provides more detail on the history of curriculum renewal in the Faculty, as well as on the current review and renewal process over the past 18 months.

The mandate of the committee was to provide guidelines for the future direction of the Faculty in the area of undergraduate curriculum. In some areas, a clear consensus emerged among the committee members. Given the complexity of the issues, there were differences of perspective and preference that arose in other areas, particularly regarding the details of how to achieve certain goals. In this context, it is important to emphasize that this report is not the culmination of the curriculum review and renewal exercise, but rather the first step of setting overall goals and proposing means to achieve them.

The achievement of our goals for curriculum renewal will require a thorough and consultative implementation process once the recommendations proposed here are approved in principle. Because these recommendations reflect a broad vision of 21st-century undergraduate education in our Faculty, they raise complexities in the practical implementation, including resource implications and their differential impact on units across the Faculty. These issues must be thoroughly considered and addressed in a staged process of integration into our curriculum, its delivery, and support structures. To ensure this, we recommend that a Curriculum Renewal Steering Committee be established to oversee the next stage of curriculum renewal in a similarly open, transparent, and consultative manner. We also reaffirm a fundamental commitment to the primacy of academic units in determining high-quality programs and course offerings. We encourage all program sponsors to reflect on these recommendations in reviewing and renewing their own curricula, to propose innovative ways to achieve the vision and goals we have outlined here, and to continue to engage in this important process through their participation in the next stage of curriculum renewal.

2 Recommendations for Curriculum Renewal

A primary aim of the CRRC was to define clearly what an honours degree from the Faculty of Arts and Science means, and to establish curricular and co-curricular goals that set the standard for honours education.⁴ Our recommendations fall into two broad categories: those concerning the fundamental structure of our honours degree, and those addressing the broader academic experience for our students. In Section 2.1, we describe our recommendations that formulate explicit honours learning objectives and proposals for meeting those objectives. In Section 2.2, we present recommendations that aim to broaden the curricular and co-curricular opportunities and support for students in the first and subsequent years of study. Throughout this section of the report, recommendations are presented with their motivation and intended consequences. These aspects of the text reflect the extensive review of the curriculum undertaken by the CRRC, the goals formulated as part of the review and discussion, and the conclusions drawn regarding areas that could be improved.

2.1 The Undergraduate Degree: Objectives, Programs, and Skills

In the introduction to this report, we presented our view of the goal of an undergraduate degree in Arts and Science at the University of Toronto. The next step is to formulate learning objectives that reflect the specific achievements expected of students in order to ensure that our degrees meet this goal. These learning objectives in turn must be linked to degree and program of study requirements that explicitly support the fulfillment of the objectives. This section presents our recommendations concerning the formulation and implementation of degree learning objectives (Section 2.1.1), improvements to the management of our programs of study (Section 2.1.2), and the support for fundamental skills that are critical to our degree objectives (Section 2.1.3).

2.1.1 Degree Learning Objectives

Degree objectives have been poorly defined in Canadian universities, typically not extending beyond generalities such as preparing students for the workforce or for further study. Yet there is increasing recognition that a clear statement of learning objectives would benefit both the students, in elaborating what to expect from their degrees and how to measure their progress, and the institution, in supporting the evaluation of the effectiveness of its programs and pedagogical methods. Our curriculum renewal process provides an excellent opportunity for the Faculty of Arts and Science to play a leadership role in Canadian education in this regard. Our goal is to set the standard for the formulation of learning objectives that capture the abilities that are critical to undergraduates of the 21st century in the multicultural milieu of Canada. Moreover, we can do so within the context of an honours degree that represents a high calibre of achievement and an exacting standard of quality.

The learning objectives we recommend below are derived from discussions among the CRRC members, input from the various constituencies across Arts and Science, and review of recent

⁴ Appendix 2 provides an overview of our current honours degree requirements and our programs of study.

pedagogical and curricular reports (the latter are referenced in Appendix A3). We also surveyed peer institutions to determine the abilities and breadth of exposure expected of their graduates (reported in Appendix A4).

We synthesized these ideas within the context of the strengths of the Faculty of Arts and Science, and our goal of producing global citizens equipped for lifelong learning and responsible action in a constantly changing world. This led to the identification of four general learning objectives given in our first recommendation.

Recommendation 1: The Faculty of Arts and Science will adopt the following learning objectives as the general goal for all of our honours bachelor degrees:

- a. Depth of knowledge that cultivates critical understanding and intellectual rigour in at least one field of study.
- b. Competencies in learning and applying knowledge that are fundamental to responsible and effective participation in the workplace, in the community, in scholarly activity, and in personal life:
 - i. Critical and Creative Thinking
 - ii. Communication
 - iii. Information Literacy
 - iv. Quantitative Reasoning
 - v. Ethical Thinking and Decision-Making
- c. Breadth of knowledge across a range of knowledge areas that reflect the richness of the arts, the complexity of global cultures, and the varied structures, processes, and concepts of the social and natural world.
- d. Integration of skills and knowledge developed in a student's course of study within an inquiry-based activity in the upper years.

The degree requirements that aim to ensure the achievement of each of the learning objectives of Recommendation 1 are detailed in Recommendations 1a through 1d below.⁵

Recommendation 1a: "Depth of knowledge in at least one field of study" will be linked to our existing program of study (POSt) requirement.

We are not recommending any change to the current requirement that students must complete at least (a) one specialist program, (b) two major programs, or (c) a major plus two minors. In order to make explicit the connections between this requirement and our learning objectives, however, we make the following sub-recommendations:

Recommendation 1a(i): The curriculum renewal implementation process should develop more detailed guidelines on what it means to achieve depth of knowledge sufficient for an honours degree.

⁵ We leave it to the implementation process to determine whether any of these objectives should be different for degree recipients that do not satisfy the cGPA for honours and receive a bachelor rather than honours bachelor degree. For example, it may be determined that such students do not need to meet the integrative, inquiry-based objective.

The implementation committee will need to refer to the OCAV guidelines as a minimum standard in developing our own Faculty guidelines. All honours graduates should have instruction at a level of depth that reflects “developed knowledge and critical understanding” (from the OCAV report in Appendix A3), among other criteria.

Recommendation 1a(ii): All units should review their major POSTs to ensure that majors are achieving a depth of instruction that is commensurate with what is expected of all honours graduates.

Majors play an important and growing role in providing students with the means to pursue interdisciplinary interests. As of November 2006, 35% of our students were enrolled in at least two majors and 19% in a major and one or two minors; less than half our students (43%) were enrolled in a specialist program. A student’s commitment to interdisciplinarity through a combination of majors and minors should not come at the cost of a lack of depth in the major discipline(s).

Currently, it is expected that specialists achieve this level of depth, since they must take at least 1 FCE (full-course equivalent) at the 400-level and more courses at the 300 level. The CRRC considered the introduction of a corresponding requirement for majors such that each major POST include at least 0.5 FCE at the 400-level. Generally, 400-level courses represent the most advanced state of understanding in the undergraduate curriculum, so such a requirement would ensure that all our honours graduates have instruction at a level that is recognized across North America as signalling depth of study. However, a number of units in the Faculty have significant depth in their 300-level courses, and the difference between 300- and 400-level in some units may be a matter of class size rather than depth of material. Input to the CRRC indicated that there is insufficient consistency across units in the relation of depth of study to a particular course level (between 300 and 400) for us to state a simple 400-level course requirement on majors, without necessitating a significant restructuring of a number of programs.

Recommendation 1b: “Competencies in learning and applying knowledge” will be linked to skills developed within courses or across a sequence of courses. Each unit will explicitly indicate which of their courses or sequences of courses, if any, satisfy each competency requirement.

The outcomes we seek in our honours graduates go beyond basic writing and numeracy to much more sophisticated reasoning skills that will support a high level of responsible functioning in the world. The competencies were chosen due to their importance for both depth and breadth of study in a field, and for the successful application of knowledge in the workplace and the community. These competencies support: the gathering, manipulation, evaluation, and creation of a range of types of information; integration of new information with one’s knowledge and beliefs; decision-making and problem-solving that draw on critical analysis and assessment of various types of information, including ethical factors; and communication of these processes and their results to a range of audiences. Appendix A5 describes each skill area in more detail.

Some CRRC members believe strongly that these competencies are best developed within an area of academic concentration so that students can experience deeply their applicability and relevance. Research indicates the importance of teaching writing as an integral part of a student’s

disciplinary studies, and many were convinced that the other competencies we have identified are also most effectively taught when integrated into the curriculum. It was noted by others that in spite of this pedagogical motivation, some competencies are not naturally incorporated into some programs of study. For this reason, we agreed that the achievement of the competencies should be a degree rather than program requirement. However, all units should be encouraged to incorporate as many of the competencies as possible into their major and specialist POSTs, subject to the constraints of the field of study. If the courses in a student's POST(s) do not satisfy all the competencies, the student must satisfy the requirement by taking courses outside his/her POST(s) that do so.

It was observed that, in general, students should be able to satisfy the competency requirements through a natural process of satisfying both their POST and breadth requirements. For example, if a particular humanities unit felt that it was not possible to incorporate the quantitative reasoning competency into one of their programs, the students pursuing that program would almost certainly achieve that competency through the courses they take in a social science or science area.

Recommendation 1b(i): The curriculum renewal implementation process should develop detailed guidelines on the level of skill/training appropriate for each competency as a degree requirement. The guidelines must also include the mechanism by which units will go about specifying that a course (or sequence of courses) satisfies a competency requirement.

The CRRC sees the appropriate level as something that would require more than just a couple of weeks of material or one assignment in a course, but not something that would require more than a half-course of study. We also envision that many programs would achieve the desired level of a competency through a sequence of courses, each of which further develops that skill, rather than segregating relevant instruction into a separate course. It is assumed that many units already have courses or sequences of courses that will satisfy particular competency requirements. Of course, this requirement is aiming at a minimum level of competency for all degree recipients, regardless of specialization; many POSTs will further develop any particular set of these skills as appropriate to the field of study.

Recommendation 1b(ii): The curriculum renewal implementation process should determine means for encouraging units to integrate the competencies into their POSTs.

As mentioned, the motivation for this is partly pedagogical, on the assumption that it is best to learn these skills in the context of one's primary focus of study. There are also practical considerations, since it would be simplest for students to keep track of their degree requirements if they satisfy at least some of the competencies by satisfying their POST(s) requirements. One way to encourage units to think about how to incorporate competencies may be to include consideration of the competencies in the program learning objectives that are part of the proposal for a new POST (see Recommendations 2 and 3).

For competencies that are not currently reflected in a unit's courses, a number of options are possible; some of these may require Faculty support. One approach is to integrate into existing courses those competencies that are naturally accommodated and can strengthen a program's curriculum. For example, writing could be incorporated into existing computer science courses in the context of assignments that require a software design component.

Another option is to develop new courses within a unit or across a set of related units to address a particular pedagogical need. For example, a group of humanities units may want to collaborate to provide a course that covers quantitative reasoning in a context that relates to work on languages and texts. Finally, a unit may decide that their students are best served by satisfying a particular competency requirement through a breadth or elective course. If a course is identified as particularly relevant for satisfying a competency requirement for students in other units, this will require coordination to prevent certain courses from becoming over-subscribed.

Clearly, as with the breadth requirements discussed next, the Faculty will need to ensure that sufficient offerings are available for students to satisfy the competency requirements. In section 2.1.3 below, we discuss specific proposals for supporting the communication and information literacy requirements; the curriculum implementation process should also consider whether we also require special measures to support the teaching of other competencies, such as quantitative reasoning or ethical thinking.

Recommendation 1c: “Breadth of knowledge across a range of knowledge areas” will be linked to a distribution requirement that ensures breadth of exposure to varying knowledge types, perspectives, and methodologies.

The competency learning objective defines a set of general skills that are valuable regardless of one’s area of study. A different type of skill is the ability to understand and appreciate various perspectives and methodologies. This capacity, by definition, is best acquired through exposure to a range of disciplines, which can be achieved through an appropriate distribution requirement.

Our current distribution requirement is 1 FCE within each of three broad areas of study: humanities, social science, and science. This requirement is straightforward, gives students a significant degree of choice in breadth courses, and allows students some freedom in determining how deeply to study in a breadth area (since the requirement in each area can be satisfied with 1 FCE in one unit, or 0.5 FCEs in each of two units). It also has some shortcomings.

On the conceptual side, our current approach to defining breadth courses places units or large segments of units into broad categories (humanities, social science, science) without fine-grained evaluation of the content of particular courses and the kinds of knowledge and skills they develop. It also gives little guidance to students in terms of the kinds of knowledge that will give them a well-rounded education.

Recommendation 1c(i): The implementation process should elucidate the detailed goals for our distribution requirement in terms of the knowledge content and methodologies that all of our students should have familiarity with. Those goals should then be used to determine the breadth areas for the distribution requirement and the number of courses required in each. A plan should then be developed for designating courses as satisfying particular knowledge areas.

The CRRC received much input on the topic of breadth requirements and considered possible models for attaining breadth in the context of our new learning objectives. After much discussion, we concluded that there was insufficient time for us to consider the options

thoroughly enough to make a detailed recommendation. However, our extensive deliberations resulted in goals and principles for guiding the implementation committee, and two detailed options for its consideration. These are described in Appendix A6.

On the implementation side, the current distribution requirement has inconsistency in the way courses provide breadth. Not all “breadth” courses truly provide a suitable exposure to a field for students outside that area of study. The unevenness in level and quality of breadth courses means that students often choose them for reasons that are not pedagogically sound. Moreover, units would like more guidance on the number and kinds of breadth courses that would be suitable for them to offer. At least some choices need to be available at the 200-level, given the stated limit on 100-level courses and the required number of 100-level courses in some programs.

Recommendation 1c(ii): The implementation process should undertake a review of existing breadth offerings, and develop a plan for establishing suitable breadth courses across the range of knowledge areas adopted in Recommendation 1c(i). Guidelines should be developed that enable units to evaluate the suitability of their course offerings for satisfying breadth requirements for students outside their programs. To increase student choice for breadth courses, appropriate half-courses should be provided and prerequisites on courses at the 200-level should be removed when possible.

In enhancing existing breadth courses or developing new ones, the CRRC urges units to consider achievement of one or more of the competencies of Recommendation 1 as part of their objective. Since we envision students satisfying the competency requirements largely through a combination of POSt and breadth courses, one of the goals of breadth offerings is to address this need.

Recommendation 1d: “Integration of skills and knowledge within an inquiry-based activity” will be linked to a requirement of participation in a course or other activity that involves substantial investigation, synthesis of knowledge, and communication of results of the inquiry.

Research has confirmed that it is important in the development of critical thinking to provide students with an integrative experience that draws on skills and knowledge developed in prior years of study, and that allows some self-direction in pursuing an area of inquiry. It is especially important for our graduates, as honours degree recipients, to have a significant inquiry-based experience that integrates and allows them to apply their general and discipline-specific knowledge, skills, and experiences to a comprehensive project or essay. This type of experience should have some consistency in interpretation, but be flexible enough to accommodate disciplinary differences. A wide range of options is possible for providing inquiry-based learning opportunities, with some examples being:

- in-depth course with significant project/essay and presentation
- seminar course with significant project/essay
- laboratory course with significant project report
- other significant creative product with associated report
- senior thesis
- directed studies course
- capstone project course

- significant independent field work
- project/investigation within the context of international study abroad or other exchanges, or within a government/public sector/industrial internship, co-op, or Professional Experience Year (PEY)

This is not an exhaustive list, and other frameworks may better suit specific disciplines or interdisciplinary programs. Nonetheless, all integrative, inquiry-based learning should involve the (independent) framing and investigation of a nontrivial question or set of questions that require a novel or creative synthesis of the multiple elements of a student's undergraduate education to that point. As such, we intend that this requirement normally be fulfilled in the third or fourth year of study, to ensure that the student has sufficient knowledge of the field and methodological skills to undertake an integrative paper, project, or other activity. There should also be a requirement that the results of the investigation be communicated in an effective, compelling, and justifiable manner in written and/or oral form. As happens now, for example in international summer program courses or some capstone courses, there could be great value in requiring some significant group activity so that students pursuing this type of experience interact with one another in a way that facilitates discussion of their investigations or experiences.

Recommendation 1d(i): Each unit should develop a list of the possible “integrative, inquiry-based activities” that are eligible for meeting this requirement in each of their POSTs.

We recommend that units consult with the POST Advisory Committee (see Recommendation 3) prior to submitting their proposals for this requirement to the appropriate Curriculum Committee(s), in order to ensure that the intended goals of Recommendation 1d are clear.

Recommendation 1d(ii): Units are encouraged to review the design for all four years of their programs to ensure that students are well prepared to engage in the activities they provide for meeting this requirement.

The goal is that the design of a POST will reflect the need for students to engage in one of the integrative, inquiry-based activities in their upper years, and that preparatory experiences for such opportunities should occur at earlier stages in a program.

To support an appropriate range of integrative, inquiry-based opportunities for students, the Faculty will need to consider initiatives such as expanding the PEY program and maintaining its Stepping UP commitment for increased international study experiences. Moreover, we observe that this recommendation may have uneven resource implications, and additional study will be needed to develop an implementation plan that accounts for the constraints under which the academic units are operating.

2.1.2 Program of Study Requirements

Programs of study are at the very core of the academic experience for our students and they are the framework within which many of our educational goals are achieved. Fundamentally, programs of study are carefully constructed groupings and sequences of courses that lead students through a coherent curriculum of substantive and methodological foundations in the

discipline of interest. Careful design and management of programs have been the hallmark of each academic unit. The CRRC identified two areas in which the Faculty can improve on this process. First, we need increased transparency and consistency in communicating the objectives of individual POSTs and of our overall program offerings. Second, we need changes to individual POST requirements and to our full set of offerings to support greater student choice and curricular flexibility. The following recommendations elaborate our plans in this area of curriculum renewal.

Recommendation 2: All POSTs must explicitly state learning objectives and the steps to achieve them in each year of study. Each course should also specify learning objectives that are communicated to the students, along with a brief outline of how the course fits into a particular curriculum.

More guidance is needed to support effective program planning and to tie the goals of individual programs to the overall degree objectives in Recommendation 1. Currently, existing Faculty and University policy requires that a proposed program of study include a statement of its learning objectives. However, several factors prevent this requirement from being as useful as it could be. First, there appear to be no explicit expectations or guidelines regarding program learning objectives. In their absence, proposals have instead drawn on implicit principles, such as adequately circumscribed and definable subject matter, appropriate structure to convey the subject matter, and little overlap with existing POSTs. While useful, these are insufficient to provide consistent statements that can be linked to our overall degree learning objectives. Second, new faculty appointments and changing student populations bring new opportunities for curriculum renewal in ways that may not have been originally conceived during initial program development. The menu of courses might vary over time, possibly leading to differences between stated objectives and actual learning outcomes. It is important that units recognize the inherently dynamic nature of program evolution, both within their own programs and outside their unit, and that learning objectives evolve accordingly. Curricular changes that impact a program would either stay true to the original program rationale or would be justified by an explicit change to it.

Appropriate statements of program learning objectives would help faculty with curriculum planning and ensure that our POSTs are coherent, and would make program and course goals more transparent to students. We submit the following recommendation to help achieve consistency among our programs with respect to their statement of learning objectives, and coherence in our offerings over time.

Recommendation 3: A POST Advisory Committee should be established by Arts and Science to:

- Provide a venue for review and consultation for developing POST learning objectives
- Periodically review the full range of the Faculty's POST offerings by examining their learning objectives, complementarities, enrolment, grade cut-offs, etc.
- Make recommendations to the Curriculum Committees and Faculty Council, via the appropriate Vice-Dean, regarding modifications to offerings and/or requirements

- Develop a limited set of templates for POST descriptions to allow for more effective understanding of POST requirements and progress through POSTs, and to help ensure that they meet Faculty, University, and Ontario guidelines for programs and degrees.

The POST Advisory Committee will be both a dedicated forum for reviewing program objectives, and also a significant resource that could be drawn on by those seeking to develop new programs or to renew existing ones. The collective experience of the POST Advisory Committee should help program designers to more efficiently complete their survey work of course options across the Faculty (for example in meeting the needs set out in Recommendation 1) and could help foster new collaborations.

In addition to providing advice on individual programs, this committee has an important role to play in reviewing the overall offerings across the Faculty. One concern raised in the curriculum review process is that many related programs emphasize the fine-grained differences in disciplines rather than their overall commonality. The POST Advisory Committee would oversee the rationale for our offerings and encourage units to keep their programs current and responsive.

There are currently no guidelines for describing programs in the *Calendar*. A limited set of description templates would both provide sufficient diversity for a variety of programs to describe their structure and requirements, and allow students to recognize a common language in *Calendar* descriptions. It would also allow students and program officers to benefit from an enhanced use of program and degree assessment technology.

The details for the composition and reporting structure of the POST Advisory Committee will need to be established as part of the implementation process; it is intended that membership be representative and effective. The POST Advisory Committee will report to the Arts and Science Curriculum Committees where recommendations for Faculty Council are developed and/or endorsed, or directly to Faculty Council when appropriate.

In the following, we turn to changes in management of our POST offerings and in individual POST requirements, with the aim to enhance student choice and flexibility.

Recommendation 4: Each unit should be required to offer, on its own or in collaboration with other units, at least one major or specialist program that has no course grade or grade point average (GPA) entry controls.

The CRRC spent considerable time discussing the issue of specific GPA cut-offs for admission to POSTs. There are growing concerns about program accessibility and an increasing asymmetry across academic areas in the use of POST enrolment controls. Currently, 59% of all programs are open to all students (Type 1 programs) but with considerable variation: humanities 86%, sciences 46%, and social sciences 10%. Part of this variance is explained by the fact that some programs have explicit prerequisite requirements, such as a language course or a specific sequence of science courses that serve as a filter for program admissions. Part of this variance is also due to GPA admission requirements. Many are worried that the GPA entry controls on programs, often instituted primarily to limit student numbers, create unfair pressures on other programs that are unrestricted. As well, the use of GPA controls across a wide range of programs in a general area

can unfairly limit student choice. (About 15% of students at the end of their first year are ineligible for programs with even modest cGPA entry controls.) This issue needs to be reviewed in the context of our overall program offerings; grade cut-offs or other restrictions on program enrolment should not be instituted without consideration of the overall effect on the Faculty curriculum and the student experience.

We heard from many units that program entry controls are necessary in some instances, and from many students that think that competition for spaces based on cGPA is a reasonable mechanism for over-subscribed programs. We are not suggesting the elimination of Type 2 and Type 3 restricted programs, but rather are recommending that students have greater access to at least some programs in all broad areas of study, particularly in the social sciences. Every academic unit is being asked to participate in a program that is not GPA-restricted, either by offering one of its own or by collaborating in such a program with another unit. This program may make use of enrolment controls other than a course grade or GPA if program demand is overly high. The committee discussed several alternatives for managing program enrolment while maintaining student choice: more strategic use of admission streams as possible program-entry gateways; more effective use of a set of prerequisites to ensure competence in a subject matter (but without grade cut-offs on those); the development of new collaborative programs across units to distribute the enrolment load; and the removal of program-entry controls on select programs. (It should be noted that increased use of admission streams was generally not favoured by the committee.) The final strategy must be compatible with our student recruitment effort so that students considering Arts and Science have a clearer understanding of the program options that will be available to them at the end of first year.

One issue that will need further consideration in the implementation process is the differential impact of this recommendation on colleges and second-entry programs, to determine whether it is feasible, given the collaborative nature of their programs, to have them subjected to this requirement.

Recommendation 5: All specialist POSTs should require a minimum of 10 FCEs and a maximum of 14 FCEs. In exceptional circumstances, up to 16 FCEs may be allowed for a specialist program that draws heavily on courses in more than one unit.

This recommendation places tighter bounds on specialist degrees to ensure more consistent breadth and depth requirements.

Increasing the minimum FCEs for specialist programs addresses the goal of more consistent depth of study among programs. Currently, specialist POSTs can require as few as 9 FCEs—for comparison, majors require 6 to 8 FCEs and minors 4 FCEs. The new recommended minimum ensures that a specialist POST provides substantial additional depth beyond that required in a major.

Depth of study cannot be effective if it comes at the cost of little opportunity for breadth of knowledge and exploration of elective interests. Currently, a number of specialist programs require 16 FCEs or more out of the 20 required for the degree. Limiting a specialist POST to 14 FCEs will enable students to satisfy their breadth requirements while leaving sufficient opportunity for selection of purely elective courses, another important component of a student's

overall academic experience. The goal is to provide our students with structures that guide them in their degree choices, while giving them freedom to combine interests and explore possibilities.

One concern raised about limiting specialist FCEs is that some inherently multidisciplinary POSTs require more courses to provide students with sufficient training within each contributing discipline. An alternative approach is to develop major and minor programs that can be combined more flexibly. We note that a number of combined (cross-unit) specialist programs currently exist that meet the recommended 14-FCE limit. However, some units may still prefer to offer a combined specialist program that requires more than 14 FCEs to achieve greater depth in each of the areas. In rare cases, units may request exemption from the 14-FCE limit for a combined (cross-unit) specialist program by making a case that it is pedagogically warranted to Faculty Council (via the POST Advisory Committee or the relevant Curriculum Committees). To qualify for an exemption, we would expect a combined program to draw heavily on courses from multiple units and show academic rationale for the expected level of depth in each area to be studied. However, even a double major approach to interdisciplinary study would require a maximum of 16 FCEs. We therefore recommend that combined specialists that are determined to be eligible for exemption from the 14-FCE limit should not be permitted to exceed 16 FCEs, thereby allowing 4 FCEs for breadth and electives.

We also heard from units that more than 14 FCEs may be required in some programs that aim to qualify students for externally-imposed professional standards. In this case as well, we would expect a unit to demonstrate academic rationale for the particular set of courses that would place the program above the standard 14-FCE limit.

Recommendation 6: Every unit that offers a specialist POST must have at least one specialist program of 14 FCEs or fewer.

To maintain a sufficient array of specialist programs that are 14 FCEs or fewer, we further recommend that every unit that offers a specialist POST offer at least one that has a maximum requirement of 14 FCEs.

Recommendation 7: No POST should be permitted to require more than 3 FCEs to be completed within the first year of study. Where more than 3 first-year FCEs are required, students must be able to take the fourth FCE as a co-requisite in their second year.

Full-time students in Arts and Science take up to 5 FCEs either as half-courses or year-long courses. Currently, there are some programs, either explicitly or implicitly via prerequisite pathways, that require a large proportion of this course load to be comprised of specific courses that must be completed in first year. Many first-year science students take even more science courses than required to keep program options open. The committee was in general agreement that students need to enjoy a degree of curricular flexibility in their first year. At the same time, students should not be adversely restricted for program choices at the end of first year by not having completed the necessary prerequisites.

The committee acknowledges that this recommendation is closely tied to the review of the first year math and science curriculum proposed below in Recommendation 22, since the science

programs currently have the most tightly subscribed set of recommended/required first-year courses. Recommendation 7 would entail that some programs that currently require the first-year “four-pack” of life and physical science courses be redesigned as part of the first-year science curriculum renewal. This could involve dividing the content of some Y courses among more flexibly combined H courses, or shifting some of the required exposure to non-first-year courses (e.g., exposure to social science for life-science students). It is expected that such a project could take several years to complete.

2.1.3 Communication and Other Core Competencies

In our consultation process, writing was identified by a large number of students, faculty, and staff as one of the most critical pedagogical areas to target for improvement. The importance of writing and associated skills is highlighted by the inclusion of “communication” as one of the five competencies listed as a degree requirement for all graduates in Recommendation 1. Indeed, although we use the term “writing” in several recommendations below, the intent is to target communication ability more generally as “written, oral, and visual presentation” that “organiz[es] ideas into logical arguments” (Appendix A5). Another of our identified competencies that goes hand in hand with effective communication is information literacy. The need to gather, evaluate, and synthesize information is a necessary precursor to most communication tasks; conversely, information literacy is a limited skill if students cannot effectively communicate the information that they locate and/or create.

The recommendations below put forward a number of possible strategies for imparting these skills to our students. The committee also discussed the use of a writing test as an admissions criterion, and alternatively the use of a screening test for new students to indicate where remedial writing instruction should be required. While the recommendations here focus on instructional innovations, the CRRC urges the implementation process to consider means for better identification of students with writing difficulties.

Clearly, the teaching of communication and information literacy skills is a resource-intensive activity. Although the CRRC focused on these skills in particular, it should be noted that the achievement of the other competencies in Recommendation 1 may also require support for instructional initiatives. The implementation process will need to monitor the impact on our curriculum delivery of the integration of the competencies into our offerings.

Recommendation 8: Writing instruction within POSTs should be enhanced through Faculty-sponsored collaboration between writing instructors and program faculty in the development and on-going updating of program-specific pedagogical materials, and in both initial and subsequent training of instructors and teaching assistants.

While we have extensive writing support available within the college writing centres, students currently must recognize that they need help with writing and actively pursue it. Moreover, support for individual students is operating at capacity in the writing centres. Similarly, the burden is on faculty to seek out aids for writing instruction. A concerted effort is needed to integrate writing into the programs of study by providing support and training for instructors to

develop appropriate program-specific writing instruction, and by training teaching assistants (TAs) to assist appropriately in this process.

A pilot project is currently underway that aims to support the integration of high-quality writing instruction into courses in a student's area of concentration, so that writing and communication skills are learned within the context of the subject matter. The project associates writing instructors with three departments to co-develop program-specific writing instruction with the departmental faculty. This project should be evaluated for effectiveness and adapted in response to the experience gained over the two-year pilot period (academic years 2006-07 and 2007-08). A concrete plan for mounting this or a similar initiative on a Faculty-wide scale should then be developed. In addition to the initial collaborative training of program faculty and TAs, the Faculty plan should also include explicit details for on-going training of new faculty and TAs, and regular updating of writing instruction pedagogy within the programs.

Furthermore, we need to explore possibilities for broadening the scope of support to include communication skills more generally, including oral and visual communication and the use of new media. Many of our graduates will find employment in areas in which multimodal communication skills, including presentations or website construction, will be critical. Linking these skills to opportunities for expression within a student's curriculum will be key.

Finally, the writing pilot project explores one means for enhancing writing instruction, by supporting the collaboration of faculty/TAs and writing specialists. Other models and initiatives for the improvement of writing may emerge and should be encouraged.

Recommendation 9: The coordination among the Faculty and the colleges in providing writing support should be evaluated and improved where possible.

Because we are recommending that communication skills be specified as a learning objective for all Arts and Science graduates, the Faculty needs to ensure that students receive a consistent level of support with respect to those skills. We need to work closely with the college writing centres to bolster such efforts, and the role of the Dean's Coordinating Committee on Writing should be reviewed with that end in mind. We should also consider support for additional specialized courses, like our current WRT offerings, to address the needs of students in writing and communication skills; such courses may also be needed for remedial instruction.

Recommendation 10: Students whose first language is not English often have special needs in the area of communication skills, and a plan should be developed that is aimed specifically at addressing those needs.

Achieving good communication skills can pose certain challenges for students whose first language is not English. The ability to communicate well in English is not necessarily correlated with whether one speaks English as a first language. However, being a non-native English speaker can introduce additional challenges and can require different teaching methods from those used with native speakers. Almost half of domestic students admitted to Arts and Science and other first-entry divisions at the University spoke a language other than English in their home as a child. A coordinated effort is needed to provide support for English language learners,

possibly through ESL workshops or classes along the lines of what is offered by the School of Graduate Studies (SGS) or the School of Continuing Studies (SCS). We could also provide versions of WRT (writing) or other existing courses that are designed specifically for English language learners. We should investigate possible models and evaluate the feasibility of offering credit/non-credit courses in this area.

Recommendation 11: Information literacy training within POSTs should be strengthened through Faculty-sponsored collaboration with librarians.

Information literacy—the ability to use appropriate tools and technology to locate, evaluate, assimilate and create reliable and meaningful information—is becoming ever more critical as more and more information, much of dubious authority, is available on the Internet. Critical analysis skills, be it in the humanities, social sciences, math, or sciences, rely on the ability to evaluate the nature of the material being examined. Students entering our programs are not sufficiently equipped with the skills needed to evaluate and successfully make use of the information they are exposed to. As with writing, instructors may need support in developing the necessary skills within their offerings.

A pilot project should be planned that links information literacy specialists with departments. This project may be similar to the writing pilot described in Recommendation 8, or a different model may be more appropriate. The project should assess the information literacy needs of students and the types of instruction that would be most effective in developing the necessary abilities within a field of study. The goal of the pilot will be to determine the best way for faculty and TAs to impart information literacy skills in the context of the subject matter being taught. Consultation should include librarians from the colleges and the broader University of Toronto library system. As with the writing pilot project, the results of this pilot should be evaluated and a plan then developed for Faculty-wide participation in long-term program-library instructional collaboration. The expectation is that pilot projects will be ramped up over time to include the involvement of all central, campus, and college libraries.

As in Recommendation 8, we note that collaboration between faculty/TAs and librarians is one model for addressing the information literacy needs of our students, and other initiatives for enhancing our students' skills in this area should be encouraged. The capacity of the libraries to support these initiatives and to re-focus outreach priorities needs to be taken into account.

Recommendation 12: We should (i) acknowledge the resource-intensive nature of the teaching of fundamental abilities such as communication and information literacy, (ii) support instructors and TAs with appropriate pedagogical training, and (iii) enable instructors and TAs to provide the feedback that is required for successful teaching of these skills to students.

Experience within the Faculty confirms the research showing that effective writing instruction is highly resource-intensive; we believe that information literacy training is no different. Learning to be effective communicators, and consumers and producers of information, requires students to produce more materials, usually in iterative fashion, that must be graded with substantive feedback. The marking requirements are increased not only in volume (more items to mark with

a greater degree of feedback), but also in expertise (high-quality feedback is required for it to be useful).

One means of supporting these activities would be increased TA allocations, including training in marking skills and extra hours for marking. Other mechanisms may include workload relief for faculty so they can receive training in instruction of communication and information literacy skills, or can put in extra time outside the classroom. Instituting smaller classes for courses that impart these critical competencies is another option.

2.2 The Academic Experience

Our recommendations above are aimed at upholding the quality of our undergraduate degree in terms of our fundamental learning objectives. Here we turn to ensuring excellence in the overall academic experience for our students. We discuss means for broadening the available curricular and co-curricular opportunities and for supporting curricular enhancements through a more flexible academic calendar structure (Section 2.2.1), for enhancing the transition to the academic environment of Arts and Science in the first year (Section 2.2.2), and for coordinating and improving advising efforts and tools (Section 2.2.3).

2.2.1 Expansion of Curricular and Co-Curricular Offerings

A guiding principle of the CRR process was the importance of broadening our students' experiences along a number of dimensions. The goal of producing knowledgeable global citizens who are engaged as leaders in their profession and community requires that we support the integration of global issues into the academic experiences of our students. The CRRC strongly endorses the Faculty's commitment to increased international experiences and to the promotion of language study. The importance of cross-cultural learning for students in the multicultural city of Toronto and in a nation formed by immigration cannot be overstated, and should be reflected in our curricular offerings.

Broadening our students' academic experiences also involves the expansion of co-curricular opportunities that build on the core material presented in the classroom. Research shows that students learn more effectively when given opportunities for self-guided or independent learning, as well as for experiential learning that puts classroom knowledge to use. In Recommendation 1, we posited participation in an integrative, inquiry-based experience as one of the key learning objectives of our undergraduate degree (see Recommendation 1d for details). Our further goal is to enhance activity-based learning through both investigative and experiential learning opportunities that allow a student to actively participate in the creation, synthesis, and/or application of knowledge throughout the degree. This type of learning often involves significant group interaction as well, building our students' teamwork skills and sense of community.

The following recommendations detail our commitment to broadening both curricular and co-curricular offerings.

Recommendation 13: Exposing students to a range of ideas and perspectives should be achieved by further diversifying our offerings, focusing especially on the incorporation of multiple perspectives and the integration of global issues into the existing curriculum.

The Faculty recognizes and supports the integration of diverse ideas and perspectives throughout the curriculum, but more can be done to see that all students benefit from the exposure to content that both reflects and broadens their experiences. Some units have already reviewed their courses with the intent of revitalizing and updating their offerings with respect to diversity and global issues. All units are encouraged to undertake a review of their curricula to ensure that the contributions of underrepresented groups are acknowledged and that traditionally Eurocentric perspectives are broadened. Steps to achieve this goal may include, for example, developing literature courses that examine previously marginalized writers or updating science courses to reflect the contribution of women or other underrepresented groups in the subject.

Another aspect of diversification is support for area studies to acknowledge their important role in the Faculty's offerings. Area studies and other interdisciplinary programs that inherently expose students to multiple—and often competing—perspectives play a key role in training students to think beyond and through traditional disciplinary boundaries and national borders. However, such programs are often offered by colleges whose resources do not always allow for long-term programmatic planning.

Recommendation 14: We should increase the opportunities for student engagement in research across all disciplines, especially by expanding the flexibility of the 299 and 399 offerings and by developing alternative mechanisms for research experiences.

Our strength as a research-intensive university allows us to make a strong commitment to inquiry-based learning through broad student engagement in research-related activities. Research activity is important training for all students, not just those going on to graduate school. The critical analysis and problem-solving skills acquired by doing research, as well as the ability for self-guided and independent activity, also prepare students for the workforce. Moreover, this type of training is most effective for developing a student's ability to adapt to change, and absorb and respond effectively to the increasing interconnectedness of the world.

We already have very successful research courses in the form of the 299 and 399 offerings; the 299 course involves on-campus research with a faculty member in a student's second year, while the 399 course supports off-campus experiential learning, usually undertaken in the summer after third year. However, many faculty who would like to participate in 299s/399s find that their students' backgrounds are inappropriate or their style of research does not fit within the scope of the program. For example, many areas of study require expertise in a language other than English as a precursor to research in the field. The 299 offerings should be formulated to support differing research styles and methodologies across the full range of humanities, social science, and science disciplines. Similarly, the opportunities for 399s should be broadened so they are applicable to a wider range of disciplines and types of research investigations. Since some research is not naturally associated with off-campus work (as in much laboratory science work), an alternative is to support on-site 300-level research courses that complement the 399 offerings. Making these programs more flexible will enable all interested faculty to participate and will increase student research opportunities.

Research activity is also currently supported through 400-level courses that involve independent study with an individual faculty member. Encouraging academic units to do more to match interested students to appropriate faculty could further promote and fuel these opportunities.

Recommendation 15: We need to catalogue the range of experiential learning methods currently used, publicize those approaches to our students and faculty, increase the opportunities for experiential learning throughout the curriculum, and implement a mechanism for funding novel approaches.

Our curriculum includes many innovative ways for involving students in experiential learning opportunities, both in and out of the classroom. The current opportunities need to be better understood and publicized to increase awareness of what is offered and its pedagogical importance. For example, many Drama courses have a significant practical component, numerous science courses involve off-site fieldwork, and INI 306Y “Urban Experiential Learning in Toronto & the GTA” couples traditional study with an internship involving local government or a non-profit organization. We are in a unique position to provide outstanding experiential learning opportunities for our students given the breadth of our faculty combined with our location in a rich urban environment with significant outdoor resources nearby. Our valuable ties to stakeholders such as industry, government, the community, and international partners will enable our already diverse experiential-learning opportunities to expand. Raising awareness of current experiential learning techniques can encourage more faculty to adapt such approaches to their own subject matter. We should encourage faculty to explore new ways to incorporate experiential learning through instructional initiative grants.

Further to our goals of curricular flexibility and broadening of the academic experiences available to our students, we recommend the following several steps to support more flexible timetabling and combinations of courses of interest, and to encourage instructional innovation in the types of courses offered.

Recommendation 16: The Faculty should consider allowing some flexibility and leeway in the weighting of courses; quarter credit courses or three-quarter credit courses may be one way to introduce this.

Our degrees are composed of discrete course units or credits, and 20 full-course equivalent credits are required for an undergraduate degree. Almost all of the 2000+ courses offered in Arts and Science are weighted as either half- (H or 0.5 FCE) or full- (Y or 1 FCE) course units. In addition to the standard one-term or year-long offerings, respectively, half-year equivalent courses can be spread over the year and full-year equivalent courses can be compressed into a single term. For equivalently weighted courses (H or Y), formal class contact time as well as the work expectations can vary significantly, but this is not formally tracked.

The CRRC was asked to consider the issue of finer-grained course weighting, such as the introduction of quarter credit or three-quarter credit courses. Little support was voiced for trying to use finer-grained weighting schemes to reflect differential contact time or amount of work in what is an H or Y class, with the opinion expressed that this would be complex and unlikely to

work in practice. On the other hand, there was support for variable weighting that would reflect very different types of offerings and would enable new kinds of courses. For example, a cluster of lab exercises or a field experience may be most appropriately offered as a quarter credit course, while a three-quarter credit may best reflect the commitment expected in a course with lecture hours comparable to a half-course but with a significant community internship as well. To allow for such new opportunities, the committee recommends that the implementation process consider options for further partial weighting of courses in addition to 0.5 FCE. We recognize that there may be nontrivial financial implications for this recommendation, as well as some complexity in determining appropriate and consistent course weightings under such a scheme. Protocols for implementation of this tactic would require additional analysis, including investigating how other University divisions, such as Engineering, accommodate variable course weighting.

Recommendation 17: To facilitate greater flexibility and diversity of learning opportunities, Arts and Science should continue to increase the proportion of courses offered in the H format.

Based on long-standing traditions in Arts and Science academic units, courses can be one term or year-long, with units making their own decisions on the types of offerings. First-year courses are often Y courses and upper-level courses are a mixture of H and Y formats. The CRRC heard justification for both formats: the Y format allows more time for in-depth exploration of topics in a single course, and the H format enables more flexible combination of topics with depth achieved through multiple courses.

While there is merit to both approaches, over the years the Faculty has moved overall to more H course offerings due to their many benefits. It is easier for students to explore a wider range of disciplines not only within the prescribed breadth requirements, but also in elective choices beyond the confines of a program. It is also easier for students to schedule in courses across units when there is a large selection of H courses to choose from. In particular, the committee heard about timetable restrictions for students attempting to complete double majors in units that offer primarily Y courses, the majority of which are in two-hour lecture blocks. A student who enrolls in H courses has greater curricular flexibility throughout their degree in terms of scheduling, dropping, and selecting new courses. In addition, there are concerns that Y courses limit student choice, especially in first year.

While some units may continue to prefer the Y format for some courses for pedagogical reasons, they should be encouraged to consider the alternative H-course format when the Y format is not required to achieve particular academic goals. One option is to consider offering, where appropriate, two complementary or sequential H courses in place of a current Y course.

Recommendation 18: Arts and Science should develop an academic schedule that allows for increased accommodation of diverse pedagogical approaches by better balancing the fall and winter terms and by allotting blocks of time across the year that can be used for such experiences.

The variety of modes of teaching incorporated in our programs of study is broad, including novel techniques calling on experiential learning, international study, applied skills courses,

participation in scientific research, and engagement with various communities outside the university. One novel mode of instruction that has been proposed is the use of short, intensive courses. These discrete academic experiences may link students with visiting international scholars or involve academic training outside the classroom, such as field experiences or projects with community partners. However, these experiences require a portion of each year's academic schedule to be left open so that students are free to engage in these opportunities.

Currently, the Arts and Science academic timetable is structured around a 13-week fall term with a short (10-day) exam period at the end of the term. The spring term is much longer at 14 weeks (including reading week), followed by a four-week period comprised of a study week and 15 exam-writing days. A redesign of the schedule, in particular of the very long study and exam period at the end of the academic year, needs to be considered. Work on this has been underway for the last two years and we recommend finding a new structure that would allow for novel modes of learning. With the on-going move to more H course offerings, balancing the fall and winter terms should now be possible to accommodate the types of experiences we mention here.

2.2.2 First-Year Experience

The first-year experience is crucial to a student's university education in many ways, determining to a large extent how much a student will benefit from the next three years (and beyond). Because the first year is such an important time in the academic experience, it is essential that we provide the means for students to find their "bearings" and show their potential. Perhaps foremost, it is essential to provide a supportive and sociable environment that encourages plenty of contact with fellow students, as well as individual interaction with faculty and advisors. A key factor in the academic experience for first-year students is integration within the Arts and Science learning community. We are a large community, but have a unique structure that provides a "home" for students in a smaller context of one of the seven colleges. We support strong partnerships between the colleges and departments that can impart to students a sense of the excitement of an undergraduate education and of intense engagement in the Faculty.

Our first-year course offerings are the primary means of fully engaging the interest and curiosity of our students, who currently select from approximately two hundred 100-level courses (including the First-Year Seminars, discussed below). We need to allow students some degree of curricular flexibility in accessing these offerings to enable them to participate in the self-guided intellectual exploration critical to a university education. Some of our programs require only a single first-year course, leaving the choice of the remaining first-year courses open to the student. At the other end of the spectrum, some programs expect a student to complete four specific full-year courses in first year. We must strike a balance between imparting foundational knowledge that will prepare students for a chosen program of study, and enabling exploration of areas to which they may have had little prior exposure. Moreover, the suite of courses taken in first year should provide a strong basis in the fundamental skills that we expect of our students so that they can cope satisfactorily with university-level work in subsequent years, and can build on those skills to reach a level of competence required of our graduates.

Given these considerations, the CRRC identified the following goals to guide our recommendations about the first-year academic experience in the Faculty of Arts and Science:

- to stimulate students' intellectual curiosity and exploration, and provide them with new capacities to learn so they engage fully in university life and find their courses rewarding
- to provide students with a foundation of substantive knowledge that will enable them to make a well-informed program choice at the end of their first year of study and place them on the path to success in their chosen program(s)
- to facilitate the development of (at least some of) the competencies we have identified as one of the learning objectives of our undergraduate degrees (Recommendation 1, item b)

We also recognize the tremendous importance of advising and other academic support to the first-year experience, but return to that in the following section, since effective advising is required throughout a student's degree.

Recommendation 19: Every first-year student should have the opportunity for a small-class experience; this should evolve to become a requirement rather than merely an opportunity as resources allow.

The committee feels strongly that there are significant benefits of allowing students the opportunity to take one or more small classes in their first year. Students have the possibility of closer interaction with an instructor who can more carefully observe their progress and provide timely feedback. A small-group experience that is carefully designed can better encourage the development of critical thinking, writing, oral presentation, and research methods skills, as well as some of the basic quantitative reasoning skills where appropriate.

One important venue for providing this kind of experience is the set of First-Year Seminars (199 courses) that are open only to first-year students. At peak capacity, these courses can accommodate just under half of the first-year class. First-year seminars are mostly full-credit (Y) and some half-credit (H) courses that focus on discussing issues, questions, and controversies surrounding a particular topic or discipline (or several disciplines) in a small-group setting to encourage the development of skills expected of successful undergraduate students, including critical thinking, communication, and research skills. With a maximum enrolment of 24 students each, these courses can provide an enjoyable and challenging small-class experience in first year. Feedback to the committee indicated that 199s are generally considered valuable.

The committee agreed that in principle it would be important for all students to participate in at least one class with this intensive and intimate format. However, we also recognized that this type of small-class experience may be obtained in other settings, such as laboratories, tutorials, or small language classes. We decided that more information needs to be gathered on what is currently available to students in this regard.

Recommendation 20: A thorough analysis of the current range and effectiveness of small-class experiences should be undertaken so that the Faculty can make informed decisions with regard to expanding small-class opportunities or making small classes a requirement.

To assess our capability and need for additional small classes, it is not sufficient simply to count the number and size of course lectures, labs, and tutorials. We must determine which of our offerings indeed achieve the intended goals of a “small-class experience” in first year, which we identified as including some or most of the following:

- close engagement and interaction with an experienced instructor
- options for part of the course curriculum to be student-centred
- discussion and debate among peers in a more encouraging setting
- development of core skills
- exploration of some in-depth topics as preparation for upper year experiences

We also need to evaluate how many of our students have at least one such experience, since some may have more than one small-class opportunity, and others may have none (either by choice or due to timetabling or other constraints).

Some concern was expressed that current labs/tutorials may not meet the above goals despite their smaller size. For example, attendance may be poor, the style of interaction may not be engaging, or the instructor may not be sufficiently experienced in small-class interaction. To improve upon these experiences, we recommend a review of best practices for labs/tutorials and, since many of these course sections are taught by TAs, a careful examination of TA training. Such a review will require unit-level self-evaluation with student engagement in the discussions, and may also benefit from coordination with the Office of Teaching Advancement.

Recommendation 21: We propose that Arts and Science offer a variety of additional small-class opportunities, and that at least some of these opportunities be considered in the context of developing stronger departmental-college ties.

To enhance the opportunities for small-class experiences even further, the committee discussed a number of options for increasing our offerings of first-year seminar courses or courses with a seminar component. The committee strongly supported the goal of strengthening college–department collaboration in these endeavours. We recommend that the Faculty consider the following specific proposals:

- Enhance the accessibility of the existing 199s by offering more H versions and more evening sections.
- Build a small-class experience into existing large first-year courses where such an experience is now missing. (This assumes the availability of appropriately trained TAs.)
- In addition to 199H/Ys, introduce another series of first-year courses such as:
 - medium-sized lecture courses with a required seminar component, in each of the humanities, social science, and science (and interdisciplinary versions that cross at least two of these);
 - interdisciplinary college/departmental collaborations that would be team-taught involving an instructor from each of the areas of humanities, social science, and science;
 - department-run seminars with a co-requisite first-year lecture course, allowing for greater faculty-student interaction and more intimate discussion of material covered in the lectures (cf. PHY 189);

- seminars/tutorials formed around the college membership of students, either as stand-alone offerings or linked to lecture courses offered by departments.

These options should be carefully considered to determine which should be attempted, perhaps on a pilot basis; Appendix A7 gives more detail on the first two proposals. The committee acknowledges that the success of small-class experiences requires the availability and dedication of experienced and trained instructors who are skilled at working with small groups. We recognize that this is a challenge but encourage close examination of options such as enhanced training of faculty and TAs, the appointment of Teaching Fellows or Academic Dons, or other mechanisms to increase the availability of experienced instructors for this purpose.

Finally, the Faculty also needs to consider how to determine a unit's expected contribution of both small-class offerings and breadth courses if our goal is to increase the overall number of these opportunities for students.

Recommendation 22: A First-Year Math and Science Curriculum Committee should be established by the Faculty to undertake a comprehensive review and renewal of the content and delivery of the introductory science curriculum.

The sciences and mathematics are undergoing continuous and rapid change, and we heard strong support for a first-year math and science curriculum review. This is particularly relevant in Ontario where the high school curriculum has changed dramatically over the past decade and where there is the need to better understand, track, and support the transition of students into the first year of university. We believe that first-year science education in the Faculty of Arts and Science should be reconceived partly to achieve coordination across different first-year science courses and partly to stimulate student curiosity beyond the first-year science core. Moreover, the review of first-year math and science will need to acknowledge Recommendation 7, which states that programs should not require more than 3 FCEs in the first year, since this is an important cornerstone of providing more flexibility to first-year students in their course selections. (This may also be best considered in the context of Recommendation 17, which supports greater curricular flexibility through the judicious offering of more H courses.) The math and science curriculum review should be undertaken with broad consultation and input from across Arts and Science and other divisions that participate in our science programs. The goal will be to develop specific sets of math and science learning objectives and to propose a curriculum that is coordinated around these objectives.

Recommendation 23: To encourage students to engage in intellectual exploration, especially in first year, students should be allowed to select a breadth or elective course on a credit/credit-D/no-credit basis.

First-year students sometimes hesitate to take certain breadth courses or courses beyond their anticipated program trajectories due to concern about the effect on their GPA. There is a sense from faculty that students are hesitant to explore new areas of interest because of these concerns, limiting student exposure to new perspectives. This may be particularly true of those courses that emphasize certain skills at a somewhat more advanced level (e.g., a language skill or a quantitative skill).

Our intention is that, if a student elects to take a course for credit-only, the student would have to achieve a final grade of at least 60% in the required course work to receive the annotation of “credit.” If the grade were between 50% and 59%, a “credit-D” would be assigned. A grade below 50% would result in “no credit.” The decision to take a particular course under this option would be known only to the student. A number of detailed considerations were discussed by the CRRC, such as limiting this option to first-year courses, and allowing the student until the drop date to decide whether to count the course as a graded course or for credit only, but no firm decisions were reached. We leave the establishment of a detailed and clear proposal regarding the rules around a credit/credit-D/no-credit option to the implementation process.

In any case, this recommendation does not affect the offering of credit/non-credit courses by a unit where it makes clear pedagogic sense to specify a course this way (such as with the WRT courses). However, the number of courses taken for credit-only that can count toward a student’s 20-credit total should be limited, whether the student has taken a course that’s offered for credit-only, or has exercised their credit/credit-D/no-credit option.

2.2.3 Advising

Appropriate advising support is a critical component of the academic experience for our students in first year and beyond. One of the strengths of the Faculty is our breadth and diversity of programs and course offerings, but such a wide range of options can be overwhelming to a student. Our current system of advising is extensive, involving dedicated resources within colleges, departments, and the Faculty, but better coordination and guidance is possible. Because students need not always seek permission for choices of programs or courses, they may not discuss those options with anyone, or take stock periodically of their program and degree accomplishments. We need to provide guidelines to help students in selecting programs and in choosing courses both within and between programs. We also must improve the technological tools for exploring program and course options, and for monitoring progress toward the degree. Even with such aids for students, improvements in advising and identification of students in academic difficulty are critical to ensuring the academic success of our students.

Recommendation 24: Each program should provide explicit suggestions to students on a range of other programs that might be complementary, and on distribution and elective course selections that might work well with each POST.

Guidelines such as these are strategically important in a Faculty of this size and complexity where students may combine majors, majors and minors, or specialist programs across a wide range of offerings. Currently, many students make decisions on their POST(s), distribution courses, and electives with little advice, and these choices could be improved with more guidance. For example, achieving the best educational outcomes for a student may involve knowing how to combine a particular major with a complementary major program or pair of minor programs.

These suggestions are intended to provide needed guidance to students for navigating their way through our vast offerings. This is particularly true for first-year students, who sometimes make

suboptimal choices due to lack of experience and awareness of their options. However, care must be taken to ensure that students do not incorrectly interpret these suggestions as additional requirements for a POST, nor that preference is being given to any particular choice(s).

Recommendation 25: Arts and Science should work in collaboration with university-wide offices to ensure that students, advisors, and academic units have a technological tool available for assessing student progress through degree and POST requirements. As part of this effort, Arts and Science should take the lead in providing an interactive, on-line calendar on its website.

The University has invested significant effort in developing some of these tools as a resource that students can access when considering program choices, distribution options, and electives. The purpose of this recommendation is to ensure that these tools are reliable, responsive to changes in POSTs, capable of recording exceptions and waivers, and supportive of the academic advising and student planning conducive to effective progress toward a degree.

These tools become even more important when considering the implications of several recommendations outlined in this report, which require students and advisors to navigate and track student progress through various requirements. The work of the proposed POST Advisory Committee in developing a limited suite of program description templates (see Recommendation 3) should assist the further development of technological tools for navigating requirements. Also needed is an interactive catalogue of courses linked to an interactive timetable showing the course descriptions and syllabi. An on-line, interactive Faculty calendar and timetable would be a highly effective tool for students to make course selections and see the impact of their decisions on their yearly schedule.

Recommendation 26: The Faculty should develop a plan to identify students encountering academic difficulty as early as possible in their first-year courses and provide them with the support conducive to academic success and to effective progress toward degree completion. The plan should also specify the continuing support that will be available to students throughout their degree.

Data on academic status (e.g., Good Standing, Probation) demonstrates that the majority of students who encounter academic difficulty do so in their first year. Once they have acquired sufficient academic skills and made appropriate subject area choices, they make better progress. A program to address where and when help is needed most will improve degree progress and the student experience overall.

There are a number of possible strategies for enhancing student academic advising that could involve more innovative collaborations between college and departmental student advising services, as well as selected faculty who may become more closely involved. These collaborative and comprehensive advising services are particularly important during first year, but are critical to students throughout their degrees. It has been noted, however, that some current advising services are underused, as are other academic supports such as office hours and tutorials. A plan for improving advising services and increasing student participation in all forms of academic assistance should be developed. Consideration should be given to ways to use existing technology such as email and websites to more effectively engage students.

3 Concluding Remarks

This report of the CRRC begins with a clear statement of our objectives for undergraduate education and ends with recommendations to improve the student experience. The Committee felt strongly the direct connection between our curricular structure and its mode of delivery, the quality of what students experience while they are here in the Faculty, and the value of what they take away for the rest of their lives.

The size of the Faculty of Arts and Science enables us to offer an unparalleled breadth and depth of programs and course experiences to our students. It also leads to challenges in providing them more individualized attention. A number of the recommendations we have made in this report emphasize the importance of faculty–student contact across many areas of the curriculum, for example, in facilitating the transition to university, in teaching foundational skills, and in engaging students in research and experiential learning opportunities. We also recommend improvements in advising, to help students navigate and succeed as they progress through our rich curricular offerings, which will increase their contact with advising staff. These are ambitious goals. The Faculty has committed to decreasing its undergraduate student enrolment while maintaining faculty and staff numbers, which should provide a good climate for progress; however, implementing these recommendations will present challenges to our resources and our ingenuity, to ensure that we focus both of these where they will have the most rewarding effect.

Our recommendations are guided by an overall vision of undergraduate education in the Faculty of Arts and Science, and by an explicit formulation of learning objectives for our honours degrees. The Committee views this as significant progress. However, we fully recognize that some important elements still require further discussion and clarity, and many specific details remain to be decided to achieve the goals we set forth here. The Curriculum Renewal Steering Committee that we recommend follow the CRRC will need to consult extensively with constituencies across Arts and Science and with our partner divisions, as well as to encourage creative engagement in academic units to ensure that the full benefits of renewal reach all parts of the Faculty. As part of implementing renewal, the Faculty will have to identify which elements are to be put in place first, which will require pilot projects, and which must await resource decisions. We will have to monitor the impact of the changes and identify any unforeseen conflict among the initiatives. And finally, we will have to establish the mechanisms to evaluate whether our curricular initiatives are achieving our stated goals.

In all these tasks, our clear statement of learning objectives for the Faculty's honours degrees, and their explicit connection to degree and program requirements, will be an essential tool, helping us shape and polish our renewed curriculum so it realizes our best aspirations and fulfills our key academic mission, as we educate the next generation of students.

Appendices

A1: The Curriculum Renewal Process in Arts and Science

The Faculty of Arts and Science has a tradition of periodic curriculum review and renewal, although there is no formal structure for this process. The current Arts and Science curriculum is rooted in decisions made in the mid-1960s arising from the *Macpherson Report*, which significantly liberalized the curriculum. This included the abolition of the honours degree and the resulting “New Programme” designed largely department-by-department with modest overall structure imposed by the Faculty. The *Kelly Review* was undertaken in the 1970s in response to the perception of a lack of structure in the “New Programme” and it led to definitions of programs of study that had a more consistent overall framework and a breadth requirement of at least three courses outside a student’s main area of study. Following the publication of *Renewal 1987*, a set of recommendations was put forward regarding the restructuring of admissions categories, streamlining of first-year courses, establishment of the minor program, more structure in breadth requirements, and a revision of curriculum committee structures. Many, but not all, of these recommendations were implemented over the following several years. Since then, the most significant overall curricular changes have been the introduction of First-Year Seminars (the 199s), the creation of the second- and third-year Research Opportunities and Independent Experiential Studies programs (299s and 399s), and the decision taken by Faculty Council in spring 2001 to offer only four-year honours degrees.

In January 2006, Dean Sinervo released a Green Paper outlining the critical components of the next curriculum review and renewal process. The Green Paper was the first iteration of principles and ideas that would inform a renewal that accounted for the dynamic nature of undergraduate education and the exclusive offering of the four-year honours degree. The feedback received was used to develop a White Paper that clearly laid out a set of key questions to consider in the review. The White Paper was released in late May 2006 and a Curriculum Review and Renewal Committee (CRRC) was struck during that summer. The mandate of the committee was specified as follows:

To review and evaluate the curriculum and curricular options available to Arts & Science students, and make recommendations for improvement in quality and effectiveness. The committee should consider the degree program and credit structure in the Faculty and the in-classroom and out-of-classroom experiences that should make up an undergraduate student’s academic experience. It should make recommendations on how the Faculty most effectively integrates into a student’s curricular experience research opportunities, international experiences, the Faculty’s commitment to curricular equity and diversity, experiential and collaborative learning, leadership development and increased effectiveness in writing and communication.

The CRRC began its formal work in September of 2006 with representation from all stakeholders in the review process—teaching staff, students, administrative and technical staff, and alumni of the Faculty—from across the academic units involved in undergraduate education (departments, colleges, and other program-sponsoring units). A number of assessors from other divisions within the University (including UT Mississauga and UT Scarborough) were also appointed to the CRRC. (The full committee membership is given below.) To enhance

transparency and consultation, liaisons were appointed within each unit to engage their constituencies and, in the first phase, to provide feedback on the White Paper and, in the later stages, on an earlier draft of this report. The committee was advised to recognize and respect the authority of units in setting disciplinary and interdisciplinary standards and defining specific educational goals. In addition to the tremendous help of unit-level liaisons, the CRRC and its sub-committees have taken steps to engage the Arts and Science community via:

- a website for sharing information on the on-going review process and for soliciting feedback;
- an email address for individuals to submit commentary to the committee;
- two town halls in November of 2006 and two more in March 2007;
- frequent updates to Faculty Council and the Council of Chairs, Principals and Academic Directors;
- many discussions with stakeholders outside the CRRC.

After the release of a draft report in March 2007, the CRRC received 140 pages of written commentary, 4 hours of oral feedback at the March town halls, and numerous informal suggestions and concerns via personal meetings with the co-chairs. This feedback represented input from liaisons representing their units, as well as from individual students, faculty, and staff. The CRRC met 7 times in May and June, for a total of 15 hours, to reformulate recommendations and to better elaborate their motivation and intended consequences.

This final report is the culmination of the CRRC's work in synthesizing the input and ideas from across all of Arts and Science and its primary partners in the undergraduate mission. It should be noted, however, that there was overwhelming consensus in the committee that this was but a first, critical stage in a multi-year process of curriculum renewal, and that the report should be seen not as an end but as an important first step in an on-going process of curriculum reform. It is the CRRC's final recommendation that this process be carried on under the direction of a Curriculum Renewal Steering Committee to continue the representative, transparent, and consultative approach to curriculum reform.

The table on the following page lists the full CRRC membership, and indicates with a '*' those members who chose not to endorse this report.

Curriculum Review and Renewal Committee membership, 2006-2007:

* Noaman Ali, Fourth year Student	Derek Allen, Principal, Trinity College
George Altmeyer, Special Consultant to the Dean and the Faculty Registrar (Assessor)	Teresa Baptista, Staff, Physics
* Rachel Barney, Professor, Philosophy and Classics	Donald Boere, Registrar, Innis College
Craig Boutilier, Chair, Computer Science	Bruce Bowden, Registrar, Trinity College (Invited participant)
Wing Sheung Chan, Second year student	Mohan Cooray, Part-time student
Gary Crawford, Chair, Anthropology, UTM (Assessor)	Ken Davy, Part-time student
Saswati Deb, Third year student	Joe Desloges, Chair, Geography and Planning (Co-Chair)
Ranpal Dosanjh, Graduate student	Greg Evans, Vice-Dean, Undergraduate, Faculty of Applied Science and Engineering (Assessor)
Jannice Friedman, Graduate student	Barb Funnell, Professor, Medical Genetics (Assessor)
Corey Goldman, Professor, Ecology and Evolutionary Biology	Rick Halpern, Principal, New College
* Ryan Hayes, Second year student	Edith Hillan, Vice-Provost (non-voting Assessor)
Sue Howson, Vice-Dean, Undergraduate Education and Teaching (Co-Chair, July-December 2006)	Greg Jump, Professor, Economics
Anne Lancashire, Vice-Dean, Academic (Co-Chair, January, 2007)	Minna Lee, Third year student
Joan Leishman, University of Toronto Library (Assessor)	Glenn Loney, Assistant Dean/Faculty Registrar and Secretary (Assessor)
Dwayne Miller, Professor, Chemistry and Physics	Razvan Nicolae, Fourth year student
Deepak Ramachandran, Philosophy, Alum	* Julia Reibetanz, Professor, English
* Joe Repka, Professor, Mathematics	Helen Rodd, Professor, Ecology and Evolutionary Biology
Wendy Rotenberg, Professor, Rotman School of Management (Assessor)	John Scherk, Chair, Mathematical and Computer Science, UTSC (Assessor)
Andre Schmid, Chair, East Asian Studies	Cheryl Shook, Registrar, Woodsworth College
Suzanne Stevenson, Vice-Dean, Students (Co-Chair, January-August, 2007)	Sali Tagliamonte, Professor, Linguistics
Sue Varmuza, Professor, Cell and Systems Biology	Sally Walker, Registrar, New College (Invited Participant)
Blair Wheaton, Chair, Sociology	Melissa Williams, Professor, Political Science and Centre for Ethics

* These five committee members were not in favour of endorsing this final report of the CRRC.

A2: Current Status on Degree Requirements and Programs of Study

The Faculty of Arts and Science at the University of Toronto is the largest and, arguably, one of the best undergraduate institutions in Canada. Currently, 22,586 full-time and 3,592 part-time students (2006-07 figures) are enrolled in an extraordinary range of programs of study that result in one of three possible four-year honours degrees: an Honours Bachelor of Arts (H.B.A.), an Honours Bachelor of Science (H.B.Sc.), or a Bachelor of Commerce (B.Com.).⁶ Approximately 5,000 students enroll each year, and 4,000 graduates convocate each summer and fall.

I. Degree Requirements

The degree requirements of the Faculty of Arts and Science provide the standard that is used to determine if a student should receive an honours bachelor degree. Our current degree requirements can be summarized as follows:

- A student must complete at least 20 courses (i.e., the equivalent of 20 full-year courses). At least six courses have to be at the third-year (300) level or higher. No more than 15 courses can have the same three-letter designator.
- A student must, within these 20 courses, complete either a specialist program of study, or a double major (two major programs of study), or a major and two minors.
- The student must complete a distribution requirement: at least one course must be taken in each of the three broad areas of humanities (HUM), social science (SSC), and science (SCI).
- The student must have a cumulative GPA (cGPA) of at least 1.85 (between a C- and a C) to earn an honours degree. (This is the minimum standard of what we would term as “adequate” academic performance, which in our regulations indicates that the student has shown “[s]ome evidence of familiarity with subject matter and some evidence that critical and analytic skills have been developed.”) Students with a cGPA >1.50 and <1.85 can graduate with a B.Sc. or B.A. degree (non-honours); less than 1.5% of our graduates earn the general bachelor degree rather than an honours degree. If the cGPA <1.50, the student is on probation.
- A student must achieve a cGPA of at least 3.50 to be awarded an honours degree “With High Distinction” or a cGPA of 3.20 to 3.49 to receive an honours degree “With Distinction.”

II. Programs of Study

As of Fall 2006, the Faculty of Arts and Science offers 373 Programs of Study (POSTs), which motivate in large measure the 3,492 one- or two-term courses we offer: 180 specialist programs (48%), 105 major programs (28%) and 88 minor programs (24%). Programs are departmental, interdisciplinary, joint, or college-based. There are 58% more programs in 2006 than there were a decade ago (n=255), or a net gain of 118, after accounting for program closures. As compared with 1996, there are relatively fewer programs in humanities (50%, down from 56%) and more in the sciences (31%, up from 26%), but the proportion of specialist, major, and minor programs

⁶ Although the title of the bachelor of commerce degree does not explicitly include the word “honours,” these students are considered by us, and by the province, as honours students.

is similar. There are 48% more courses listed in 2006-07 than in 1996-97, of which approximately 70% are offered in a given year.

A minor program requires 4 full-course equivalents (FCEs), a major program 6-8 FCEs, and a specialist program 9 or more FCEs. The number of required FCEs for a specialist varies as follows: 25% require more than 14 FCEs (HUM 24%, SSC 19%, SCI 25%); 44% require 12 to 14 FCEs; 31% require nine to 11.5 FCEs. As of November 2006, 43% of students who have completed four FCEs (at which point they must enroll in a POST) are enrolled in at least one specialist program, 35% in at least two majors, and 19% in one major and one or two minors.

There are four types of POSTs: 1, 2, 2L, and 3. Type 1 programs have no enrolment limitations and are open to all students (59% of all programs; 86% of HUM programs, 10% of SSC, 46% of SCI). Type 2 have admission requirements consisting of required courses, grades, cGPA, or a combination (19% of all programs; 5% of HUM, 57% of SSC, 18% of SCI). Type 2L and 3 have a limited number of admissions per year in addition to admissions requirements (22% of all programs; 9% of HUM, 32% of SSC, 36% of SCI). For Type 2 and 2L, students apply and enroll on ROSI. For Type 3 programs, which require a supplemental application component, students apply via a Faculty website and enroll on ROSI after receiving an invitation.

A3: Supporting Pedagogical Documents

We found these documents particularly helpful because they report on recent pedagogical thinking and the relation of educational outcomes to an effective citizenry and workforce (references 1 and 5), or summarize findings from comprehensive curriculum reviews from some peer institutions (references 2, 4, 6, 7). We also include the OCAV degree expectation guidelines (reference 3).

1. “College Learning for the New Global Century.” The National Leadership Council for Liberal Education and America’s Promise. Association of American Colleges and Universities, Washington, DC. 2007
(http://www.aacu.org/advocacy/leap/documents/GlobalCentury_final.pdf)
2. “CYCE Report.” Committee on Yale College Education. Yale University, New Haven, CT. April 2003
(<http://www.yale.edu/cyce/report/index.html>)
3. “Guidelines for University Undergraduate Degree Level Expectations.” Ontario Council of Academic Vice-Presidents.
(http://www.uwo.ca/univsec/handbook/general/OCAV_Guidelines_2005.pdf)
4. “New General Education Requirements.” Princeton University. 2000
(<http://www.princeton.edu/pr/pub/gen>)
5. “Reinventing Undergraduate Education: A Blueprint for America’s Research Universities.” The Boyer Commission on Educating Undergraduates in the Research University. 1998
(<http://naples.cc.sunysb.edu/Pres/boyer.nsf/>)
6. “Report of the Committee on the University-Wide Review of Undergraduate Education.” Committee for the University-wide Review of Undergraduate Education. Ohio State University, Columbus, OH. October 2005
(http://oaa.osu.edu/reports/ur_index.php)
7. “Report of the Task Force on General Education.” Harvard University, Faculty of Arts and Sciences. The President and Fellows of Harvard College, Cambridge, Massachusetts. 2007
(<http://www.fas.harvard.edu/~secfas>)
(http://www.fas.harvard.edu/~secfas/General_Education_Final_Report.pdf)

A4: Survey of Competencies and Knowledge Areas at Other Universities

We surveyed Canadian and American institutions, the latter including both public and private universities. Canadian universities typically state only knowledge area requirements, while American institutions include both knowledge area and skills requirements. American universities also tend to have more elaborated systems of knowledge areas. The tables on the following pages summarize our findings.

Canadian Universities: Ontario Bachelor of Arts Programs					
	McMaster University	University of Ottawa	University of Toronto	University of Western Ontario	York University
Required Skills/ Competencies	- Research Methods/Statistics	- Writing (1 HCE) - Reasoning and Critical Thinking (1 HCE)		-Writing (4 HCE, 2 of which must be at an upper year level)	
Knowledge Areas	- Humanities and/or the Department of Religious Studies. (Students enrolled in Religious Studies programs are required to complete six units from the Faculty of Humanities) (2 HCE)	- Literature and Composition (1 HCE) - Moral Reasoning or Fundamental Philosophical Questions or Great Philosophers (1 HCE)	- Humanities (2 HCE) - Social Science (2 HCE) - Science (2 HCE)	- Art/Humanities, Social Science, Science (2 HCE from two of the three categories) - Art/Humanities, Social Science, Science (2 HCE at an upper year level in two of the three categories)	- First year Humanities or Social Science (3 HCE) - First year Science (2 HCE) - Second year Humanities or Social Science (oppose to area taken in first year) (3 HCE) - Concurrent with the requirements above, students need 2 HCE from each of the following areas: Area I: English, French Studies, History, Humanities, Languages, Linguistics, Philosophy, Writing. Area II: Anthropology, Criminology, Economics, Geography, Political Science, Psychology, Social Science, Sociology.

Canadian Universities: Non- Ontario Bachelor of Arts Programs					
	Dalhousie University	McGill University	University of Alberta	University of British Columbia	University of Saskatchewan
Required Skills/ Competencies	- Foreign Language (2 HCE) - Writing (2 HCE)		- Foreign Language (2 HCE)	- Foreign Language (2 HCE)	- Foreign Language (2 HCE)
Knowledge Areas	- Humanities (2 HCE) - Social Science (2 HCE) - Science (2 HCE)	- Social Sciences, Humanities, Languages, and Mathematics & Science (2 HCE in three of the four categories). A maximum of 6 HCE may be chosen from any one category but no more than 4 HCE may be taken in one department.	- Fine Arts (2 HCE) - Culture (2 HCE) - English (2 HCE) - Social Science (2 HCE) - Science (2 HCE)	- Literature (2 HCE) - English (2 HCE) - Science (2 HCE)	- Humanities, Social Science, Fine Arts (2 HCE outside of your major in one of the three categories). - Natural Science (2 HCE)

Canadian Universities: Ontario Bachelor of Science Programs					
	McMaster University	University of Ottawa	University of Toronto	University of Western Ontario	York University
Required Skills/ Competencies				-Writing (4 HCE, 2 of which must be at an upper year level)	
Knowledge Areas			- Humanities (2 HCE) - Social Science (2 HCE) - Science (2 HCE)	- Art/Humanities, Social Science, Science (2 HCE from two of the three categories) - Art/Humanities, Social Science, Science (2 HCE at an upper year level in two of the three categories)	- Arts/Humanities, and Social Science (4 HCE from two different areas of study within each category).

Canadian Universities: Non-Ontario Bachelor of Science Programs					
	Dalhousie University	McGill University	University of Alberta	University of British Columbia	University of Saskatchewan
Required Skills/ Competencies	- Writing (2 HCE)				- Writing (2 HCE)
Knowledge Areas	- Language or Humanities (2 HCE) - Social Science (2 HCE) - Life Science or Physical Science (2 HCE) - Mathematics (2 HCE)	- Science (4 HCE) - Math or Science (additional 1 HCE) - Mathematics (2 HCE)	- Arts (6 HCE) - Science (24 HCE)	- English (2 HCE) - Arts (6 HCE) - Science (24 HCE)	- Fine Arts, Humanities, Social Science or Language (2 HCE in one of the four categories) - Social Science (2 HCE) - Mathematics or Statistics (2 HCE)

Public US Universities					
	William Mary	Rutgers	Berkeley	Ohio State	Michigan
Required Skills/Competencies	<ul style="list-style-type: none"> -Foreign Language -Writing -Digital Information Literacy -Computing -Seminar 	<ul style="list-style-type: none"> -Writing (2 HCE) -Quantitative Reasoning (2 HCE) 	<ul style="list-style-type: none"> -Entry-level Writing -Reading and Comprehension -Quantitative Reasoning -Foreign Language 	<ul style="list-style-type: none"> -Writing -Foreign Language 	<ul style="list-style-type: none"> -Writing -Quantitative Reasoning -Foreign Language
Knowledge Areas	<ul style="list-style-type: none"> -Math/Quantitative Reasoning -Physical science -Biological science -Social Science (2 HCE) -Culture/History (3 HCE) -Literature/Arts -Performing Arts -Philosophy/Religion 	<ul style="list-style-type: none"> - Natural Science (2 HCE) - Social Science and Humanities (6 HCE) - Diversity (1 HCE) - Global Awareness (1 HCE) 	<ul style="list-style-type: none"> -Arts/Literature -Biological Science -Physical Science -Social Science -History -International studies -Philosophy/Values 	<ul style="list-style-type: none"> -Quantitative/Logic -Natural Science -Social Science -Arts/Humanities -Diversity 	<ul style="list-style-type: none"> -Race/Ethnicity -Natural science -Social Science -Humanities -Math/Symbolic -Creative

Private US Universities			
	Princeton	Harvard	Alverno
Required Skills/Competencies	<ul style="list-style-type: none"> -Writing -Foreign Language 	<ul style="list-style-type: none"> -Written/Oral -Foreign Language -Analytical reasoning 	<ul style="list-style-type: none"> -Communications -Analysis -Problem Solving -Valuing -Social Interactions -Global Perspective -Citizenship -Aesthetic
Knowledge Areas	<ul style="list-style-type: none"> -Epistemology/Cognition -Ethical and Moral Thought -Historical Analysis -Literature/Arts (2 HCE) -Quantitative Reasoning -Science/Technology (2 HCE) -Social Analysis (2 HCE) 	<ul style="list-style-type: none"> -Cultural -Ethics -US -World -Reasoning/Faith -Physical Science -Life Science 	

A5: Competencies in the Degree Learning Objectives [Recommendation 1b]

The CRRC devoted significant time to considering competencies critical to learning and applying knowledge. These discussions first arose out of an examination of common degree requirements across Arts and Science, and then focused more specifically on the essential learning outcomes that might reasonably be expected of all graduates regardless of their program(s) of study. As noted in the body of the report, these competencies extend well beyond basic empirical knowledge and mastery of an academic field: they are sophisticated reasoning skills that will support a high level of responsible functioning in the world beyond the university. We elaborated the following list as a guideline for developing a detailed definition of the competencies as part of the implementation process.

1. Critical and Creative Thinking
 - critical reading and analysis
 - posing questions and hypotheses
 - gathering, evaluating, and reasoning about evidence
 - problem-solving and developing and applying solutions
2. Communication
 - effective written, oral, and visual presentation
 - organizing ideas into logical arguments supported by evidence
 - aiming appropriately for different audiences and contexts
3. Information Literacy
 - locating, evaluating, assimilating, and creating relevant information
 - making use of appropriate tools and technology in these tasks
 - effectively combining different tools and variable sorts of information
4. Quantitative Reasoning
 - numerical facility: manipulation, understanding, and interpretation of numerical information
 - statistical inference: inference from data
 - ability to integrate quantitative and qualitative data and reasoning
5. Ethical Thinking and Decision-Making
 - identifying different value systems and grasping their impact on thought and action
 - understanding the processes of making decisions and taking action in a manner that reflects consideration of ethical factors and social responsibility

The teaching of ethical decision-making is not to be confused with the promotion of a particular political stance, religion, or other value system. The intent is to encourage students to consider the impact of their actions in applying the knowledge that they acquire here and in the future, and to equip students with the skills needed to act ethically and responsibly.

While the committee worked collectively to outline the five competencies listed above, several members expressed reservations about the universal applicability of numbers four (Quantitative Reasoning) and five (Ethical Thinking and Decision Making). Some colleagues believed that

humanities disciplines, in particular, could teach quantitative reasoning in only a partial way, and that a mandate might lead to curricular distortion within specific academic fields. Other colleagues voiced similar concerns about the difficulty many of the scientific disciplines would encounter if forced to incorporate ethical decision-making into their curricula. However, it was noted by others, as mentioned in the body of the report, that competencies are likely to be achieved in breadth courses in these scenarios.

Despite these differences of opinion, the CRRC united around the firm belief that each unit within the Faculty of Arts & Science should make a good faith effort to think through its present and future curricular offerings with these five competencies in mind. From a general pedagogical standpoint, the competencies are best developed *within* specific areas of academic concentration—these may be single departments, common combinations of majors, minors, and specialists, or more general pathways through a number of cognate disciplines. Keenly aware of the challenge of implementation, the committee agreed that the achievement of the competencies should be a degree rather than a program requirement.

A6: Some Options for Defining the Knowledge Area Requirement [Recommendation 1c(i)]

With regard to the distribution requirement in Recommendation 1c(i), the CRRC discussed two options that could serve as starting points for the implementation committee's consideration. Neither option received majority support in the committee, where many felt that there was insufficient time to consider the full implications of these proposals.

Option 1: This option is motivated by the view that the goal of a distribution requirement is to ensure exposure to particular knowledge areas identified as constituting appropriate education as a "global citizen". We were guided in the selection of the areas by an intent to elaborate and give structure to our distribution requirement, and by a desire to reflect current pedagogical research and experience (see Appendices A3 and A4). Familiarity with the knowledge areas is intended to create: knowledgeable scholars who can examine their area(s) of concentration from a position of awareness of a wide range of views and methodologies; effective employees and scholars who can draw on differing perspectives and approaches to problem-solving; and global citizens who can critically evaluate and participate in the conditions of a rapidly changing world.

Students would be required to take .5 FCE in each of the following proposed knowledge areas, for a total of 3 FCEs (comparable to the amount of our current distribution requirement):

1. Arts and Literatures
 - an appreciation for cultural products and development of aesthetic understanding through exposure to noteworthy literary and/or artistic works
2. Societies and Cultures of the Global North
 - an understanding of one or more of the many cultures and languages that have shaped societies of the Global North, including, but not exclusive to, theories and knowledge of history in that particular cultural context
3. Societies and Cultures of the Global South
 - an understanding of one or more of the many societies, cultures, and languages that have shaped the Global South, including, but not exclusive to, theories and knowledge of history in that particular cultural context
4. The Individual and Society
 - familiarity with theories of the person, the mind, and the human condition, and of social structures and social organizations; and with the methods used for investigating them
5. Life Sciences [name to be modified]
 - a grasp of the basic models and theories of the biological world and the ability to make and evaluate observations relating to them
6. Mathematical and Physical Sciences [name to be modified]
 - a grasp of the basic mathematical models and theories of the physical world, and the ability to apply them and to make and evaluate observations relating to them

Note that these knowledge areas are orthogonal to the broad methodological categories of humanities, social science, and science, and the expectation is that many units would offer courses across a number of these knowledge areas, and that some or even many courses would be multiply categorized. Thus each course would be labelled according to its content as satisfying one or more of the areas. Each student would be required to take one HCE in

each of the six areas. As with the current INX 199 courses, a student would have to decide which area they wanted a multiply-designated course to satisfy. As with our current distribution requirement, a course in a student's POSSt(s) could satisfy a knowledge area requirement. (Note that the precise names and definitions of the areas would need to be carefully thought out if the implementation committee were to pursue this option.)

This option received much support from within the CRRC and across the Faculty in identifying important areas of knowledge that provide more meaningful structure to our distribution requirement. Many people liked the general approach but wanted to see acknowledgement of the central role of knowledge of Canada in our students' lives, and of the importance of immigration and transnationalism in defining areas 2 and 3. However, a number of concerns were raised: the difficulty of defining the knowledge areas, especially areas 2 and 3, in a way that would satisfy our intentions; the potential for much overlap among knowledge areas, making it difficult to categorize courses without simply placing some in numerous categories; and the difficulty in determining a set of categories that would provide a finer-grained structuring of knowledge expectations than our current broad areas but that would be equally "timeless".

Option 2: This option is guided by the view that the goal of a distribution requirement is to ensure exposure to general knowledge and methodological areas.

Three knowledge areas are specified either as our current distribution areas (humanities, social science, and science), or as other broad categories to be determined. Each course would be labelled according to its content as satisfying one of the three areas. Each student would be required to take 2 HCEs in each of the three areas; the 2 HCEs within an area must have different designators. In addition, each student would be required to take 1 HCE with a transnational or global scope, or (as an alternative statement of the requirement) that provides exposure to the Global South.

This option received support in the CRRC both for its simplicity and because some felt that six knowledge areas is too fine-grained for categorizing our courses and creates false divisions. Others believed this option failed to adequately address the issue of giving better guidance to our students on the kinds of knowledge they should be exposed to in a breadth requirement.

Both options are intended to be more content-driven than our current distribution requirement—i.e., the goal is to specify the distribution requirement in terms of knowledge content of courses rather than in terms of broad methodological categories. Option 1 provides more structure and ensures greater depth than our current distribution requirement, but gives the student less flexibility of choice. Option 2 has more breadth than our current distribution requirement with somewhat less flexibility; compared to Option 1, it has more flexibility but not as much structured guidance in achieving that breadth.

It is worth noting that we had extensive discussions on how best to ensure the cross-cultural learning (as in knowledge areas 2 and 3 of Option 1, and the "global" requirement of Option 2) that is necessary to prepare students as global citizens. Global knowledge requires awareness of different forms of knowledge, often based on different epistemological or ontological assumptions. One mechanism for achieving this is the commitment of the Faculty to increased international experiences, which the committee wholeheartedly endorses. However, we must also guarantee exposure to international issues within a student's curricular choices in the Faculty,

and these requirements are intended to ensure that. The goal is to expose students to the different views, and even different kinds of questions that arise, when topics are examined from the perspective of different cultures and languages of the world.

Given the complicated history of Eurocentrism in North American academia, we avoided the most troubling terms for knowledge areas 2 and 3 of Option 1—specifically “West” and “non-West.” Yet it is perhaps ironic that we settled on a dichotomy that reinforces the very Eurocentric categories beyond which we hope to move the curriculum. In an ideal situation, there would be a sufficiently diverse curriculum that we would not need to require that students be exposed to subjects organized according to such categories (see Recommendation 13). Indeed, we note that many current courses in the Faculty move beyond these divisions and even question the categories themselves. The aim is to expose our students to ever-increasing opportunities to involve themselves in more globally constituted learning experiences, both at home and abroad.

In elaborating the two options above, we have focused on the knowledge areas to which students should be exposed. However, the further deliberation by the implementation committee should bear in mind that another goal of breadth courses is to satisfy competency requirements that students do not satisfy as part of their POST(s), as noted in the discussion of Recommendations 1b and 1c(ii).

Finally, we should note that the specification of the breadth requirements in both options in terms of half-courses is also a result of input to the committee that emphasized the desirability and importance of making more half-courses available to students for satisfying breadth (see Recommendation 1c(ii), and also Recommendation 17 for discussion on the benefits of increasing the H course offerings in general). However, the committee identified the following issue: these options ensure a broader exposure for students, but at a cost of some depth. It is common for students to satisfy our current distribution requirement with a Y course or two H courses in the same unit, but it would be less usual for students to have multiple courses from one unit in either of the above options.

A7: Strategies for Small-Class Experiences in First Year **[Recommendation 21]**

Two proposals for small-class experiences to augment the current 199 offerings were given particular attention in the CRRC. In both cases, it was suggested that the design of these courses would allow them to reach about half of the incoming first-year students. With 199s currently available to serve about half, this would allow us to move toward a situation in which every first-year student would have the opportunity (and perhaps a requirement) for a small-class experience. Both these proposals also have the benefit of encouraging highly engaging breadth courses for our first-year students.

- I. One model is for a set of 100-level breadth courses to be offered each year, one in each area of the current distribution requirement plus one interdisciplinary course (i.e., HUM, SSC, SCI, or INX). Each course would be offered in one or more sections with a maximum enrolment per section of 150 students. Each of the four courses would have two one-hour classes per week: a lecture (one hour) and a seminar (one hour), with the seminar meeting many of the educational goals outlined in this document for first-year small-class experiences.

Each course would be designed for students in all areas (the HUM course would be applicable to science and social science students, the SCI course to humanities and social-science students, the SSC course to humanities and science students, and INX to all students); this would presumably encourage most, if not all, students to register for courses in areas other than their own. The departments and college program units in each of the areas would be responsible for designing their own courses and would provide the lecturers for the course sections.

A key feature of the new courses would be the special organization of the seminars. The proposal calls for these to be college-based: each student in each course would enrol in a seminar for the students of his or her college. Each of the seven St. George colleges would offer a sufficient number of seminars to accommodate its first-year students who were enrolled in the courses. The seminars would be taught by specially appointed Teaching Fellows; these individuals could be faculty, senior experienced graduate students, or postdoctoral fellows.

The seminars in the proposed courses would resemble 199s in that they would encourage “the development of critical thinking, writing skills, and oral presentation and research methods.” We believe that the seminars in the new courses should, in addition, encourage the development of basic numeracy skills.

- II. Another model is the introduction of a new series of 100-level lecture courses that would be team-taught by an interdisciplinary staff of “star-quality” faculty, and would address “big questions” in the human condition. They could be large lecture courses (300+ students) and thus reach a large proportion of our incoming students, with the small-class experience achieved through the use of tutorial/discussion sections, possibly formed around college membership of the students. Ideally, each new lecture course would include faculty from the humanities, social sciences, and sciences to ensure intellectual and methodological diversity within a single course. It would also be desirable for each course to include some element of social diversity (culture, “race,” gender/sexuality) as a lens through which to understand the

subject; where appropriate, racism, sexism, classism, heterosexism, “Eurocentrism,” and other forms of social bias could be directly addressed.

Such courses could take as their subject matter one of a limited number of the central categories of human experience, which lend themselves to interdisciplinary study. A course on “Sex,” for example, might include a component on the biology of human sexuality, perhaps in comparative zoological perspective; a component on the central role of sexuality in object-relations theory in psychology; a component contrasting Christian understandings of the morality of sexuality with, e.g., Buddhist understandings; and a component on the global sexual division of labour and its impact on the distribution of economic and political power. A course on “Land” might have a component on physical geography; a component on the contrast between Western and Indigenous understandings of the human relationship to the land and to nature; a component on environmental pollution; and a component on the history of property within Western traditions of political and legal philosophy. A course on “Time” might include a component on the physics of time and on the history of science in its measurement of time; a component on Marcel Proust’s *Remembrance of Things Past*; and a component on the acceleration of social processes under conditions of modernity and its impact on social relations when traditional societies are colonized by modern economic powers and institutions.

To encourage these new 100-level courses, incentives could be offered to encourage teaching units to commit excellent instructors to them, with an open call to all departments and programs for proposals. A liaison could be appointed to bring together faculty from various disciplines that could contribute to a course from multiple perspectives, and to assist in the development of pedagogical strategies for interdisciplinary teaching. The Office of Teaching Advancement might be approached to facilitate both the creation and the implementation of the program. These courses could also serve to showcase a diversity of teaching and evaluation methodologies. For the tutorials, it would be important to have teaching assistants trained particularly in leading discussions and teaching fundamental skills in order to meet our goals for small-class experiences for first-year students.