University of Waterloo  
SENATE  
Notice of Meeting

Date: Monday 15 April 2013  
Time: 3:30 p.m.  
Place: Needles Hall, Room 3001

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<td>Consent Agenda</td>
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<td><strong>Motion:</strong> To approve or receive for information by consent items 1-4 below.</td>
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<td>Minutes of the 25 March 2013 Meeting</td>
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<td>Reports from Committees and Councils</td>
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<td>b.</td>
<td>Honorary Degrees Committee [news release at places]</td>
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<td>Reports from the Faculties and Renison University College</td>
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Regular Agenda

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<td>Business Arising from the Minutes</td>
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<td>Reports from Committees and Councils</td>
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<td>b. Graduate &amp; Research Council</td>
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<td>Presentations</td>
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<tr>
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<td>Research: Professor Keith Hipel, Systems Design Engineering</td>
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<td>b. Federation of Students: President Andrew Noble</td>
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<td>8. Report of the President</td>
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<td>9. Q &amp; A Period with the President</td>
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<td>a.</td>
<td>Report of the Task Force on Support for English Language Competency Development at the University of Waterloo</td>
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<td>5:05</td>
<td>11. Report of the Vice-President, University Research</td>
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<td>12. Other Business</td>
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CONFIDENTIAL SESSION

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<td>5:20</td>
<td>13. Minutes of the 25 March 2013 Meeting</td>
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<td>15. Report of the Nominating Committee for Honorary Degrees</td>
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JLA:tad  
5 April 2013  
Secretary of the University

Logan Atkinson  
5 April 2013  
Secretary of the University
University of Waterloo
SENATE
Minutes of the Monday 25 March 2013 Meeting


Guests: Mario Coniglio, Erin Sargeant Greenwood, Peggy Jarvie, Cathy Newell Kelly, Ellsworth LeDrew, Ellen Réthoré, Daniela Seskar-Hencic, Bud Walker, Dave Wallace

Secretariat: Logan Atkinson, Tracy Dietrich


*regrets

Organization of Meeting: Feridun Hamdullahpur, chair of Senate, took the chair, and Logan Atkinson, secretary of Senate, acted as secretary. Atkinson advised that due notice of the meeting had been given, a quorum was present, and the meeting was properly constituted.

OPEN SESSION

Consent Agenda
Senate heard a motion to approve or receive for information by consent items 1-5 below.

1. MINUTES OF THE 25 FEBRUARY 2013 MEETING
Senate approved the minutes of the meeting as distributed.

2. REPORT FROM GRADUATE & RESEARCH COUNCIL
Senate received this report for information.

3. REPORT OF THE PRESIDENT
Recognition and Commendation. Senate received this report for information.

4. REPORTS FROM THE FACULTIES
Senate received these reports for information.

5. OTHER BUSINESS
Report from the COU Academic Colleague. Senate received this report for information.

Andrey and Porreca. Carried.
Regular Agenda

6. BUSINESS ARISING FROM THE MINUTES
   Centre for Extended Learning. Cathy Newell Kelly, director of the Centre for Extended Learning, reported on open online learning, advising that at the moment our courses are closed. Discussions are continuing with Coursera to possibly become more heavily involved in open online learning. She also reported on the possibility of the university leading an online learning consortium as encouraged by the provincial government.

7. REPORTS FROM COMMITTEES AND COUNCILS
   Amit & Meena Chakma Awards for Exceptional Teaching by a Students Committee [report at senators’ places]. Following an explanation of the criteria on which nominees are assessed, Sue Horton, chair of the committee, presented the names of this year’s recipients to Senate: Jonathan Eyolfson, electrical & computer engineering; Kyra Jones, biology; Alex Shum, applied mathematics; Shuntaro Yamagishi, pure mathematics. A round of applause followed.

   Distinguished Teacher Awards Committee [report at senators’ places]. Mario Coniglio, associate vice-president, academic, provided background and context to these awards and presented the names of this year’s recipients to Senate: Kelly Anthony, public health & health systems; Jeff Casello, planning/civil & environmental engineering; Duane Cronin, mechanical & mechatronics engineering; Richard Ennis, psychology. A round of applause followed.

   Graduate & Research Council
   - Master of Arts in Public Issues Anthropology, Department of Anthropology. Senate heard a motion to approve the establishment of a Master of Arts in Public Issues Anthropology as described in the report.


   - Collaborative Research Master and Doctoral Programs in Integrated Water Management, Departments of Applied Mathematics, Biology, Civil & Environmental Engineering, Earth & Environmental Sciences, Environment & Resources Studies, Geography & Environmental Management and the School of Environment, Enterprise & Development.

       Senate heard a motion to approve the establishment of collaborative research master and doctoral programs in Integrated Water Management as described in the report.

       Horton and Porreca. Carried.

   University Appointments Review Committee. Ellsworth LeDrew, chair of the committee, referred senators to the committee’s report for 2011-12 and noted that during the reporting period the committee reviewed 87 files, 32 women and 55 men. He acknowledged the work of members of the committee and thanked them for their dedication.

   Parry asked about the possible impact of a review of best practices for hiring, especially with respect to gender balance in hiring decisions, and LeDrew confirmed that advantages can be realized through exploring and possibly implementing some changes in this regard.

   Porreca pointed out that, when arts hires are eliminated from the report, the gender ratio among new hires is adversely affected, and LeDrew commented that this phenomenon changes year over year.

   There was some discussion on the reasons why candidates refuse offers, and it was observed that salary is generally not an issue. Rather, decisions appear to be made idiosyncratically.
8. RESEARCH PRESENTATION

Slides used in the presentation may be seen at https://uwaterloo.ca/secretariat/sites/ca.secretariat/files/uploads/files/research_1.pdf

9. REPORT OF THE PRESIDENT
The president presented a broad report covering a number of items.

The president spoke to the unfortunate interruption of the Stephen Woodworth presentation and the infringement on freedom of expression that the interruption represented.

The uncertainty respecting the tuition framework was discussed in the context of the university’s budget process and the challenges that poses for coming fiscal years. The university is modeling the budget based on a freeze, on an increase tied to inflation, and on a 3% increase. The implications of these changes to the tuition framework are significant and will challenge the university in meeting its strategic objectives and continuing to deliver its high standard of education. The president noted that these changes are in addition to the expected changes in the provincial grant, and the international student levy.

The federal budget did reinstate some funding for the tri-councils. At the request of the president, Dixon summarized some additional aspects of the federal budget having an impact on post-secondary education, including in particular some new funding for Genome Canada and some encouragement for incubators and start-ups, particularly relevant for this university.

On the strategic planning process, the president advised that, under the leadership of McBoyle, a working group has been established to integrate the ideas generated in the mid-cycle review process of the Sixth Decade Plan. He summarized the major headings that will form the framework for a restated strategic plan for the university, although things remain as a work-in-progress. Final consultations will take place throughout the spring, with a view to approval by Senate and the Board of Governors before the end of June.

Slides used in the presentation may be seen at https://uwaterloo.ca/secretariat/sites/ca.secretariat/files/uploads/files/president_2.pdf

10. Q&A PERIOD WITH THE PRESIDENT
The president answered questions on the strategic planning process.

He elaborated on the consultation process to be undertaken throughout the spring on the emerging strategic plan, and discussed the relationship between the planning process and anticipated funding cuts, in particular through the possibility of funding opportunities outside the conventional grant from government and tuition.

On the multi-year budget plan, and in response to a question to the president, McBoyle advised that a steering committee has been established to move this matter forward. Discussion will focus first on the principles that will lie behind the budget plan, prior to discussing particular impacts of budget process changes. The process is anticipated to take about a year, and it will ultimately be integrated with results from the strategic enrolment management initiative.

The president advised on discussions that take place routinely among university presidents on the challenges faced by the sector in promoting its social value, and on the support provided by the
Association of Universities and Colleges of Canada, and the Council of Ontario Universities. He assured Senate that our Board of Governors is very supportive of the mission of the university. In response to a question to the president, McBoyle advised that a 3% tuition cap will necessitate some cuts across the university, although the precise details have not yet been settled.

The daycare facility construction is underway, and legal agreements to consolidate the daycares are currently under consideration.

Some discussion was held on the relationship among philanthropy, the age of the institution, partnerships with industry, and the challenges anticipated in meeting the university’s budget requirements.

11. REPORT OF THE VICE-PRESIDENT, ACADEMIC & PROVOST


Porreca introduced the chair of the working group, David DeVidi. DeVidi thanked the members of the working group and the units providing staff support. There is concern that the length of and detail in the report will delay its implementation, but the working group made this report as thorough as they could. Three criteria were central: affordability, practicality, importance. The report focuses on faculty issues, although the working group recognizes that staff and students have challenges on work life balance as well. High level achievement in teaching and research depends centrally on faculty, and to be a superior institution we require faculty to work very hard. Work life balance issues, then, must be addressed to ensure that faculty remain motivated to do their very best work. These questions are relevant to recruitment strategies, young faculty, and more senior faculty. Further, the quality of management makes a tremendous difference in the way faculty views their work, meaning the typical career path for administrative service must be carefully considered. The question of how administrative service is valued and rewarded must be reviewed, for example, and its connection to issues of gender equity must be considered.

McBoyle advised that some recommendations had been referred to the deans, and that some others will be considered in the context of wider policy change and possible budgetary adjustments. Other recommendations will be considered at Faculty Relations Committee to assign priorities and consider implementation strategies.

University Professor Designation. The provost provided background to the designation and announced that Douglas Stinson, computer science, has been awarded the honour this year.

12. REPORT OF THE VICE-PRESIDENT, UNIVERSITY RESEARCH

Dixon reported on compliance with the tri-agency requirements of university supervision of financial management, in response to an audit on this subject from 2009. A follow up review has indicated strong improvement and a rating of “satisfactory” in the university’s performance in this respect.

Some of the research funding the university holds from select American funding agencies will be cut in the coming year based on developments in the funding model in the United States.

Notice of NSERC Discovery Grant results has been distributed and letters will be sent soon to acknowledge successful applications. The university’s success rate in this respect continues to be steady, although the size of the funding in aggregate has increased.
Dixon reported as well on new international funding coming to the university from six different sources, and on successful awards to be made to university faculty under the CFI-New Initiatives Fund and the CFI-Leading Edge Fund.

13. REPORT OF THE DEAN OF MATHEMATICS
Changes to the Constitution of the Mathematics Faculty Council. Senate heard a motion to approve the recommended changes to the Constitution of the Mathematics Faculty Council.

Goulden and Hunt. Carried.

14. REPORT OF THE UNIVERSITY LIBRARIAN
Haslett spoke briefly to certain initiatives in the university library relating to electronic and related holdings including e-books and e-data, and aspects of the evolving, 21st century library, among others. He summarized the four strategic directions of the library, and discussed next steps in the implementation of the library’s strategic plan.

In response to a question, Haslett summarized plans with respect to space demands for the library.

Slides used in the university librarian’s presentation can be seen here: https://uwaterloo.ca/secretariat/sites/ca.secretariat/files/uploads/files/librarian_1.pdf

15. OTHER BUSINESS
There was no other business.

Senate convened in Confidential Session.
Senate Graduate & Research Council met on 11 February 2013 and 4 March 2013 and agreed to forward the following items to Senate for information. These items are recommended for inclusion in the consent agenda.

Further details are available at: www.adm.uwaterloo.ca/infosec/Committees/senate/sgrc.htm

FOR INFORMATION

PROGRESS REPORT – AUGMENTED REVIEW
Senate Graduate & Research Council met on 11 February 2013 and Senate Undergraduate Council met on 12 February 2013, and agreed to jointly forward the following item to Senate for information.

Faculty of Arts – Department of Philosophy Augmented Review: Two Year Progress Report
Both councils received two year progress reports following the augmented review of the Department of Philosophy. The review included: recommendations on faculty and staffing complement; improvements related to course and degree offerings; distribution of teaching load and administrative workload; services to undergraduate and graduate students; and interuniversity relationships. See attachment 1.

In response to the progress reports, both councils have expressed that significant progress has been made toward carrying out the recommendations of the review, and that the progress to date is satisfactory.

CURRICULAR MODIFICATIONS
On behalf of Senate, Council reviewed and approved curricular modifications and minor program revisions for the Faculties of Arts (global governance; master of digital experience; sociology), and Mathematics (combinatorics & optimization; computer science; master’s mathematics for teachers).

SCHOLARSHIPS AND AWARDS
On behalf of Senate, Council approved the creation of the Three Minute Thesis (3MT) Competition: First Place Award and Runner Up Award.

NEW AND CONTINUING MEMBERSHIPS
On behalf of Senate, Council approved the membership recommendation for the Clinic Research Ethics Committee and the Human Research Ethics Committee.

Sue Horton      George Dixon
Associate Provost, Graduate Studies    Vice President, University Research
Two Year Progress Report for the Department of Philosophy

The Department’s undergraduate and OCGS reports for the augmented review were completed in July 2009. A site visit took place from May 10-12, 2010. The assessors’ report was received in June, and the Department’s response to the report submitted to the Associate Provost for Graduate Studies on July 6, 2010. This material was considered in due course by Senate. This report provides an update on developments since then.

Context:

At the time of the augmented review the Department was in a period of transition, and it continues to be so. The previous 2002 OCGS review had been critical of the structure of the graduate programs, in particular because of their long completion times and the Department’s antecedent failure to consider OCGS advice sufficiently seriously. In response to this OCGS criticism, the graduate programs were completely re-designed in 2003-04. The membership in the department has also changed. The department made no junior hires of permanent faculty between 1972 and 1996, and only one between 1972 and 2000. Starting in 2001, new faculty began to be hired, primarily as replacements for retirements. By 2009 only three faculty members remained who were in the department before 1996. The third major transition is that the undergraduate program was re-designed in preparation for the augmented review, and in light of the changing faculty complement.

The 2010 assessors pronounced that their “overall assessment is extremely favourable.” The structural changes to the graduate programs were found to be “very well conceived, pedagogically excellent, and well liked by the students,” and they found that “an impressive amount of thought has gone into improving the [graduate programs] in recent years.” The dramatic improvement in completion times for graduate students was praised. They described the new undergraduate curriculum as “well designed” and as the result of a careful and consultative process, and praised the “innovative use of technology while maintaining the traditional methodology of lecture/discussions and paper writing.” In particular, they praised the Department’s commitment to enhancing its DE (now EL) offerings, and urged the University to invest the necessary resources in the success of that endeavor.

At the time of the review, the Department had only 10.5 full time faculty members, but the reviewers judged the quality of the faculty as “extremely high,” the level of research accomplishment “impressive,” and they noted the “very high level of commitment to excellence in the management and delivery of the graduate programs.” They praised the “cutting edge work of an inter- or multi-disciplinary nature” in the Department, and the significant service contributions of Department members outside the Department. They note that a department of this size offering the range of programs offered by Philosophy is likely to be stretched very thin, and comment on the uneven distribution of graduate supervision (a problem they thought might resolve itself as newer faculty gain experience and profile) and of service tasks.

The assessors also made a number of specific recommendations. We will consider the recommendations for the graduate and undergraduate programs in turn.
Graduate recommendations:

1. Since the Department presently has the bare minimum of faculty members to deliver programs of this quality, even given the recent hire and the addition of a Chair in Scientific and Technological Literacy, the hiring that was deferred from 2009-10 should be made within the next two years. We consider this appointment “mission critical” to use UW terminology. The University should also seriously consider creating an additional position in Applied Ethics housed in Philosophy, which would strengthen the graduate program, while addressing important university-wide teaching needs.

Since the report, the Department has been able to replace one faculty member using the mentioned “deferred” position, hiring an Applied Ethicist, while two named chairs, one in Scientific and Technological Literacy and one in Science and Society, have been added to the Department. These named chairs have greatly enhanced an existing research strength in Philosophy of Science. The Applied Ethicist works in areas likely to be of interest in many areas of campus, including Global Health Ethics and Disability Studies. We note that the case for an additional position in Applied Ethics remains as strong as it was when the assessors made it, but with the looming retirement of one of only two historians of philosophy in the Department, the need to replace that expertise is more pressing and more strategically important to the Faculty of Arts.

2. The Department should consider whether to reintroduce Epistemology into the new field names.

The addition of John Turri to the faculty complement has indeed made Epistemology a more important area of research and graduate student education at Waterloo. The Department intends to address the issue of re-naming our fields in light of all the recent personnel changes as part of our current efforts to increase enrolment in the PhD program.

3. Care should be taken that administrative and supervisory duties are equitably distributed in the Department and do not fall excessively to junior and early-to-mid-career faculty members. Those junior or mid-career faculty members who have carried a very high service load in recent years should be rewarded with an additional ad hoc teaching reduction at some time in the near future.

It is important that such steps be taken to ensure the long term academic health of the Department and its programs.

With respect to supervisory loads, the problem of uneven distribution has not disappeared, but it has lessened as some recently hired faculty members have become popular supervisors and committee members. As yet the Department has not decided to implement measures to ensure more even distribution, but will continue to monitor the issue.

The problem of uneven distribution of service duties in the Department is proving harder to address. One complication is that some senior members of the department have not taken on significant internal service roles, such as Associate Chair, because of long-term commitments to leadership roles in programs external to the department---one result of which is that others in
the Philosophy Department are carrying an extra load in order to service interdisciplinary programs in which they do not participate. Plausibly the issue is an institutional one, in that other departments involved in those programs do not adequately share the load of administering them. The Department has not yet been able to carry through on the recommendation to provide extra teaching reductions to the junior and mid-career faculty members identified by the assessors as having carried very large service loads to the benefit of the Department and the University. The Department’s teaching budget has simply been too constrained to be able to afford to address this, and the Department will continue to find it difficult to do so without financial assistance from the Faculty or the University.

4. The Department should create a placement officer, other than the Graduate Officer, and formalize practices to prepare doctoral students for the job market. Information about the Department’s placement record should be included on its web-site.

As noted in our original response to the assessors in July 2010, it is not clear that assigning the job of Placement Officer to someone besides the Graduate Officer is the best response to the problem identified by the assessors given the difficulty the Department has filling all its service roles. We will implement this recommendation as more newly arrived colleagues become available for significant service tasks. Meanwhile, the Department has become much more systematic about preparing our students for the academic job market. For those nearing completion, we hold practice job talks, practice interviews, and so on. The pro-seminar includes sessions every term addressed to important aspects of professionalization as academics. (As noted in July 2010, we are putting placement information on the web site.)

The Department is now also being much more pro-active about preparing students in our graduate programs for careers outside academia. Our graduates get good jobs, whether or not they have academic careers. We have begun the process of using our alumni as a resource to help us ensure that our graduates know what they need to know to fashion successful careers when they graduate, as well as a source of mentors and connections.

5. The Department should diversify the duties required of teaching assistants, e.g. by introducing tutorial sections or discussion groups in large undergraduate classes. TA duties should be formally agreed between Instructors and TAs at the beginning of each class and codified in a contract.

6. The Department should provide counseling about course design and management for doctoral students appointed as instructors.

The Department reported on its efforts in connection with these recommendations in our July 2010 response. The additional developments since then are that, after a Department vote in support of doing so, we recently signed on to a pilot project for term-by-term contracts between faculty members and TAs that may soon roll out across campus. In Winter 2013 we are experimenting with a “teaching squares” process for improving teaching among faculty, which if it is successful will be extended to graduate students in coming terms. The Department’s
Extended Learning Coordinator has also implemented mandatory training sessions for instructors and graders for on-line courses. While it is hard to infer causation, it is worth noting that average student evaluations for graduate students who teach their own courses for the Department have increased significantly since 2010.

7. Steps should be taken to repair the relationship between the UW Department and the Department at St. Jerome’s University. It would be desirable for the main campus department to appoint a senior faculty member as a liaison officer to encourage constructive interaction with colleagues at St. Jerome’s.

In our July 2010 report, we noted that we think the assessors misdiagnose the source of the problems between the Waterloo Department and the St Jerome’s Department. But we agree that it is important to improve the levels of trust across the creek. The Department therefore appointed Dave DeVidi, now the Chair, as the SJU liaison. In 2012, the two Departments cooperated on a very successful celebration of the 50th Anniversary of the Waterloo Department, among other things bringing in an eminent scholar for a series of public talks.

8. The Department should ensure that it maintains, and if possible increases, the number of graduate-only seminars available to students.

The Department continues to regard this as a worthwhile long term goal. To make it reasonable, we must increase the number of students in the graduate program. This we regard as a more reasonable goal for the next few years, since we now have a more mature department with a few more members than a few years ago. Generating ideas for raising our numbers was the first charge given to the newly appointed Associate Chair, Graduate Studies in July 2012, and the first step, a series of consultations, is underway.

Undergraduate Recommendations:

1. That the University and Department work together to make it possible for regular faculty to teach more upper level undergraduate courses in the core areas of Philosophy, directed both at Philosophy majors and to students in other programs who will benefit from them.

The main development on this front has been the creation of “special topics” courses at the second, third and fourth year levels. This has allowed the Department to experiment with courses that we suspect might meet the description of being of interest to Philosophy students and to many others. The idea is that if they are successful, we will add them as permanent offerings. Many overlap naturally with other fields, including fields in other Faculties, and will make clear that Philosophy offers courses of interest to many. Recent courses have been on topics such as Philosophy and the Environment, Science and Society, Political Protest Movements, and the Philosophical Uses and Abuses of Game Theory. Others that have been suggested and that may be offered in the future include Philosophical Puzzles in Quantum Science, Global Health Ethics, Philosophy of Economics, Experimental Philosophy and Philosophy of Sport.
2. That the Department introduce tutorial sections taught by teaching assistants in large undergraduate classes.

   We responded to this in the July 2010 document, as part of the corresponding recommendation for the grad program. In short, there are various constraints, including space, that make implementing the recommendation impractical now, though we agree that for some courses it would be beneficial.

3. That curricular revision continue, with special attention to the needs and interests of Philosophy majors.

   The undergraduate committee is currently considering the question of revisions to the undergraduate curriculum that might increase the number of philosophy majors and joint majors. The committee is considering initiatives undertaken at other institutions, including other U15 Philosophy Departments, and is looking carefully at data about the Waterloo Department’s past recruitment and retention efforts.

4. That the Department should use its expertise to continue to develop its courses on ethics for the X and Business programs, perhaps with the use of DE components, so as to address the different needs of those programs.

5. That the Department should continue its revision of DE courses. To this end it is essential that the appointment of the DE Coordinator be renewed.

   Work continues on both these fronts. The Department remains interested in cooperating with other parts of campus, and has been involved, for instance, in creating Professional Development courses. The Arts Faculty Strategic Plan recommends making the position of DE (now EL) Coordinator permanent, but this has not yet happened.

6. That the Department should continue considering the institution of a Co-op program in Philosophy, although we do not think that this is essential for attracting students to the Philosophy program.

   This idea is currently on the back burner for the Department. Co-op is already available for Philosophy Honours and Majors through the Arts and Business program; and the introduction of a separate co-op program would be administration-intensive for little additional payoff. We are, however, actively pursuing other sorts of experiential learning opportunities for Philosophy students.

7. That steps be taken to resolve the tensions between the main campus Department and the Department at St. Jerome’s in the interests of the educational experiences of the undergraduates of both departments.

   See the response to the corresponding recommendation about the Grad Program.
Senate Undergraduate Council met on 12 February 2013 and 5 March 2013 and on behalf of Senate, approved changes to academic plans, new courses, course changes and course inactivations. Council agreed to forward the following items to Senate for approval and information. Council recommends that these items be included in the consent agenda. Items recommended for inclusion in the regular agenda are contained in a separate report. Further details are available at: uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council.

**FOR APPROVAL**

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**FACULTY REGULATION CHANGES**

*Faculty of Mathematics*

**Other Course Rules – Letter of Permission [effective 1 September 2014]**

**1. Motion:** To approve the following changes to the faculty’s regulation (Note: new text = **bold**; deleted text = **strikethrough**):

Courses on Letter of Permission: Students in Good or Excellent standing are normally permitted to take non-math courses at other universities on a part-time basis during terms off campus, provided that the courses are not explicitly required for their particular plan. Students wishing to take courses at other universities must submit a completed Letter of Permission Form (pdf) to the Registrar's Office before taking each course. The Standings and Promotions (S&P) Committee will not approve courses taken elsewhere for degree credit after the fact.

Courses taken on a Letter of Permission will be recorded on a student's academic record as transfer credits (CR) or transfer failures (TF) as appropriate. A grade of 60 or higher will be recorded as a credit and a grade of less than 50 will be recorded as a failure. Grades of 50-59 will result in the course not being recorded on a student’s record.

**Rationale:** The current regulation does not match the government’s philosophy of inter-university transfer credits, nor does it match the faculty’s philosophy of internal transfer credits. This change brings the regulation in line with both. The effective date listed is for calendar purposes only – the faculty intends to implement the proposed regulation as soon as possible since it is entirely to the benefit of students.

**English for Academic Success (EFAS) – Minimum Admission Requirements [effective 1 September 2013]**

**2. Motion:** To approve the following changes to the faculty’s regulation (Note: new text = **bold**; deleted text = **strikethrough**):

- Overall 80% in the 400 Level
- Overall 75% in each course (academic, oral and writing) at the 400 Level

**Rationale:** The revised minimum EFAS requirement is proposed in light of: the Common European Framework of Reference for Languages (CEF) that has been developed to help standardize language requirements based on a functional approach to writing, reading and speaking; EFAS course scores at 75% are at the CEF level of C1 which is equivalent to an IELTS score of 7.0; it formalizes current practice. The revised minimum English language requirements will be closely monitored and adjusted if a significant trend is detected.
FOR INFORMATION

Academic Program Review Report
- Management Engineering – See Attachment #1.

Academic Program Review Two-Year Progress Reports
- Biology – See Attachment #2.
- Nanotechnology Engineering – See Attachment #3.

Philosophy – See the report in the regular agenda from Senate Graduate & Research Council.

CURRICULAR MODIFICATIONS
Changes to academic plans, new courses, course changes and course inactivations were approved for the faculties of: applied health sciences (kinesiology, recreation and leisure studies); arts (accounting & financial management; fine arts; history; religious studies; Spanish and Latin American studies; visual culture); engineering (business, entrepreneurship & technology; management sciences; nanotechnology engineering; physical sciences option); environment (parks option); and mathematics (combinatorics & optimization; computer science; computing & financial management; mathematics; statistics).

/ees
21 March 2013

Mario Coniglio
Associate Vice-President,
Academic Programs
Academic Program Review Report for the Management Engineering Program

Review Process
This was the first the first formal program review of the Management Engineering (MGTE) program which is administered by the Department of Management Sciences (MSCI). MSCI has primary responsibility for teaching MGTE’s core and elective courses supported by teaching commitments from other Departments in the Faculties of Engineering, Mathematics and Science.

In January 2011, MSCI invited two experts to conduct a trial review of the MGTE program. They identified a number of priority areas for program improvement which have been incorporated into the program. Also, in 2011, MSCI conducted a self-study of all its MGTE operations and developed a draft five-year plan for the program as part of the Faculty of Engineering’s Vision 2015 planning process. The self-study for this review included the statement for Vision 2015.

The self-study for the first formal program review followed the format of the Canadian Engineering Accreditation Board (CEAB). It was submitted on 6 October, 2011. The site visit was conducted 27 to 29 November, 2011; the reviewers’ report was sent 15 February, 2012; and the Faculty’s response was submitted 9 March, 2012. CEAB accredited the Management Engineering program for three years to 30 June, 2015.

Characteristics of the Program

Historical Review
Planning for the MGTE program began in 2004-05. The program accepted its first students in fall 2007 at which time the program had 17 full-time faculty members. The first class of MGTE students graduated in 2012.

As the program became established, planning efforts evolved to focus on assessing operational strengths and weaknesses, while continually evolving the program through curriculum revisions and other changes. Important to these efforts are the establishment of outcomes-based performance assessment and continuous processes to support the new CEAB accreditation criteria that take effect in 2014.

Weaknesses that have been or need to be addressed are:

- the low number of faculty members in the program who are licensed Engineers;
- the relatively low admission quality of the student population relative to other Engineering programs of the Faculty – overall MGTE admission averages are three to five percentage points below the Faculty average, and entering class cohorts include a relatively lower proportion of students with admission averages above 90%;
- since the program started the entering class cohorts have also included a large fraction of “deflections”;
- first-year failure rates have been significantly higher than those of other Engineering programs.

Program Objectives
The objective of the program is to establish an academically rigorous, industry relevant, and professionally accredited, undergraduate MGTE program that is recognized in Canada and internationally for the high quality of its students and graduates.

The design of the program reflects the evolution of the Industrial Engineering discipline to address two important trends:
• the increasingly technical nature of management and business processes due to the pervasive use of information systems and technology;
• and the extension of Industrial Engineering methods beyond traditional manufacturing and process industries, to supply chain and operations management applications in diverse public and private sector settings.

The program develops student competence in three general areas:
• analytical skills to structure, model and solve industrial and supply chain management problems using mathematics, optimization and computational methods;
• technical computing skills to design and develop solutions that improve business operations and management processes, using software, simulation tools, and information systems and technologies;
• contextual knowledge of the economic, organizational and technology management settings in which management engineering solutions are implemented.

Integration of these three curriculum domains is a significant strength of the MGTE program.

Distinctiveness/Benchmarking
Management Engineering, which is the application of Engineering approaches to the design, planning, and operation of management systems comprised of people, materials, information and technology, is an innovative undergraduate program which is unique in Canada. Its strength is the industry relevance of its graduates.

Academic Programs Offered
The Department of Management Sciences offers:
BASc, Management Engineering (Co-op);
International Studies in Engineering Option;
Statistics Option;
Management Sciences Option.

The academic program consists of 42 courses, including 33 required core courses and nine electives.

Students entering UW Engineering programs (including MGTE) prior to 2010 were required to complete four satisfactory work term reports for graduation. Work reports are recorded on students’ transcripts with a weight of 0.125 each, so that credit for four reports corresponds to a weight of 0.5. Students entering in the 2011 and later cohorts are no longer required to complete work report (WKRPT) 100. The reason for this change is that revised professional development course content implemented in 2010 provides instruction on problem formulation and the critical thinking involved in making valid conclusions better than the WKRPT 100 exercise.

Accreditation units (AU) are defined on an hourly basis for an activity which is granted academic credit – one hour of lecture = 1 AU; one hour of laboratory = 0.5 AU.

An Engineering program must include:
• The entire program must include a minimum of 1,950 AU;
• Mathematics: a minimum of 195 AU;
• Natural Sciences: a minimum of 195 AU;
• Mathematics and Natural Sciences combined: a minimum of 420 AU;
• Engineering Science: a minimum of 225 AU;
• Engineering Design: a minimum of 225 AU;
• Engineering Science and Design Combined; a minimum of 600 AU;
• Complementary Studies: a minimum of 225 AU.

The MGTE program exceeds required CEAB AU thresholds for the entire program (the 2007 entering cohort had 2,156.1 AU and the 2010 and later cohorts will be 2,019.5 AU – both 10% above the minimum) with one exception. The program does not currently meet the minimum threshold for qualified AU in Engineering Design for the 2007 entry cohort, i.e. the 2012 graduates. This variability between cohorts is due to the different registration status of individual faculty members assigned to teach courses with Engineering Science and Design content from one year to the other.

The Faculty of Engineering has developed enhanced definitions of the 12 CEAB outcomes with the objective of providing guidance to individual faculty members when evaluating courses with respect to their contribution to the outcomes. The 12 outcomes are:

• Knowledge Base for Engineering;
• Problem Analysis;
• Investigation;
• Design;
• Use of Engineering Tools;
• Individual and Team Work;
• Communication Skills;
• Professionalism;
• Impact of Engineering on Society and the Environment;
• Ethics and Equity;
• Economics and Project Management;
• Life-long Learning.

Each Engineering student has to undertake a professional development program as part of his/her degree. This program consists of five courses delivered online during the co-op work terms. The courses assess competencies in a number of areas relevant to CEAB outcomes including professionalism; communication skills; ethics and equity; individual and team work; economics and project management; and the impact of engineering on society and the environment.

Students
In determining the admissibility of applicants, the following criteria are considered:

• Admission Average (ADM)
• High-school Adjustment Factor (HSAF)
• Admission Information Form (AIF).

The HSAF is intended to account for variations in marking standards between high-schools, measured by the performance of previous graduates from a given secondary school in our first-year engineering programs. The adjustment is derived from an eight-year rolling average mark drop from grade 12 to first-year university (i.e. the 1B term average minus the ADM average, averaged over students from a given high-school for the previous eight years). This drop averaged over all Ontario high-schools is approximately 16%, while the approximate range for different high-schools is about 6% to 21%. Data on adjustment factors are updated yearly, thereby enabling differences and changes in the grading practices and standards of the secondary school to be taken into account.

Applicants are also asked to submit an AIF. The purpose of these forms is to identify students who have a higher probability for success in the program as demonstrated by individual strengths and time-management skills. The AIF describes enriched academic activities, athletic activities, employment while
a student, community work, honours and awards, and other extra-curricular activities. Conversely, diminished probability for success can be detected via the AIF through repeated high-school courses, reduced course load, English language difficulties and the absence of any extra-curricular activity. The AIF asks specific questions directed at the above issues. These forms are read and scored by a group of retired Engineering professors who assist the Director and Associate Director. A bonus in the range of zero to five points is added to the ADM based on the AIF score.

Out-of-province students typically comprise about 20% of the first-year class, with most of these coming from British Columbia, Alberta and Quebec. In such cases, consideration is given to the student’s secondary school and to the experience Engineering has had with students from that institution or schooling jurisdiction.

Advanced admission is limited to entry at the 2A, 2B or 3A level. Admission beyond the 3A level is not allowed at UW due to the co-op requirements and degree-granting considerations. Such students comprise a very small fraction of the program’s student population.

The total number of students entering the program was 86 in 2007-08; 67 in 2008-09; 72 in 2009-10; and 73 in 2010-11.

The admission average of domestic students in the initial cohort was 85.6% compared to 89.6% for the Faculty as a whole. The admission average of visa students in the initial cohort was 87.5% compared to 90.8% for the Faculty as a whole. Because the first entry cohort in 2007 included a number of “deflection” students for whom MGTE was their second or third choice – the motivation was not there and this increased their chance of failure. To address this issue, the number of students admitted to MGTE was reduced in 2008.

The lower marks and higher number of “deflection” students relative to other Engineering programs led to relatively high first-year failure rates relative to the Faculty as a whole. Several steps have been taken to reduce first-year failure rates – reorganization of material in some courses; moving other courses to later years; reducing the number of students accepted in first-year.

Although the attrition rate has reduced – 59.2% of the 2008 entry cohort was still in the program in the 3A term compared to 46.5% of the 2007 cohort – the admission grades were still low relative to other Engineering programs – 16% of students in MGTE had entry grades of between 90% and 95%, and 1% had averages over 95%, compared to 34% and 8% respectively for the Faculty as a whole. In fall 2010 there were 211 students enrolled in MGTE of whom 28.9% were women and 10.9% were visa students.

Co-op placement in MGTE is on a par with other more established UW Engineering programs (typically 60 to 70% for the first work term and 95 to 100% in second and later work terms). Students have had co-op positions in a diverse range of public and private sector organizations, including energy, manufacturing, healthcare, construction, government, finance, transportation, consulting and many others. Many co-op employers invite their MGTE students to return for their second and third work terms. Statistics indicate that the number of co-op employers who advertise for MGTE students has increased by nearly a factor of 10 since the launch of the program.

The employment of MGTE students in winter, spring and fall terms of 2010 was 98%, 83% and 100% respectively. This was higher than the Faculty as a whole which had percentages of 97, 92 and 93 for the same three terms.
The MGTE program gave entrance scholarships of $92,000, $75,500 and $78,500 to 53, 45 and 42 students respectively in the entry years of 2007-08, 2008-09 and 2009-10. There were fewer upper-year scholarships. In 2008-09 there were 23 scholarships amounting to $43,700, and in 2009-10, $53,000 for 29 scholarships.

Student input is obtained via the class professor. Each class cohort is assigned a class professor who is chosen from among their core course instructors each term. Class professors act as liaison between the class and the Associate Chair, Undergraduate Studies, on any issues or concerns arising during the term. Student input is also collected on a regular basis through monthly meetings involving student representatives from each class, the class professors, the Associate Chair, Undergraduate Studies, and the Undergraduate Coordinator.

In a survey conducted in January 2011, of whom 28 students replied, half indicated that the courses were good and that they received skills on their work terms. What was not working well was the quality of teaching, limited electives, course content sequencing and planning, repetition and low standards. The main two areas in which students want to see improvement were teaching quality, and course content, sequencing and planning.

Faculty
Thirteen new full-time tenure-track faculty positions have been created to support the MGTE program, including 11 in Management Sciences, one in Mechanical Engineering and one in the Faculty of Mathematics. A non-tenured lecturer position has also been created in Management Sciences with both teaching and administrative responsibilities as industry liaison in support of the MGTE program. In addition to these 14, the Department of Management Sciences has been allotted a new tenured Tier 2 NSERC CRC, and two other tenure-track faculty positions currently vacant due to attrition.

Since 2007, 13 of these 17 positions are filled. All new faculty recruitment will be completed within the next two years. At that time, the Department will have a full-time complement of 32 faculty members.

At the time of this review there were 28 individuals holding continuing appointments: 11 Full Professors; three Associate Professors; 10 Assistant Professors; and four Lecturers. Of the 28, 17 were licensed professional Engineers (PEng).

The professoriate, over the last five years, has published annually an average of three peer-reviewed journal articles; 3.5 refereed conference proceedings; and 1.3 other publications. In addition, over the last five years eight patents have been obtained and another three have been submitted.

Each year, over the last five years, the average research funds obtained by each member of the professoriate has been $46,300 from NSERC; $28,800 from other grant sources; and $52,800 from research contracts.

Faculty members have acted as reviewers for CRC Review Committees and NSERC Grant Selection Committees as well as being Associate Editors and members of Editorial Advisory Boards. In addition, faculty members have won prizes for best papers at conferences as well as other awards such as Fellowship of the UK Royal Academy of Engineering, the Charles H. Jenning Memorial Award of the American Welding Society, and the Enhui Yong Research Innovation Award.

Concerns and Opportunities for Improvement
The review team saw from the curriculum map that the collective activities of students in the Management Engineering program addressed all the attributes required by the CEAB. However, the Faculty’s interpretation of the CEAB attributes suggest that there may be a practical problem in making a clear distinction between “problem solving” and “investigation” and between “professionalism” and
“ethics and equity”.

**Concern:** The minimum AU requirements were not satisfied for all AU categories. The AU-count for Natural Science was less than 195 AU following the review team’s reallocation of AUs for GENE 123 and ME 219.

**Response:** The review team reduced the Natural Science AU-count from 25% to 0% in GENE 123, from 30% to 0% in ME 219, and from 50% to 45% in ME 135. The Faculty disagrees with these reallocations decisions and with the corresponding conclusion that the Management Engineering program does not satisfy minimum AU requirements in Natural Science.

GENE 123 and ME 219 are longstanding courses that have been evaluated by several CEAB teams in previous reviews where multiple program visitors assessed these courses and accepted the Natural Science content. As a result the Faculty is of the opinion that the teaching and lab activities in these courses collectively exceed the claimed 25% and 30% Natural Science content.

ME 135 is a new course that was created for the Management Engineering program by combining Natural Science elements of ME 215 (Structure and Properties of Materials) and the Engineering Science elements of ME 220 (Control of Properties of Materials). Both ME 215 and ME 230 are longstanding core Mechanical Engineering courses which have been reviewed by several prior CEAB teams. Based on the fact that more than half of the lectures and laboratory activities in the course clearly deal with Natural Science topics, the Faculty believes that the claimed AU-count of 50% is in fact a very conservative value that should not be changed.

**Concern:** It was noted that eight of the 11 project advisors for the capstone design projects (MSCI 401) were not licensed professional Engineers and that the course instructor for MSCI 401 and 402 was not licensed. Also sampled student work from MSCI 401 demonstrated competent written expression, but (based only on the interim reports) a low coverage of Safety/Regulatory/Sustainability/Ethics aspects.

**Response:** The instructor who was responsible for MSCI 401 and 402 is a licensed professional Engineer. At the time of the review four of the faculty advisors are licensed professional Engineers. Six of the remaining faculty advisors have pending applications for licensure. One has been licensed; four are expected to be licensed in 2012; one in 2013 or 2014.

The Faculty accepts the review team’s findings of low coverage of Safety/Regulatory/Sustainability/Ethics aspects of design in the sampled interim design reports for MSCI 401. The course instructor placed additional emphasis on these aspects in the second half of the project (MSCI 402).

**Concern:** Additional state-of-practice software tools could be used. It would be useful for students to get more instruction on the modern design methodologies; starting from the rules of brainstorming, inventive problem solving methods, to conceptual designs (and models) generation etc.

**Response:** Teaching related to problem solving methods, conceptual design and model generation is included in various course, Including PD20, MSCI 100, MSCI 331, MSCI 332, MSCI 343, MSCI 401, MSCI 431 and MSDCI 444, among others. The Faculty thanks the reviewers for suggestions related to the use of particular modeling tools and will investigate their suitability for future inclusion in the curriculum.

**Concern:** The review team noted that the AU-counts claimed for the WatPD courses were excessive and that 18 AU (rather than 42 AU) is more appropriate for each of the two compulsory and three elective courses.
**Response:** The AU-counts assigned to the WatPD courses are based upon the K-factor approach (the K-factor is defined as the sum of AU for all common core and compulsory courses for which the computation was carried out on an hourly basis divided by the sum of all units defined by the institution for the same courses). These courses are intended to further the integration of class-room learning and workplace learning. The courses are designed to encourage students to reflect on the experiences that they encounter in the workplace. Hence, there is credit allocated for a small portion of the time that they are working to arrive at the credits for these courses.

**Concern:** There is no “hands-on” laboratory experience in the junior Natural Science courses (CHEM 102, PHYS 115 and 125) although some “demonstrations” are included. Program specific labs are limited.

**Response:** CEAB accreditation criteria do not specifically require the use of “hands-on” laboratories in junior Natural Science courses. The Faculty wishes to indicate that in addition to the labs in ME 135, MGTE students conduct “hands-on” science labs in GENE 123, an introductory course that contains 25% Natural Science content.

Many of the program specific lab activities within MGTE use computer lab facilities and provide “hands-on” experience with the use of diverse engineering tools for software design applications, system modeling, optimization, computer simulation, etc., rather than the sorts of traditional metal fabrication facilities that may be relevant in other Engineering disciplines.

**Concern:** The review team was concerned about the number of faculty members who were licensed professional Engineers.

**Response:** Most of the newly hired faculty members have been recent PhD graduates at early stages of their professional careers. The Department and the Faculty place strong emphasis on the professional registration of new faculty members, as well as the registration of existing faculty members. There have been processing delays which has led to the temporary imbalance in Limited Engineering License as against PEng licenses.

**Concern:** At the time of the visit, less than 225 AU of ED content and less than 600 AU of ES and ED content was delivered by licensed professional Engineers.

**Response:** Although the Faculty has made significant progress toward the licensure of eligible faculty members, it was not possible to satisfy fully the requirements for the 225 AU and the 600 AU by the time of the review visit. Since the review team’s visit, two additional faculty members have obtained full PEng licensure and several other faculty license registrations were imminent.

**Overall**
The Department and Faculty thank the review team for recognizing some of the strengths of the Management Engineering program and for suggesting various potential areas for program improvement.
Two-Year Progress Report of the Department of Biology

Introduction
The self-study of the review of the Department of Biology was completed November 2009, and the site visit was conducted 2 to 4 June, 2010. The review team submitted its report on 5 July, 2010 and the Department’s response was received 7 October, 2010. The academic program review report was approved by Senate Undergraduate Council on 9 November, 2010 and was presented to Senate on 17 January, 2011. This report was received 17 January, 2013 and describes progress made in the undergraduate plans in the past two years.

Undergraduate Enrollment
The admission rates for entry into the various Biology plans have remained slightly above target admission set by the Faculty of Science. The Department is currently at capacity for laboratory space for larger undergraduate laboratory courses e.g. BIO 130L (Introductory Cell Biology Laboratory). The Faculty of Science provided funds to purchase an additional laboratory section worth of equipment to allow the Department to launch a third concurrent section of BIO 130L for the first time in fall term, 2012. The additional space located in the new Science Teaching building, which is currently under construction, will alleviate some of the undergraduate laboratory space constraints.

Response to Recommendations (in order of importance)

Recommendation: that the University of Waterloo (UW) commit to reducing the student to faculty ratio in Biology (~40:1) to meet national or at least provincial standards in Biological Sciences Departments.

The Department has been notionally granted both faculty members (two Lecturers, three Assistant Professors and two Associate Professors) and technical support positions (replaced two retired technicians and another technical position is awaiting approval) to begin to address this issue. Unfortunately these new arrivals have just kept up with recent and upcoming retirements.

Recommendation: that the Department revises its course offerings for lecture courses that were decoupled from the laboratory component.

The Department is investigating the feasibility to decouple lecture and lab courses. Some courses may have to be offered in a partly uncoupled form, because they serve as prerequisites for other programs that do not require the laboratory component. Efforts to decouple laboratories will continue where possible.

Recommendation: that the Department revisits its proposal for five new FIELD titles for the graduate program and develop a logical relationship between the undergraduate program of specializations.

The approved graduate fields for the Department are; Ecology and Environmental Biology; Bioinformatics; Systematics and Evolution; Physiology, Cell and Developmental Biology; Molecular Genetics; and Microbiology. The undergraduate specializations, while partially aligned with the graduate fields, are designed with a much different emphasis: to cover the essentials of basic life science training rather than research technologies. There is the further complication of the programs associated with Biology but outside the Honours Biology core, such as Honours Biomedical Sciences, two joint programs (Honours Biochemistry and Honours Bioinformatics) and Honours Environmental Science (Ecology Specialization), Thus a direct alignment between undergraduate specializations/programs and graduate
fields is not practical.

However, considerable progress has been made in aligning the undergraduate programs with each other. The undergraduate curriculum committee reviewed the first two years of the Honours Biology program and has had departmental approval of a revised curriculum for Honours Biology and Honours Biomedical Sciences with effective dates of September, 2012 and September, 2015 respectively. The change to the Honours Biology curriculum has introduced seven Biology specializations (Non-Specialized; Animal Biology; Biotechnology; Environmental Biology; Microbiology; Molecular Genetics; and Plant Biology). The revised curriculum will align the first two years of the Honours Biology and Honours Biomedical Sciences programs. This alignment will allow for a student to change programs within the first two years without major impact on their progression through the program. The Department will monitor the change to the Honours Biology curriculum with respect to distribution among specializations.

Recommendation: that the Dean’s Office explicitly communicate with faculty members, staff members and students specific space plans within realistic timeframes relating to the construction of a new building and the space allocations for Biology in that building.

Key individuals of the Department have been identified to work closely with the Dean’s Office with regards to the new Science Teaching building. Six undergraduate laboratories, along with two laboratory prep rooms, equipment rooms and storage rooms have been allocated to serve Biology undergraduate laboratory courses. Three of the laboratories have been identified for first- and second-year Cell Biology/Physiology courses with the remaining three laboratories slated to run Microbiology courses.

Upon completion of the new Science Teaching building the Department will be in the position to launch laboratory sessions in current Biology undergraduate courses that do not have a laboratory component (e.g. Molecular Biology and Ecology). These laboratory courses will ensure that undergraduate students receive an experiential learning component that cannot be offered in lecture-only courses currently being offered. Additional resources will be required (e.g. laboratory instructor, technicians and teaching assistants) in order to meet the demands of the added laboratory sessions. Whether the new teaching building will have a significant effect on space available to hire research faculty members will depend on increasing enrolments and new or re-coupled laboratory courses. These factors will determine whether current undergraduate laboratory space in the existing building can be renovated into research space.

The Department has already begun plans for new research space by construction of a greenhouse/ecology teaching and research station/aquatic laboratory on the north campus. This would clear footprint for a new research building on the current greenhouse location, as well as allow re-purposing of prime space in the main Biology building.

Recommendation: that the Department becomes more implicated in the administration and design of the Bioinformatics program.

The Department has had a recent hire in Bioinformatics at the junior faculty level. At this point the Department will have a critical mass around which to focus a Biology-centred Bioinformatics/Computational Biology program.
Two-Year Progress Report for Nanotechnology Engineering

Introduction

Since the engineering accreditation process overlaps greatly with the undergraduate program review process, the University of Waterloo (UW) used the accreditation review by the Canadian Engineering Accreditation Board (CEAB) to satisfy the requirements of the undergraduate review process. The self-study of the Nanotechnology Engineering (NE) program was completed on 20 November, 2008 and the site visit was conducted 17 to 19 January, 2010. The review team submitted its report on 3 February, 2010. Accreditation was granted to Nanotechnology Engineering for three years.

Summary of the Accreditation Visit
The review team found that the program was acceptable in all areas except the following sections taken directly from the CEAB report:

Areas of Unacceptable Performance

Professional Status of Faculty Members
According to the institution’s assessment, the 2010 graduating class has 101 accreditation units (AUs) of Engineering Design (ED) delivered by licensed instructors. This is less than the 225 AUs required. Also, the amount of qualified AUs for Engineering Science (ES) and ED (2010 graduating class) is 401 which is less than the 600 required. For the 2014 graduating class, the total qualified ED AUs (140) would also be less than the minimum. The team noted the effort by several instructors to become licensed, including by those in the Chemistry Department under a limited license arrangement. In the Faculty of Engineering, it has become standard practice in recent years that new faculty appointment contracts stipulate that professional registration will be sought.

Curriculum Committee
The Nanotechnology Engineering Curriculum Committee currently holds three licensed professional engineers out of eight, which does not constitute a majority. The visiting team notes that three of the remaining members have applied for licensure.

Areas of Marginal Performance

Engineering Science - Other Engineering Disciplines
While the program is very broad in terms of natural science content, the program in its current form appears to have limited ES content beyond the elements of Electrical and Chemical Engineering core to the field of Nanotechnology Engineering.

Sustainable Development and Environmental Stewardship
Elements of these topics are noted in the PDEng course series and the Class Professor courses. As per the syllabus, the PDEng program is more evaluative than instructive and the Class Professor series is not mandatory for the 2010 graduating class. The review team noted that the PDEng program is being revamped and that the Class Professor series will be mandatory for the 2011 graduating class and beyond.
Specific Comments from the Review Team

Comments on Self-appraisal
The concept and implementation of the program for NE appears to be powerful and compelling. The breadth of the program is clearly one of its strengths. The program is in the start-up phase and all planned facilities and required number of licensed engineer instructors are presently under-developed, but good progress is being made to address both of these issues within the next one to two years. One potential issue not well recognized within the program’s self-assessment is the current immaturity of the nanotechnology industry and the consequent need to work closely with industry to meet rapidly evolving needs and to predict future expectations of both industry and students for nanotechnology engineers.

Suggestions for Improvement
Given the highly interdisciplinary nature of nanotechnology, it is highly probable that graduates of the NE program will interact closely with engineers and scientists of the related fields of Chemistry, Physics, Electrical Engineering, Mechanical Engineering, Chemical Engineering, Biology, Medicine, etc. The students of NE would be better prepared for this interaction if they were exposed to the students in those related disciplines through their coursework and projects. At present, the NE students take virtually no courses in conjunction with students outside their program. The suggestion herein could potentially also help to address the issue identified in the section above: “Engineering Science (ES) – Other Engineering Disciplines”.

Other points of Importance Noted by the Review Team
Also of note, several courses had an ED of 25%. As this is at the borderline of acceptable minimum content (25% rule), there is a risk that future site visits may revise these numbers downwards, putting significant ED content at risk. These include NE 100, 242, 300, 459 and the revised values for NE 335 and 353.

The K-factor (the K-factor is defined as the sum of AU for all common core and compulsory courses for which the computation was carried out on an hourly basis divided by the sum of all units defined by the institution for the same courses) has been adjusted upwards to 90.0. The predicted ED for 2014 grads will be 144.8 whereas it was 85.5 for 2010 graduates. (The minimum was 225).

Initial Response from UW
The initial response was to rectify the issue with the Curriculum Committee. The main issue remaining was that of licensing and ED. The review team pointed that the program was operating at only one-third to one-half of the absolute minimum levels of ED. The program committed to reaching compliance with the minimum requirement of 225 academic units by 2012 through increased levels of licensing.

Further Development of the Program
It would appear clear that the central issue from the last review is that of developing and maintaining sufficient levels of ED. Developing and maintaining these levels is a particular challenge with a program that is one-third from the Faculty of Science. Fortunately the Chemistry Department has made remarkable strides in licensing. Nevertheless, many of the program’s instructors are not yet licensed and some have been on faculty for long enough that they have passed the five-year window in which the CEAB expects to see them achieve licensing. As a result, until recently, the program was on track to have an ED content of only approximately 170 AUs.

Fortunately, the program was able to advance significantly the level of development of the curriculum, particularly in the fourth-year laboratories, and notably in NE 454 and 455. In addition, a team-teaching
model was implemented for the 4A term in which a licensed instructor was placed with any unlicensed instructor. This led to a projected ED content of approximately 260 plus or minus 30 AUs. Although likely adequate, it is not on a solid foundation since there is no way of knowing how acceptable a review team would find the assessment especially when the licensing status of all relevant faculty members may not be known. Because of these uncertainties, two low-enrolment technical electives were not offered in winter term, 2013.

The program is expected to demonstrate progress in developing outcomes assessment. NE is implementing a minimal version of the outcomes assessment process used by the Department of Electrical and Computer Engineering and this is expected to be sufficient for CEAB.

The program in its next review, because of its novelty and the prevalence of immature technologies within it, will come under intense scrutiny concerning the issue of safety.

During a recent review of safety issues, initiated by the program’s Director, it was determined that one of the lab personnel had not been performing his coordinator role appropriately with the result that safety had not been maintained within the labs. This safety and personnel issue is now a central problem facing the program. As a result a committee was formed to review the reporting structure of the program and the job descriptions of the lab instructors and their coordinator.
FOR INFORMATION

Recognition and Commendation

Ondrej Lhotak, associate professor of computer science, has been named an Outstanding Young Computer Science Researcher by the Canadian Association of Computer Science. Professor Lhotak joins Professor Ian Goldberg (2010) and Professor Bin Ma (2009) in a growing list of distinguished faculty members who have won this researcher prize. Lhotak’s research focuses on programming languages, compilers, and program analysis, with a specific focus on object-oriented languages. Program analysis has long been used to generate efficient code, and is increasingly being used in software engineering tools. These applications require precise and efficient program analyses. Increased modularity enabled by object-oriented languages makes interprocedural analysis necessary for precise results. As a result, he is working on making precise interprocedural analyses efficient enough to be practical. [8 March 2013 Daily Bulletin]

Researcher Kevin Resch (physics & astronomy, Institute for Quantum Computing) was awarded the Natural Sciences and Engineering Research Council of Canada’s (NSERC) E.W.R. Steacie Memorial Fellowship at a recent ceremony at Rideau Hall in Ottawa. Designed to “enhance the career development of outstanding and highly promising scientists and engineers who are faculty members at Canadian universities,” the Steacie Fellowships are highly sought-after hallmarks of professional success and potential. Professor Resch is an experimental physicist working in quantum information science, in particular the development of quantum sources of light and interferometric sensors. He is one of six winners who each receive a research grant of $250,000 over two years. NSERC’s E.W.R. Steacie Memorial Fellowships honour the memory of Edgar William Richard Steacie, an outstanding chemist and research leader who made major contributions to the development of science in Canada during, and immediately following, World War II. [27 February 2013 Daily Bulletin]

The University of Waterloo Stratford Campus’ MicroTiles wall, the tallest of its kind in the world, was selected as the Gold Winner in the Education and Healthcare category of the 2013 DSE Apex Awards, which honour innovation in the development and deployment of technology in the global Digital Out-Of-Home (DOOH) industry. The wall stands three storeys tall and is located in the atrium of the Stratford Campus. It is made up of 150 MicroTiles units, stacked five units wide and 30 units high, or 6.5 feet by 30 feet. Nominated by Westbury National Show Systems Ltd. and chosen by an independent panel of industry journalists, this year’s Apex Award finalists were named from a field of nearly 900 entrants, in 10 major digital signage categories. Gold, Silver and Bronze Apex Awards (in each category) were presented at an awards banquet held on the opening night of DSE 2013 on Wednesday 27 February at Caesars Palace in Las Vegas. The MicroTiles wall was installed through a partnership of Westbury National Show Systems, rpVisual Solutions, Christie Digital and the University of Waterloo Stratford Campus. [5 March 2013 Daily Bulletin]

The University of Waterloo was named the recipient of the Leadership Giving Award at the United Way Kitchener Waterloo & Area’s Community Spirit Awards ceremony held 28 February 2013 at the Waterloo Inn. Community Spirit Awards recognize individuals and organizations that have made a difference in the community through their involvement with United Way KW. The Leadership Giving Award “recognizes an organization that most successfully organized an exceptional Leadership Giving Campaign through motivation and encouragement of giving personal gifts of $1,000 or more.” The University of Waterloo was nominated alongside Economical Insurance, Equitable Life, FEDDEV, Stantec, and Teledyne DALSA. The university’s United Way campaign raised $280,000 in 2012. [1 March 2013 Daily Bulletin]
FOR INFORMATION

A. APPOINTMENTS

Definite-term Appointment

FENTON, Nancy, Associate Research Professor, Faculty of Applied Health Sciences, April 1, 2013 to June 30, 2017. BSc, Nutrition, University of Western Ontario; Registered Dietitian (RD), Dietetic Internship, St. Michael’s Hospital; MEd Adult Education and Counseling Psychology, University of Toronto; PhD, Education (Policy and Leadership), Brock University. Primary research interests focus on environment and health, quality of life, emotion and children, and qualitative methods in social sciences. Research and knowledge exchange activities supporting the faculty’s strategic plan include conducting health research; engaging in knowledge exchange activities that contribute to improvements in population health; creating opportunities in population-based research for graduate students and postdoctoral fellows; and supporting the dean in tasks related to recognition of research and researchers.

Adjunct Appointments

COLE, Donald, Associate Professor, School of Public Health and Health Systems, April 1, 2013 to March 30, 2018.

CRIZZLE, Alexander, Assistant Professor, School of Public Health and Health Systems, February 1, 2013 to December 31, 2015.

Postdoctoral Fellow to Research Appointments

GIBBS, Jenna, Department of Kinesiology, July 15, 2013 to July 14, 2014.

MINAKER, Leia, School of Public Health and Health Systems, April 1, 2013 to August 31, 2013.

B. ADMINISTRATIVE APPOINTMENT

McILROY, William, Chair, Department of Kinesiology, July 1, 2013 to June 30, 2017.

C. SABBATICAL LEAVES

PARRY, Diana, Associate Professor, Department of Recreation and Leisure Studies, January 1, 2014 to December 31, 2014 at 85% salary.

GLOVER, Troy, Associate Professor, Department of Recreation and Leisure Studies, January 1, 2014 to December 31, 2014 at 85% salary.

HANNING, Rhona, Associate Professor, School of Public Health and Health Systems, September 1, 2013 to August 31, 2014 at 93.3% salary.

Susan J. Elliott
Dean, Applied Health Sciences
FOR INFORMATION

A. APPOINTMENTS

Tenured Appointment

CONDON, Frances (BFA 1994, York University; MA, Clarion University; PhD 2000, University of New York), Associate Professor, Department of English Language and Literature, July 1, 2013.

Dr. Condon obtained her BFA with a specialization in theatre performance at York University and her MA with a specialization in composition and creative writing at Clarion University of Pennsylvania. She then completed her PhD at University of New York at Albany, where her dissertation was entitled Teaching to Transform: Nonviolence and Literacy. Dr. Condon spent the early years of her career at St. Cloud State University, where she was tenured and promoted to associate professor and held positions as director of the Writing Center and director of the Center for Excellence in Teaching and Learning. Since 2007, she has been associate professor of English and faculty coordinator of the Writing Centre at the University of Nebraska-Lincoln. Dr. Condon is the author of four refereed articles, four book chapters, and two monographs: I Hope I Join the Band: Narrative, Affiliation, and Antiracist Rhetoric (Utah State UP; sole author) and The Everyday Writing Center (Utah State UP; co-authored). She has taught in both undergraduate and graduate curriculum, from first-year composition to upper division and graduate courses in such subjects as writing and rhetoric, literacy and community studies, writing centre theory and practice, rhetoric and race and the politics of literacy. Dr. Condon is expected to make a strong contribution to programs in the department and the Master of Public Service program.

Probationary-term Appointment

RISKO, Evan (BA 2004, MA 2006, PhD 2008, University of Waterloo), Assistant Professor, Department of Psychology, July 1, 2013 to June 30, 2016. Dr. Risko received his undergraduate and graduate degrees from the University of Waterloo, receiving the Alumni Gold Medal for both his graduate degrees. Upon completing his PhD in 2008, he pursued a postdoctoral fellowship at the University of British Columbia, after which he held appointments as assistant professor at Arizona State University (two years) and the University of Memphis (one year). Dr. Risko is a cognitive psychologist with research interests in the domains of attention, reading, education, and embodied cognition. He has published over 30 papers in first-tier journals. With the breadth of his research interests, he will bring a collaborative research program to the department and will bolster the cognitive division, contributing substantially to its top-flight graduate program.

Adjunct Reappointments

Instruction

NABERT-CHUBB, Rebecca, Lecturer, Department of Political Science, May 1, 2013 to August 31, 2013.

SETH, Amit, Lecturer, School of Accounting and Finance, January 1, 2013 to April 30, 2013.

SHARMA, Ajay, Lecturer, Department of Political Science, May 1, 2013 to August 31, 2013.

Miscellaneous (research, consultations, etc.)

ROSS, Hildy, Professor, Department of Psychology, April 1, 2013 to March 31, 2016.
B. ADMINISTRATIVE APPOINTMENTS
CARVALHO, Emanuel, Associate Dean, Co-op, Administration and Planning, September 1, 2014 to June 30, 2017.

CHESNEY, William, Associate Dean, Undergraduate Studies, September 1, 2013 to June 30, 2016.

COLLINGTON, Tara, Associate Chair, Undergraduate Studies, Department of French Studies, January 1, 2013 to December 31, 2013.

DUBEAU, Catherine, Associate Chair, Graduate Studies, Department of French Studies, January 1, 2013 to December 31, 2013.

C. SABBATICAL LEAVES
For Approval by the Board of Governors
BRUCE, Gary, Associate Professor, Department of History, July 1, 2013 to December 31, 2013 at full salary.

CURRY, Philip, Assistant Professor, Department of Economics, July 1, 2013 to December 31, 2013 at full salary.

GUNZ, Sally, Professor, School of Accounting and Finance, July 1, 2013 to December 31, 2013 at 85% salary.

HOCHSTETLER, Kathryn, Professor, Department of Political Science, July 1, 2013 to June 30, 2014 at 85% salary.

Douglas M. Peers
Dean, Arts
A. APPOINTMENTS

Visiting Appointments

ALMANSOORI, Ali, Researcher, Department of Chemical Engineering, March 1, 2013 – August 31, 2013.


GU, Xiaogang, Scholar, Department of Civil & Environmental Engineering, September 1, 2012 – November 30, 2013.

GUMFEKAR, Sarang, Scholar, Department of Chemical Engineering, January 1, 2013 – April 30, 2013.

MATSUMURA, Tadayoshi, Researcher, Department of Chemical Engineering, August 1, 2013 – September 30, 2014.


Visiting Reappointment

SAWELL, Steven, Researcher, Department of Chemical Engineering, January 1, 2013 – December 31, 2014.

Adjunct Appointments

Instruction

BYSKAL, Daniel, Lecturer, Department of Mechanical & Mechatronics Engineering, May 1, 2013 – December 31, 2013.

CHEY, Katy, Assistant Professor, School of Architecture, January 1, 2013 – April 30, 2013.

LUZAR, Brigitte, Assistant Professor, School of Architecture, January 1, 2013 – April 30, 2013.


TYRRELL, Jonathan, Assistant Professor, School of Architecture, January 1, 2013 – April 30, 2013.

URBANIK, Brian, Assistant Professor, School of Architecture, January 1, 2013 – April 30, 2013.
Graduate Supervision and Research

HENNEKE, Dale, Assistant Professor, Department of Chemical Engineering, July 1, 2013 – June 30, 2015.

IBRAHIM, Walid, Assistant Professor, Department of Electrical & Computer Engineering, January 1, 2013 – December 31, 2015.

Adjunct Reappointments

Instruction

BATAY-CSORB, Andrew, Assistant Professor, School of Architecture, January 1, 2013 – April 30, 2013.

IVKOVIC, Igor, Lecturer, Department of Electrical & Computer Engineering, May 1, 2013 – August 31, 2013.

Research


VLACH, Jiri, Professor, Department of Electrical & Computer Engineering, September 1, 2011 – August 31, 2014.

Graduate Supervision

ZHANG, Fan, Professor, Department of Mechanical & Mechatronics Engineering, September 1, 2012 – August 31, 2015.

Cross Appointment

NARASIMHAN, Sriram, Associate Professor, Department of Civil & Environmental Engineering to Department of Mechanical & Mechatronics Engineering, March 1, 2013 – February 28, 2016.

B. ADMINISTRATIVE APPOINTMENT

HUISSON, Jan, Chair, Department of Mechanical & Mechatronics Engineering, February 4, 2013 – December 31, 2016.

ADMINISTRATIVE REAPPOINTMENT – DATE CHANGE

ISMAIL, Fathy, Interim Chair, Department of Mechanical & Mechatronics Engineering, change from January 1, 2013 – April 30, 2013 to January 1, 2103 – February 3, 2013.

C. RESIGNATIONS

HENNEKE, Dale, Assistant Professor, Department of Chemical Engineering, effective June 30, 2013.

SOARES, Joao, Professor, Department of Chemical Engineering, effective June 30, 2013.

D. SABBATICAL LEAVES

For Approval by the Board of Governors

GONG, Guang, Professor, Department of Electrical & Computer Engineering, September 1, 2013 – August 31, 2104 at 85% salary.
JAYARAM, Sesa, Professor, Department of Electrical & Computer Engineering, September 1, 2013 – February 28, 2014 at 100% salary.

PATEL, Hiren, Assistant Professor, Department of Electrical & Computer Engineering, September 1, 2013 – February 28, 2014 at 100% salary.

SCHNEIDER, Gerald E., Professor, Department of Mechanical & Mechatronics Engineering, September 1, 2013 – August 31, 2014 at 100% salary.

SUNDARAM, Shreyas, Assistant Professor, Department of Electrical & Computer Engineering, July 1, 2013 – December 31, 2013 at 100% salary.

E. ADMINISTRATIVE LEAVE

SCHNEIDER, Gerald E., Professor, Department of Mechanical & Mechatronics Engineering, September 1, 2014 – December 31, 2014 at 100% salary.

[Signature]

Pearl Sullivan
Dean, Engineering
FOR INFORMATION

A. APPOINTMENTS

Probationary-term Reappointment
CLARKE, Amelia, Assistant Professor, School of Environment, Enterprise and Development, July 1, 2013 to June 30, 2016. [Dipl Eng and BS, Mount Allison, 1995; MES, Dalhousie, 2002; PhD, McGill, 2010.]

Adjunct Appointments
Instruction
RATCLIFFE, William, Assistant Professor, School of Environment, Enterprise and Development, January 1, 2013 to August 31, 2013.

Graduate Supervision
GRUNTFEST, Eve, Professor, Department of Geography and Environmental Management, February 15, 2013 to February 15, 2015.

Cross Appointment
HIPEL, Keith, Professor, Department of Systems Design Engineering to the Department of Geography and Environmental Management, January 1, 2013 to December 31, 2015.

B. SABBATICAL LEAVES

For Approval by the Board of Governors
GIBSON, Robert, Professor, Department of Environment and Resource Studies, January 1, 2014 to June 30, 2014 at 85% salary.

GORBET, Rob, Associate Professor, Faculty of Environment (Centre for Knowledge Integration), September 1, 2013 to August 31, 2014 at 100% salary.

LARSON, Brendon, Associate Professor, Department of Environment and Resource Studies, January 1, 2014 to June 30, 2014 at 85% salary.

MOOS, Markus, Assistant Professor, School of Planning, July 1, 2013 to December 31, 2013 at 100% salary.

WOUDSMA, Clarence, Associate Professor, School of Planning, July 1, 2013 to December 31, 2013 at 100% salary.

C. SPECIAL LEAVE

For Approval by the Board of Governors
JERNIGAN, Ed, Professor, Faculty of Environment (Centre for Knowledge Integration), August 1, 2014 to July 31, 2016 at 100% salary.

André Roy
Dean, Environment
A. APPOINTMENTS

Probationary-term Appointment
POSTLE, Luke (BS, 2007, Gordon College; PhD, 2011, Georgia Institute of Technology), Assistant Professor, Department of Combinatorics and Optimization, May 15, 2014 – June 30, 2017. Dr. Postle completed his PhD under the supervision of Professor Robin Thomas. He is presently doing a two-year postdoctoral fellowship at Emory University. His research interests are in structural and topological graph theory, graph colouring, and matroid theory. Dr. Postle’s PhD thesis on 5-list-colouring graphs on surfaces was a tour de force that solved almost all the open problems on this topic. He has a very ambitious research program, and already has a wide network of collaborators around the world. Dr. Postle’s addition will continue the C&O department’s proud history of excellence in graph theory research.

Probationary-term Reappointment
WENG, Chengguo (BS, 2001; MMath, 2004, both from Zhejiang University; PhD, 2009, University of Waterloo), Assistant Professor, Dept. of Statistics and Actuarial Science, July 1, 2013 – June 30, 2016.

Continuing Appointment
WOLCZUK, Dan (BSc, 2001, University of Northern British Columbia; MMath, 2004, University of Waterloo), Lecturer, Office of the Dean, July 1, 2013. Mr. Wolczuk will teach six courses per year and participate in service activities (e.g. student advising, course coordination and overseeing teaching assistants).

Visiting Appointments


Adjunct Appointment
Research
PORTH, Lysa, Assistant Professor, Dept. of Statistics and Actuarial Science, April 1, 2013 – March 31, 2016.

Adjunct Reappointments
Instructor


IVKOVIC, Igor, Lecturer, David R. Cheriton School of Computer Science, May 1, 2013 – August 31, 2013.
MARTI PEREZ, Laura, Lecturer, Dept. of Pure Mathematics, May 1, 2013 – August 31, 2013.

PETRICK, Mark, Lecturer, David R. Cheriton School of Computer Science, May 1, 2013 – August 31, 2013.

Cross Appointments
CHARBONNEAU, Benoit, Assistant Professor, St. Jerome’s University to the Dept. of Pure Mathematics, July 1, 2013 – June 30, 2016.


B. ADMINISTRATIVE APPOINTMENTS
KARIGIANNIS, Spiro, Associate Chair, Graduate Studies, Dept. of Pure Mathematics, July 1, 2013 – June 30, 2016.

MORARU, Ruxandra, Associate Chair, Undergraduate Studies, Dept. of Pure Mathematics, July 1, 2013 – June 30, 2016.

ADMINISTRATIVE REAPPOINTMENTS


C. RESIGNATION
PORTH, Lysa, Assistant Professor, Dept. of Statistics and Actuarial Science, effective February 28, 2013.

D. SABBATICAL LEAVES
For Approval by the Board of Governors
BARANOSKI, Gladimir, Associate Professor, David R. Cheriton School of Computer Science, July 1, 2013 – December 31, 2013 with 100% salary.

TAN, Ken Seng, Professor, Dept. of Statistics and Actuarial Science, May 1, 2013 – April 30, 2014 with 100% salary.

WENG, Chengguo, Assistant Professor, Dept. of Statistics and Actuarial Science, September 1, 2013 – February 28, 2014 with 100% salary. This is a special early sabbatical.

Ian P. Goulden
Dean, Mathematics
A. APPOINTMENTS

Probationary-term Reappointment

HOPKINS, W. Scott, Assistant Professor, Department of Chemistry, July 1, 2014 to June 30, 2017. [BSc, University of New Brunswick (2001); PhD, University of New Brunswick (2006).]

Definite-term Reappointments

ARAVENA, Ramon, Research Professor, Department of Earth and Environmental Sciences, July 1, 2013 to June 30, 2014.

CONANT, Jr., Brewster, Research Assistant Professor, Department of Earth and Environmental Sciences, March 1, 2013 to February 28, 2014.

Adjunct Appointments

Graduate Instruction

NEVILLE, Christopher J., Lecturer, Department of Earth and Environmental Sciences, February 1, 2013 to January 31, 2016.

Graduate Instruction and Graduate Supervision

ZENG, Bei, Assistant Professor, Department of Physics and Astronomy, January 1, 2013 to December 31, 2016.

Undergraduate Instruction

COOK, Rachel, Lecturer, Department of Biology, May 1, 2013 to August 31, 2013.

Research and Other

STRONG, J. Graham, Professor, School of Optometry and Vision Science, March 1, 2013 to February 28, 2016.

Adjunct Reappointment

Graduate Supervision and Research

AL-ABADLEH, Hind, Associate Professor, Department of Chemistry, January 1, 2013 to August 31, 2016.

Cross Reappointment

KNIGHT, Mark, Associate Professor, Department of Civil Engineering to Department of Earth and Environmental Sciences, February 1, 2013 to January 31, 2015.

Change in Appointment

DALTON, Kristine, School of Optometry and Vision Science, appointment changed from Assistant Professor (probationary-term) to Lecturer (definite-term, February 1, 2013 to June 30, 2016) until her PhD requirements have been met (as per her letter of offer).
B. ADMINISTRATIVE APPOINTMENT
SCHNEIDER, Eric, Associate Director, Curriculum and Assessment, School of Pharmacy, March 1, 2013 to February 28, 2016.

C. SABBATICAL LEAVE
For Approval by the Board of Governors
WETTIG, Shawn, Assistant Professor, School of Pharmacy, September 1, 2013 to August 31, 2014 with 85% salary.

T.B. McMahon
Dean, Science
FOR INFORMATION

A. ADMINISTRATIVE APPOINTMENTS
BRENNER, Tom, Academic Dean, April 1, 2013 to August 31, 2014.

DONAHUE, Peter, Chair, Social Development Studies, July 1, 2013 to June 30, 2016.

SMIT QUOSAI, Trudy, Associate Director of Research, January 7, 2013 to January 6, 2014.

B. RETIREMENTS
CLARK, Deborah, Field Education Coordinator, School of Social Work, effective June 25, 2013.

CLIFFORD, Lois, Librarian, Lusi Wong Library, effective August 1, 2013.

MAJONIS, Joel, Assistant Professor, Social Development Studies, effective December 31, 2013.

MESBUR, Ellen Sue, Professor, School of Social Work, effective August 31, 2013.

C. SABBATICAL LEAVE
MARIGOLD, Denise, Assistant Professor, Social Development Studies, July 1, 2013 to December 31, 2013 at 100% salary.

Glenn F. Cartwright
Principal, Renison University College
FOR APPROVAL

Elections to Senate Committees and Councils and to the Board of Governors

Motion: To acclaim the membership of Senate Committees and Councils and the Board of Governors as provided on the list of nominees [Attachment 1].

Background: When a committee or council specifies that faculty members are to be representative of the faculties, the dean of each faculty will be asked to nominate a qualified member of faculty to serve. These nominations will then be forwarded to the April meeting of Senate. At the meeting further nominations will be accepted from the floor. Where there is more than one name for a position, an electronic election will follow the meeting.
LIST OF NOMINEES

- **Senate Executive Committee**
  Terms 1 May 2013 to 30 April 2014

  Faculty – one from each faculty
  
  Applied Health Sciences
  Richard Wells
  
  Arts
  Daniel O’Connor
  
  Engineering
  Anwar Hasan
  
  Environment
  Bruce Frayne
  
  Mathematics
  Dan Brown
  
  Science
  Barry Warner

  Faculty from Federated University &
  Affiliated University Colleges – one
  Susan Schultz Huxman

  Undergraduate Student – two
  Sacha Forstner
  Sean Hunt

  Graduate Student – one
  Robert Henderson

  Alumnus – one
  vacancy

- **Senate Finance Committee**
  Terms 1 May 2013 to 30 April 2014

  Faculty – one from each faculty
  
  Applied Health Sciences
  James Rush
  
  Arts
  Lutz-Alexander Bush
  
  Engineering
  Paul Guild
  
  Environment
  Olaf Weber
  
  Mathematics
  Michele Mosca
  
  Science
  David Rose

  Faculty from Federated University &
  Affiliated University Colleges – one
  Katherine Bergman

  Undergraduate Student – two
  Chanakya Ramdev
  Nicollette Zapt ses

  Graduate Student – one
  Boyd Panton

  Alumnus – one
  Andrew Williams

- **Senate Long Range Planning Committee**
  Terms 1 May 2013 to 30 April 2014

  Faculty – one from each faculty
  
  Applied Health Sciences
  Paul Eagles
  
  Arts
  John Burbidge
  
  Engineering
  Marios Ioannidis
  
  Environment
  Alex Brenning
  
  Mathematics
  Dong Eui Chang
  
  Science
  Sue Leat

  Faculty from Federated University &
  Affiliated University Colleges – one
  Graham Brown

  Undergraduate Student – one
  David Collins

  Graduate Student – two
  Coleen Even
  Michael Makahnouk

  Alumnus – one
  vacancy

- **Senate Nominating Committee for Honorary Degrees**
  Terms 1 May 2013 to 30 April 2014

  Faculty – one from each faculty
  
  Applied Health Sciences
  Richard Wells
  
  Arts
  Shelley Hulan
Engineering
  George Freeman
Environment
  Markus Moos
Mathematics
  Bruce Richter
Science
  Bill Power

Faculty from Federated University & Affiliated University Colleges – one
  Glenn Cartwright

Undergraduate Student – two
  Sacha Forstner
  Allyson Francis

Graduate Student – one
  Maya D’Alessio

Alumnus – one
  vacancy

• Senate Graduate & Research Council
  Terms 1 May 2013 to 30 April 2015

Faculty from Federated University & Affiliated University Colleges – one
  Tracy Peressini

Graduate Student – one from each faculty
  Arts
    Coleen Even
  Engineering
    Boyd Panton
  Science
    Maya D’Alessio

• Senate Undergraduate Council

Faculty – one from each faculty
  Terms 1 May 2013 to 30 April 2015
  Applied Health Sciences
    Linda Jessup
  Arts
    Emanuel Carvalho
  Term 1 May 2013 to 30 April 2014
  Environment
    Ian McKenzie

Faculty from Affiliated University Colleges – one
  Term 1 May 2013 to 30 April 2015
  vacancy

• University Committee on Student Appeals
  Terms 1 May 2013 to 30 April 2015

Faculty – one from each faculty
  Applied Health Sciences
    Steve Smith
  Environment
    Merrin Macrae
  Mathematics
    David Wagner
  Science
    Christine Dupont

Undergraduate Student – one from each faculty
  Applied Health Sciences
    Nickta Jowhari
  Arts
    Renishaki Kamalanathan

Graduate Student – one
  Mathematics
    Tyrone Ghaswala

• Board of Governors

  Faculty – four – electronic election following 15 April 2013 Senate meeting
  Terms 1 May 2013 to 30 April 2015
    John Burbidge
    Paul Guild
    Shelley Hulan
    Michele Mosca
    Bill Power
    James Skidmore

Undergraduate Student – one
  Term 1 May 2013 to 30 April 2014
    David Collins

Undergraduate Student – one
  Term 1 May 2013 to 30 April 2015
    Sean Hunt

Graduate Student – one
  Term 1 May 2013 to 30 April 2015
    Robert Henderson
The following item is recommended to Senate for approval, subject to approval by Senate Graduate & Research Council at its meeting on 15 April 2013. The item is recommended for inclusion in the regular agenda.

Further details are available at: www.adm.uwaterloo.ca/infosec/Committees/senate/sgrc.htm

FOR APPROVAL

THESIS EDITING GUIDELINES

1. Motion. To approve new thesis editing guidelines, which shall become part of the university’s thesis regulations, as described in Attachment 1.

Rationale: Graduate students, with input from their advisory committee, have primary responsibility for editing their own theses. In some circumstances it may be determined that a professional editor should be employed. For these cases, the university needs to establish regulations and guidelines for the ethical use of a professional editor. The proposed regulations/guidelines constitute a minimum university-level standard, and individual faculties may have more restrictive standards.

/sg
George Dixon
Vice-President, University Research

Sue Horton
Associate Provost, Graduate Studies
The University of Waterloo expects that graduate dissertations, regardless of subject area, will meet appropriate standards of clarity and coherence in written English. The student is primarily responsible for ensuring that the thesis is written in clear and correct English; the student’s supervisor and advisory committee also bear a weight of responsibility for providing guidance consistent with normal practice for the discipline.

It is expected that students, with input from their advisory committee, will be in charge of editing their own theses. In some circumstances, however, it may be determined that a professional editor should be employed. (Note: “professional editing” includes editing services by an outside party regardless of whether or not such services are paid for. Having a relative or friend edit one’s thesis, for example, even if no money changes hands, may constitute professional editing if the individual concerned has in the past received payment from other people for editing work). A supervisor may recommend that a student have his/her thesis edited, but may not require the student to do so. Conversely, a supervisor can choose not to permit the use of a professional editor.

Following are the regulations and guidelines for the ethical use of a professional editor. These regulations/guidelines constitute a minimum university-level standard. Individual faculties may have more restrictive standards; students and supervisors should consult the regulations set down by their own faculty on editing of graduate theses.

1. If the dissertation is to be edited by a professional editor, there must be written permission from the student’s supervisor. In order to avoid subsequent challenges or accusations of academic misconduct, it is highly recommended that the student, supervisor, and editor make use of the contract template provided by the Editors’ Association of Canada (Appendix A of Guidelines for Ethical Editing of Theses/Dissertations, http://www.editors.ca/hire/theses.html). Note: it is important for the student to be aware that unauthorized use of editing services at any stage of the thesis production constitutes an academic offence.

2. Under no circumstances is the level of editing to exceed the guidelines set out by the Editors’ Association of Canada in its Guidelines for Ethical Editing of Theses/Dissertations (http://www.editors.ca/hire/theses.html) and the University of Waterloo Graduate Thesis Regulations (http://uwaterloo.ca/graduate-studies/thesis/thesis-regulations). In many instances it will be advisable for supervisors to impose a more restrictive level of editing (the contract template in Appendix A of the EAC’s Guidelines allows for detailed specifications). Ideally, the editing should take place in such a way that it constitutes a learning experience for the student.

3. In all cases where an editor (professional or otherwise) has been used, specific acknowledgement must be made in the completed dissertation. This acknowledgement must include the name of the editor and a brief description of the type of editing services provided (this description should be provided by the editor).
4. Individual faculties/departments/supervisors may require the student to submit a marked-up copy (hard copy or electronic tracked-changes copy) of the thesis along with the final version in order to demonstrate the degree of editing that has taken place.

5. It is highly recommended that the editor employed be a member of the Editors’ Association of Canada. See the EAC’s “Hire an Editor” page (http://www.editors.ca/hire/index.html); there is also a local Kitchener-Waterloo-Guelph “twig” of the Association (http://www.editors.ca/content/kitchener-waterloo-guelph-twig). In any case, any editor employed must abide by the regulations under no. 2 above.

6. For FAQs on editing of theses for supervisors and students, see [URL].
FAQs

These FAQs have been borrowed with permission from the Australian Institute of Professional Editors, Ltd. (IPED; http://iped-editors.org/Editing_theses.aspx) and revised for the Canadian and the Waterloo context.

For the student:

I want to employ the services of a professional editor. What should I do?

You should discuss the matter with your principal supervisor, and obtain his/her written approval. Next, you should read the Editors’ Association of Canada’s Guidelines for Editing Theses (http://www.editors.ca/hire/theses.html) for guidance on what is involved in having your thesis professionally edited. You can also check the web site of the EAC to identify a suitable professional editor. Ensure that the editor you choose has appropriate professional experience. You should also familiarize yourself with the EAC’s Professional Editorial Standards (http://www.editors.ca/resources/eac_publications/pes/index.html). This will inform you about the range of services that professional editors provide.

What services will a professional editor provide?

A professional editor may only provide you with copyediting and/or proofreading services, as well as (perhaps) some stylistic editing (for definitions, see http://www.editors.ca/hire/definitions.html). According to the EAC’s Guidelines for Editing Theses, copyediting services include “editing for grammar, usage, spelling, punctuation, and other mechanics of style; checking for consistency of mechanics and for internal consistency of facts; inserting head levels and indicating the hierarchy of headings and subheadings and approximate placement of art (including graphs, tables, maps).” Proofreading services include “checking of formatted, edited material for accuracy of inputting, for adherence to a specified design, and for mechanical errors in text, such as spelling mistakes or small deviations from the editorial style sheet.” Stylistic editing is likely to be somewhat restricted in the case of a thesis: “Stylistic editing” means work to clarify meaning, polish language, and other non-mechanical line-by-line editing. Thesis supervisors may wish to authorize some or all of the following tasks. Editors can, if so instructed, minimize the implicit rewriting by querying and by marking spots where the text could be simplified or improved without amending it themselves.

What services will a professional editor not provide?

A professional editor should not advise or make corrections to the substance or structure of your thesis, though they may draw any such problems to your attention. It is expected that your supervisor will have covered matters of substance and structure with you.

Can I provide my work to the professional editor in hard-copy or electronic-copy format?

Yes, you can provide either (unless your institution stipulates that editing should be carried out in one format rather than the other). You should discuss with the editor, at the outset, which format you will work in. According to which format is used, the editor will advise you on the process to be followed for the editing to be completed responsibly and efficiently.
What are my responsibilities in working with a professional editor?

You are responsible for providing the editor with a clean copy of your thesis in either electronic or hard-copy form. You should also provide the editor with any style guide, manual, or guidelines to which your thesis is required to conform. The editor will outline any other requirements of your role during the editing process. Most importantly, you are responsible for reviewing each change or correction suggested by the editor before accepting it. Bear in mind that this is your thesis, and that the final responsibility for its integrity is yours.

What are my specific responsibilities when having my thesis edited electronically?

You should not regard this editing method as a shortcut. As with hard-copy editing, you are responsible for checking each change individually before accepting it. Automatically accepting changes may introduce errors into your thesis and may undermine your ownership of and authority over your work. Your editor is advised to return electronically edited material to you in PDF format, to ensure that you consider and make each suggested editorial change to your own working copy.

Should the professional editor be acknowledged in the prefatory matter of the thesis?

Yes. The acknowledgement should take the following form: “Professional editor, [editor’s name], provided [specific services], according to the guidelines laid out in the university-endorsed EAC’s Guidelines for Editing Theses, and the contract signed between Supervisor [name(s)], Student [name], and Editor [name].”

Will using an editor guarantee that all errors will be eliminated from my thesis?

The use of a professional editor should ensure that your thesis is expertly and thoroughly copyedited and/or proofread. However, it is impossible to guarantee that all copyediting and proofreading errors are eliminated. The final responsibility for the integrity of the thesis remains yours.

For the supervisor:

My student needs to employ the services of a professional editor. What should I do?

The final decision on whether your student may employ a professional editor or not rests with you; you will need to provide written approval. You should familiarize yourself with the Editors’ Association of Canada’s Guidelines for Editing Theses (http://www.editors.ca/hire/theses.html) for guidance on what you and your student can expect when having the thesis professionally edited. You can direct your student to the web site of the EAC to identify a suitable professional editor. You may wish to guide the student in the selection of the editor, ensuring that the one recruited has appropriate professional experience. You should also familiarize yourself with the EAC’s Professional Editorial Standards (http://www.editors.ca/resources/eac_publications/pes/index.html). This will inform you about the range of services that professional editors provide. Note: you may recommend that your student employ a professional editor; you may not require him/her to do so.
What services will a professional editor provide?

A professional editor may only provide the student with copyediting and/or proofreading services, as well as (perhaps) some stylistic editing (for definitions, see http://www.editors.ca/hire/definitions.html). According to the EAC’s Guidelines for Editing Theses, copyediting services include “editing for grammar, usage, spelling, punctuation, and other mechanics of style; checking for consistency of mechanics and for internal consistency of facts; inserting head levels and indicating the hierarchy of headings and subheadings and approximate placement of art (including graphs, tables, maps).” Proofreading services include “checking of formatted, edited material for accuracy of inputting, for adherence to a specified design, and for mechanical errors in text, such as spelling mistakes or small deviations from the editorial style sheet.” Stylistic editing is likely to be somewhat restricted in the case of a thesis: “Stylistic editing” means work to clarify meaning, polish language, and other non-mechanical line-by-line editing. Thesis supervisors may wish to authorize some or all of the following tasks. Editors can, if so instructed, minimize the implicit rewriting by querying and by marking spots where the text could be simplified or improved without amending it themselves.”

What services will a professional editor not provide?

A professional editor should not advise on or make corrections to the substance or structure of the thesis, though they may draw any such problems to the student’s attention. It is assumed that, as supervisor, you will have covered matters of substance and structure with the student.

What are my responsibilities as a supervisor whose student is working with a professional editor?

You should check with the student that a suitable and satisfactory arrangement has been established with the editor to ensure that the editing process proceeds responsibly and efficiently; this should be part of the contractual arrangement between yourself, the student, and the editor. You should check that the student has provided the editor with any style guide, manual, or other guidelines to which the thesis is required to conform. Whether the student’s thesis is being edited in hard copy or electronically, you should remind the student that they are responsible for reviewing each change or correction suggested by the editor before accepting it. The editor cannot take final responsibility for the integrity of the thesis. Editors are advised to return electronically edited material to students as PDFs, so that the author is required to consider and make each suggested change to their own working copy.

Should the professional editor be acknowledged in the prefatory matter of the thesis?

Yes. The acknowledgement should take the following form: “Professional editor, [editor’s name], provided [specific services], according to the guidelines laid out in the university-endorsed EAC’s Guidelines for Editing Theses, and the contract signed between Supervisor [name(s)], Student [name], and Editor [name].”
Senate Undergraduate Council met on 12 February 2013 and 5 March 2013 and agreed to forward the following items to Senate for approval. Council recommends that these items be included in the regular agenda. Items recommended for inclusion in the consent agenda are contained within a separate report.

Further details are available at: uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council.

FOR APPROVAL

BRIDGE TO ACADEMIC SUCCESS PROGRAM

1. Motion: To approve the proposed program as provided in Attachment #1.

NEW DEGREE TITLES

2. Motion: To approve the proposed rules re: degree titles as provided in Attachment #2.

NEW ACADEMIC PLANS  [effective 1 September 2014]

Faculty of Arts
Political Science
Honours Political Science – Public Policy and Administration Specialization

3. Motion: To approve the following proposed plan:

The Public Policy and Administration Specialization requires successful completion of 4.5 academic course units (nine courses):

- PSCI 260 – Canadian Government & Politics
- PSCI 331 – Public Administration
- PSCI 334 – Public Policy
- ECON 101 – Introduction to Microeconomics
- ECON 102 – Introduction to Macroeconomics
- four of:
  - PSCI 231 – Government and Business
  - PSCI 360 – Topics in Canadian Government and Politics
  - PSCI 363 – Canadian Constitutional Law
  - PSCI 403 – Topics in Politics and Business
  - PSCI 428 – The State and Economic Life
  - PSCI 431 – Canadian Public Policy
  - PSCI 433 – Topics in Canadian Public Administration
  - PSCI 434 – Comparative Public Administration
  - PSCI 439 – Global Social Policy
  - PSCI 461 – Canadian National Politics
  - PSCI 472 – Women and Public Policy

Notes:

1. In some circumstances, with the consent of the Associate Chair – Undergraduate Studies, a special subject, reading, or honours essay course may be added to the list of approved courses.

2. All courses taken towards the Public Policy and Administration Specialization as listed above will count towards the student's Political Science Honours average. If achievement in the non-major courses causes a drop below the honours average requirement of 75%, students will normally be allowed to continue in Honours Political Science, but without the specialization.
Rationale: This new specialization replaces the Specialization in Administrative Studies which has become unsustainable. The Public Policy and Administration Specialization recognizes a concentration of learning within the four-year Honours Political Science degree. It is intended to appeal to students with an interest in Canadian government and politics, and particularly those preparing for a career in areas such as public service, policy analysis, program evaluation, and policy advocacy. Students have expressed keen interest in opportunities to concentrate their studies in certain aspects of the political science discipline, and to earn a credential that recognizes this foundation of knowledge. The courses selected for the specialization will build students’ knowledge of the machinery of government, the relationships between elected officials and appointed administrators, and the actors, interests, and institutions involved in the development and implementation of public policy. The specialization will feed into the faculty’s Master of Public Service program, and is therefore part of the faculty’s broader effort to stream pathways through the political science program that build on faculty expertise and connect undergraduate to graduate programs. The faculty anticipates that this specialization will not suffer the enrollment problems of the old Administrative Studies program for the following reasons:

1. Branding. Public Policy and Administration is a name students recognize and it has the potential to draw a broader range of students to the specialization.
2. Fewer requirements. With only nine required courses to accommodate, it will be much easier for students to graduate with a specialization in Public Policy & Administration than it was in the old specialization, which had 14 required courses. It will also be easier to complete the specialization as part of a joint honours degree.
3. Capacity. As a result of new hires in the past two years the department now has the capacity to offer a greater number of public policy and public administration courses on a regular basis. It will become much easier to complete the required courses for the degree.
4. Draw of the Master of Public Service (MPS) program. Applications and enrollments in the faculty’s MPS have grown each year since it began in 2010, and the faculty anticipates that the graduate program will help draw undergraduate students to the University of Waterloo to study public policy and public administration. It would be odd to have a specialized graduate degree in Public Service without some kind of an analogous undergraduate program.

ACADEMIC PLAN INACTIVATION  [effective 1 September 2014]

Faculty of Arts
Political Science
Honours Political Science (Administrative Studies)

4. Motion: To approve the inactivation of the Honours Political Science (Administrative Studies) plan.

Rationale: This specialization has had low enrollment for some time. This is partly because it is very difficult to graduate from the specialization as written (requires 14 courses). The political science portion of it requires choosing from a fairly constrained list of courses; changes in department personnel have meant that not all the courses are offered on a consistent basis. The specialization also requires four courses from outside the discipline. The effect is that even if a student structures his/her coursework very carefully from first year, he/she may be prevented from graduating because of the way courses are scheduled. A student who declares the plan later in his/her degree will find it very difficult to finish. Recent graduates from the specialization have only been successful because the department has accepted special studies courses in lieu of political science courses that are not taught on a regular basis. The department also believes that the study of public administration has low demand simply because it is an unfashionable area of study at the undergraduate level.
ENGLISH LANGUAGE PATHWAYS FOR THE UNIVERSITY OF WATERLOO

Prepared by

Julie Hummel
Director, International Recruitment

Tanya Missere-Mihas
Director, English Language Centre

January 2013
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Rationale for adopting a pathways program .................................................................................... 4
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**Strategic context**

The University of Waterloo has clearly stated its commitment to establishing the institution’s international focus. Implementing a pathways program is one of the academic components critical to achieving this goal. By providing a pathway, we enable academically qualified undergraduate applicants from all around the world to be admitted to Waterloo based on successful completion of an English language program. Many of our global and Canadian competitors have some form of pathway into full-time undergraduate studies for students whose first language is not English. These range from homegrown programs to partnerships with established providers. Given Waterloo’s intensive focus on co-op, the elements of a pathways program preparing students for full-time studies must also include skills required to be successful in co-op.

Key internal needs that would be met by the development of a pathways program include

- reaffirming to internal stakeholders our commitment to internationalization and our response to the 2012 Stubley report on English language competency
- improving the University’s brand recognition in priority recruitment markets, making it more accessible for academically qualified students who lack the English language skills to be enrolled directly into undergraduate studies
- preparing students for academic success by strengthening not only their language skills but also their familiarity with North American teaching styles and Waterloo’s academic and social culture
- becoming a significant source of revenue for the University

Key external needs that would be met by the development of a pathways program include

- meeting the demand for access to Waterloo in key international markets, e.g., Turkey, South America, Africa, Saudi Arabia, etc.
- making it significantly easier for students to obtain the required visas for study by giving them an offer of admission (with conditions) into the University
- demonstrating good faith to parents and the guidance community, who are key influencers on where students attend
- reinforcing our commitment to student success.

A pathways program will help the University meet the following Sixth Decade Plan goals:

- Academic excellence – attracts highly desirable students who are currently not admissible to Waterloo but are attending high quality institutions around the world
- International undergraduate student enrollment growth to 20% – opens admission to more high-quality students
- Student Success – benefits students by tailoring support during transition to regular academic studies
• Internationalization – provides Waterloo with increased international exposure due to an increased number of international undergraduate students.

Current pathways programs at Waterloo

The University currently uses pathways into full-time studies in a number of ways.

Our Graduate Studies department admits students to full-time graduate studies based on successful completion of the English for Academic Success (EFAS) program offered by the English Language Institute at Renison University College.

Our Faculty of Mathematics currently admits approximately 300 students to full-time studies based on successful completion of the English Language for Academic Success program at Conestoga College.

Our Faculty of Arts admits a very small number of students (fewer than 20) into full-time studies based on successful completion of the advanced-level English for Academic Success (EFAS) program offered by Renison’s English Language Institute. Arts also admits 2+2 students similarly.

Our Faculty of Science and Faculty of Environment admit 2+2 students based on successful completion of the upper Intermediate level of Renison’s EFAS program.

For 2+2 students, the current EFAS model (in which students spend six weeks in a summer term prior to entering full-time studies) will be continued, based on faculty and student needs.

Rationale for adopting a pathways program

A comprehensive program which provides a pathway for undergraduate students applying to all academic plans, who meet all admissions criteria but the English language requirement, would be of great benefit to the University. This program would increase the number of students we could admit into first year, helping us to achieve our Sixth Decade goals and providing a valuable and continued source of revenue to the institution.

We are currently losing excellent students to other top universities in Canada and around the world, which have already implemented such pathways programs to attract and graduate the world’s best students. Many of these students would like to attend Waterloo but have not been provided with the time or opportunity to fulfill English language requirements while embarking on their undergraduate studies. Attracting and admitting these students would help us achieve our goals of drawing top talent from around the world and increasing our brand awareness and global reach.

In the proposed model below, students would be encouraged to live in residence while attending the program, an essential part of the support and success network. There would be an integral component of student success built into this model, with programming designed for all students in BASE delivered by our Student Success Office. This model potentially benefits the University by increasing demand for spaces in residence in all three terms.
There are some obvious challenges that need to be addressed before we are able to implement a pathways program. We are currently not set up to admit students into winter or spring terms for most programs. Depending on the length of time required for English preparation (four months or eight months), we need to reimagine our current scheduling and admissions structure. Although there has been some talk of a pathways program over the years, the discussion appears to have been stalled by confusion about the implications. If there is institutional will to proceed, this barrier can be overcome.

Rationale for partnering with the English Language Institute (ELI) at Renison University College

- The ELI is recognized by senior administration as Waterloo’s English language program.
- ELI is accredited by Languages Canada, TESL Canada, and TESL Ontario as a recognized provider of ESL courses and ESL teacher training.
- Revenue generated through the pathways program stays on campus.
- Successful completion of Renison’s English for Academic Success program is Senate-approved as meeting Waterloo’s English Language Requirement for both undergraduate and graduate studies.
- The Graduate Studies Office and Faculties of Arts, Science, and Environment already use the ELI as their source for English Language preparation.
- The ELI has developed its EFAS program to uniquely suit the needs of Waterloo students who are enrolled – or aspire to enrol – in cooperative education programs.
- EFAS curriculum has won awards – Lyn Howes award, 2006.
- The EFAS curriculum has been standardized and aligned with the Common European Framework (CEF).
- The academic and community environment in the ELI supports international students’ learning.
- ELI offers ESL credit courses that provide English language support for students as they move to regular studies – seamless language support through the transition period.
- ESL undergraduate writing courses meet the ELPE milestone.
- The ELI aligns itself with Waterloo protocol by working with the Registrar’s Office and Graduate Studies Office for admission and recruiting purposes.
- In Fall 2010, the ELI underwent a successful university-led program review, which strongly encouraged the ELI to align its goals with Waterloo’s objectives.

A crucial focus for this planning is the university’s “Sixth Decade Plan” which aims ambitiously to increase global recruitment of international students (doubling the present number of international undergraduates from 10% to 20% and increasing the already high enrollment from 27% to 30% for graduate programs) as well as international research and educational connections. To achieve this aim successfully, the university requires the ELI’s expertise and services in language teaching and learning. Correspondingly, the ELI needs to expand, enhance, and focus its position, communications, and relations within the university and its academic units. - Program Review Report, December 6, 2010

- ELI’s expertise and desire to grow and Waterloo’s need for a pathway program create an ideal opportunity for synergy between the University and the Institute.
Accountability framework

The framework was developed by tying the specific accountability measures to the University’s foundational pillars identified in the mid-cycle review: Academic Excellence, Student Experience, and Internationalization. One of the three goals in the mid-cycle review is to “enhance student opportunities and experience.” Working with IAP, we are developing an accountability framework with which to measure all of these goals and objectives. Essentially, a student who enters the university through BASE will be deemed successful as measured by his or her academic progress and student involvement on campus.

The overarching goal of BASE is to attract highly desirable students who meet or exceed all admission requirements but English language scores. The success of students admitted through BASE will be measured by academic progression and student involvement on campus. This pathway has been developed to support students in their transition year to degree studies.

**Academic excellence**
Goal: Students enrolled in BASE will progress to degree studies.

**Student Experience**
Goal: Students enrolled in BASE will engage in campus activities.

**Internationalization**
Goal: Waterloo will raise its international profile because of increased opportunities for attracting high calibre international undergraduate students.

**BASE Structure**

**Minimum Admissions Scores**

<table>
<thead>
<tr>
<th>Terms</th>
<th>iBT</th>
<th>IELTS</th>
<th>MELAB</th>
<th>CAEL</th>
<th>PTE (Acad)</th>
<th>EFAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Term</td>
<td>83</td>
<td>6.5</td>
<td>78</td>
<td>60</td>
<td>59</td>
<td>300 with ≥ 75%</td>
</tr>
<tr>
<td>(Group 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two Terms</td>
<td>74</td>
<td>5.5</td>
<td>70</td>
<td>50</td>
<td>50</td>
<td>200 with ≥ 80%</td>
</tr>
<tr>
<td>(Group 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300 with 70-74%</td>
</tr>
</tbody>
</table>

Terms: iBT, IELTS, MELAB, CAEL, PTE (Acad), EFAS
Entrance Language Requirements for BASE

Exit Language Requirements
To successfully complete the BASE program a student must

- complete either a four- or eight-month program, as determined by the student’s EFAS placement test or language proficiency test
- complete BASE and achieve an overall minimum final average as determined by Faculty
- complete a 0.5 academic credit and achieve an overall minimum final average as determined by Faculty.

Overview

Group 1
Term 1
Students enrol in

- one 0.5 academic credit
- EFAS 32
- EFAS 34
- EFAS 36
- Bi-weekly meetings with instructors
- Weekly workshops and information sessions

Total student hours = 25 hours/week

Term 2
Students enrol in ENGL 129R and up to 1.5 academic credits.

Term 3
Regular Studies
Student progress through BASE in Group 1

Group 2
Term 1
Students enrol in

- one 0.5 academic credit
- EFAS 32
- EFAS 34
- EFAS 36
- Bi-weekly meetings with instructors
- Weekly workshops and information sessions

Total student hours = 25 hours/week

Term 2
Students enrol in

- one 0.5 academic credit
- EFAS 32
- EFAS 34
- EFAS 36
- Bi-weekly meetings with instructors
- Weekly workshops and information sessions

Total student hours = 25 hours/week

Term 3
Students enrol in regular studies and ENGL 129R.

Term 4
Students enrol in regular studies.
Student progress through BASE in Group 2

Pilot project – 2013-2015

For the first year of the pilot project, the numbers are expected to be small. Having a small number of students in this first year should contribute to the smooth delivery of a new interdisciplinary project involving numerous players on campus. Because this project involves most Faculties and support units on campus, it is important to develop the infrastructure during this first year so that growth is sustainable.

Accountability framework
The pilot project is intended to last for two years (admissions 2013 and 2014). The pilot will be judged from a developmental perspective, which will allow for observation and adjustment of admission and progression practices throughout the pilot. We will also assess the program as a multidisciplinary, campus-wide approach to a project. We will meet with stakeholders to ensure that organizational structures are in place and measure the strength and weaknesses of this approach, best practices, and areas for improvement.

Participants
The Faculty of Engineering - ECE
The Faculty of Arts - Honours Arts, SDS
The Faculty of Environment – ERS, Geography, Planning
The Faculty of Applied Health Studies – all programs
The Faculty of Science - all programs, except Biotech/CA and Science/Aviation
**Admission Criteria**

**Minimum Entrance Language Requirements to BASE (Engineering)**

<table>
<thead>
<tr>
<th>Terms</th>
<th>iBT</th>
<th>IELTS</th>
<th>MELAB</th>
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<td>50</td>
<td>50</td>
<td>200 with ≥ 80% or 300 with 70-74%</td>
</tr>
</tbody>
</table>

**Entrance Language Requirements to BASE (ARTS, AHS, ENV, and SCI)**

<table>
<thead>
<tr>
<th>Terms</th>
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<td>50</td>
<td>50</td>
<td>200 with ≥ 80% or 300 with 70-74%</td>
</tr>
</tbody>
</table>

**Proposed credit courses**

**Credit courses for Engineering (ECE)**

**Fall 2013**

- ECE 105: Physics of Electrical Engineering 1

**Winter 2014**

- ENVS 195: Introduction to Environmental Studies
- MATH 137: Calculus 1 for Honours Mathematics

**Fall 2014**

- CHE 102 + ECE 100A + ECE 140 + ECE 150 + CSE + ENGL 129R: Regular Studies plus ENGL 129R
Credit courses for Faculty of Arts, Faculty of Environment, and Faculty of Applied Health Science (Recreation and Leisure)

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2013</td>
<td>PSYCH 101</td>
<td>Introductory Psychology</td>
</tr>
<tr>
<td>Winter 2014</td>
<td>ENVS 195</td>
<td>Introduction to Environmental Studies</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>ENGL 129R</td>
<td>Regular Studies plus ENGL 129R</td>
</tr>
</tbody>
</table>

Credit courses for Faculty of Science and Faculty of Applied Health Science (Kinesiology and Health Science)

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2013</td>
<td>PSYCH 101</td>
<td>Introductory Psychology</td>
</tr>
<tr>
<td>Winter 2014</td>
<td>CHEM 120</td>
<td>Physical and Chemical Properties of Matter</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>ENGL 129R</td>
<td>Regular Studies plus ENGL 129R</td>
</tr>
</tbody>
</table>
Degree Titles

University of Waterloo offers 18 different undergraduate degree titles. These degree titles fall into three groups:

Traditional Waterloo degree titles: BA; BSc; BASc; BMath; BCS; BES
Professional degree titles: BAFM; BAS; BScPhm; OD; BSW
Non-traditional degree titles: BGBDA; BCFM; BIS; BKI; BSE; BHP

As new programs are developed there is a temptation to create new degree nomenclature. This may result in a proliferation of new degree names which may create a lack of understanding and confusion by university applicants together with mistrust by employers (co-op and others).

The issue of proliferation of new degree names was discussed by Senate Undergraduate Council and at its 12 February 2013 meeting, Council agreed to recommend to Senate that the number of new degree titles be limited with the following principles:

New programs should focus on using either traditional Waterloo or professional degree titles. Specializations and spin-off plans should be related to a program and not to a degree title. Exceptions to the above will be considered when the plan is favourably evaluated against the following criteria:

- There is an already established recognition in the market place for the new degree title.
- The new degree is not a creative repackaging of mostly existing program content already within a traditional or professional degree.
- To shoehorn the new program into an existing structure would be inappropriate for some compelling reason(s).
The Task Force on Support for English Language Competency Development at the University of Waterloo: Final Report

Submitted: October 2012

Task Force Members:
Sheila Ager, Classical Studies
Serge D’Alessio, Office of the Dean, Mathematics
Audrey Olson, Languages Institute, Mount Royal University
Gordon Stubley, Mechanical and Mechatronics Engineering (Chair)
Bud Walker, Student Services
Task Force on Support for English Language Competency Development at the University of Waterloo: Final Report

Executive Summary

English language competency, simply put, is crucial for University of Waterloo students. It underpins every task that the university requires of them, providing the foundation they need for deep learning. Likewise, language and communication skills are vital in the workplace, whether for students on a co-op work term or for graduates pursuing their careers. Moreover, the university’s reputation for excellence rests largely on the performance of its students when they move onto careers or higher learning.

However, average scores on the English Language Proficiency Exam (ELPE) have dropped 10 points over the past 10 years. According to anecdotal evidence, many Waterloo faculty members believe that students who meet the ELPE admission requirements do not necessarily have the language skills required to be deep learners in their discipline. Analysis of work term performance co-op employer evaluations of engineering students indicates that employers have similar concerns about students’ workplace communication skills.

A task force was therefore struck in June 2011 to respond to these concerns. Over the course of fall 2011, the Task Force consulted with the academic units on campus involved in developing English language competency among Waterloo students, and it reviewed relevant indicators, pertinent research literature, and descriptions of supports provided at other institutions.

The process revealed that the university boasts many strong resources and programs to help students develop English language competency. At the same time, significant gaps were evident, as was the lack of a cohesive, university-wide approach.

The Task Force concluded that an effective approach to developing English language competency among all University of Waterloo undergraduates must address the distinct needs of both Native English Speaking (NES) students and Non-Native English Speaking (NNES) students, and the distinct needs of different types of NNES students. It must address all four components of language competency: speaking, writing, reading, and listening. It must be integrated with discipline-specific courses. Finally, it must encompass every year of study, reflecting the fact that language competency is continuously developed.

The report therefore proposes a vision of how language competency can be developed by all students within all programs.
### Stage and Strategy

<table>
<thead>
<tr>
<th>Stage</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry: Admission requirements and processes</td>
<td>Maintain the existing Ontario Grade 12 U English credit requirement; for NNES students, maintain minimum test scores for IELTS and TOEFL (iBT); provide a bridge program for NNES students who fail to meet this standard but have strong potential in their intended discipline</td>
</tr>
<tr>
<td>First Year: Building a foundation for university-level competency</td>
<td>Establish a 0.5-credit course in each program that will develop a foundation for English language competency; offer NNES students the option of a mixed NES/NNES setting or NNES-only setting</td>
</tr>
<tr>
<td>Second Year: Honing skills within the discipline</td>
<td>Establish at least one second-year course in each program that focuses on discipline-specific abilities and language competency</td>
</tr>
<tr>
<td>Upper Years: Demonstrating mastery</td>
<td>Ensure students in all programs have the opportunity to practice their language skills in a range of activities that demonstrate their mastery of language and communication within their discipline</td>
</tr>
</tbody>
</table>

While the Task Force’s mandate did not include postgraduate studies, this vision is equally applicable to language competency development at the graduate level with the recognition of certain characteristics unique to graduate students.

This report does not offer a comprehensive set of recommendations — a process that will require further research and resources. However, it concludes that implementing the vision will require central leadership, an investment of resources, and the commitment and involvement of the many units on campus with skills and expertise in English language competency development. Above all, it calls on the university to make English language competency a core value at Waterloo: for the sake of student success and the institution’s reputation for excellence.
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<td>Bridge to Academic SuccEss</td>
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<td>EFAS</td>
<td>English for Academic Success (Renison)</td>
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<td>ELAS</td>
<td>English Language for Academic Success (Math, Conestoga College)</td>
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<td>ELI</td>
<td>English Language Institute (Renison)</td>
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<td>English Language Proficiency</td>
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1 Introduction

There is growing university-wide concern regarding the English language competency of Waterloo’s undergraduate students. This concern is based on various metrics such as declining trends on the English Language Proficiency Exam (ELPE) performance and on co-op employer dissatisfaction. The latter is particularly damaging to Waterloo’s reputation, given that co-op is a founding and defining feature of this institution.

Two changes over the last decade appear to have had an impact on the English language skills of the student body. First, Ontario has implemented significant changes in its high school curriculum. Due to diminished practise time at the high school level, it is reasonable to presume that there has been an overall decrease in the average students’ competency in the use of English language skills, especially in the academic setting. Second, the number of the Non-Native English Speaking (NNES) students in both co-op and regular programs at Waterloo has increased compared to the number of Native English Speaking (NES) students. This trend is expected to continue, since not only is it one of Waterloo’s Sixth Decade goals, it is also endorsed by the Government of Ontario.

A task force was therefore struck in June 2011 by Geoff McBoyle, Vice-President Academic & Provost, to respond to these concerns. The Task Force on Support for English Language Competency Development at the University of Waterloo included members with a breadth of expertise and perspectives:

- Sheila Ager, Classical Studies
- Serge D’Alessio, Office of the Dean, Mathematics
- Audrey Olson, Languages Institute, Mount Royal University
- Gordon Stubley, Mechanical and Mechatronics Engineering (Chair)
- Bud Walker, Student Services

The Task Force was requested to

- provide a brief overview of the University’s current English language support services, courses, and programs;
- characterize the English language skills of Waterloo’s students based on available admissions data, English Language Proficiency Exam (ELPE) scores, marks in selected larger “writing-intensive” courses, and interviews with students and with instructors in these courses and within the English Language Proficiency Program and the English Language Institute;
- characterize the nature and types of English language skill deficiencies;
- assess the current needs for English language support services and programs and characterize the university’s ability to meet this demand;
characterize existing good exemplars, if available, of broad English skill development programs at institutions similar to Waterloo in terms of program design, required resources, and measured effectiveness;

project future needs/demand (3–5 years out) based on trends and future enrolment projections; and

identify top priorities in need of further exploration.

Work began in September 2011. During fall 2011, the Task Force met with representatives from

- the English Language Proficiency Program,
- the English Language Institute (Renison University College),
- the PD2 (Critical Reflection and Report Writing) instructional team,
- the Department of English Language and Literature,
- the Faculty of Mathematics and Conestoga College’s English Language for Academic Success (Math/ELAS) program, and
- Co-operative Education and Career Services.

In addition, the Task Force reviewed relevant indicators of English language competency and attitudes, pertinent research literature, and descriptions of supports provided at other institutions. The findings were synthesized in winter and spring 2012 and presented in the current report.

The remainder of the report is structured as follows:

- Section 2 sets the context for the Task Force’s vision. It establishes the importance of English language competency in meeting Ontario’s Undergraduate Degree Level Expectations, in fulfilling the University of Waterloo’s commitment to excellence, and in contributing to the academic and lifelong success of the University’s students, regardless of mother tongue.

  It also describes the skills that contribute to English language competency and the ways they are applied within a university setting. Finally, this section contrasts the needs of different groups of Waterloo students based on their type of exposure to the English language.

- Section 3 lays out the Task Force’s vision for the development of English language competency at Waterloo. The proposed approach emphasizes continuous development over the course of each student’s education, with specific strategies outlined for admissions, first year, second year, and upper years.

- Section 4 presents a plan for achieving this vision. It describes the existing programs and stakeholders that contribute to the development of English language competency at Waterloo and then proposes how — with high-level leadership and an appropriate
investment of resources — these could be realigned within a new infrastructure to achieve the vision set out in Section 3.

- The report concludes with lists of references cited and further readings that shaped the Task Force’s approach.
2 Background

2.1 Institutional Educational Context

2.1.1 Ontario’s Undergraduate Degree Level Expectations

The University of Waterloo, like its sister institutions in Ontario, has adopted the six Undergraduate Degree Level Expectations (UDLEs) proposed by the Ontario Council of Academic Vice-Presidents (2007). The six UDLEs set out the skills and knowledge that graduates of baccalaureate and bachelors programs at Ontario’s publicly assisted universities are expected to achieve. In adopting this framework, Waterloo and other Ontario institutions recognize that English language competency directly influences students’ abilities to meet portions of the first four UDLEs, as cited below:

1. Depth and Breadth of Knowledge: a developed ability to i) gather, review, evaluate, and interpret information; and ii) compare the merits of alternative hypotheses or creative options, relevant to one of more of the major fields in a discipline.

2. Knowledge of Methodologies: ... an understanding of methods of enquiry or creative activity, or both, in their primary areas of study that enables the student to ... describe and comment upon particular aspects of current research or equivalent advanced scholarship.

3. Application of Knowledge: a) the ability to review, present, and critically evaluate qualitative and quantitative information ... c) the ability to make critical use of scholarly reviews and primary sources.

4. Communication Skills: ... the ability to communicate information, arguments, and analyses accurately and reliably, orally and in writing to a range of audiences.

While all Ontario institutions recognize the importance of English language competency, there are three features of the Waterloo context that demand particular attention be given to supporting the development of Waterloo students’ English language competency:

- the presence of co-operative and other forms of experiential education
- the size and nature of the student population for whom English is not a native language
- Waterloo’s push for excellence

Waterloo distinguishes itself from other Ontario (and Canadian) institutions by the extent and breadth of its co-operative education programs in all six faculties. Approximately 60 per cent of Waterloo undergraduate students are enrolled in the university’s 120 co-op degree programs. Waterloo is also committed to offering a mix of experiential learning opportunities to all
students, including those in regular degree programs. This commitment is evident in Waterloo’s adoption of an additional UDLE specific to experiential learning:

7. **Experiential Learning**: articulate their learning from experiential or applied opportunities. (University of Waterloo, “Degree-level expectations”)

By specifying that students must be able to articulate their learning, this UDLE implies that they must have the competency to describe the complex growth associated with experiential opportunities. Such competency is also crucial to the effectiveness of experiential learning opportunities in other ways, directly influencing the ability of students to obtain jobs in a competitive interview and selection process, to learn necessary professional and workplace skills in a relatively unstructured learning environment, and to communicate findings, results, and concerns to colleagues and supervisors.

2.1.2 Waterloo’s Student Populations
For quite some time Waterloo has attracted top academic students to its undergraduate programs. According to the University of Waterloo website (“Waterloo facts”), the present average of entering undergraduate students is 87.2% — a clear indication of the academic quality of Waterloo students. However, as mentioned in the previous section, over the past decade there have been two significant changes to the background of these entering students that impact their language competency: changes to the Ontario high school curriculum and increasing numbers of NNES students. One obvious consequence of the change of the high school curriculum from five years to four years is that the time available for students to develop and practise language competency, especially at the senior high school level, has been reduced.

Also, the proportion of NNES students in both co-op and regular programs at Waterloo has increased compared to the numbers of NES students over the past decade. These NNES students are most commonly

- permanent residents in Canada or Canadian citizens who do not speak English as their first language, or
- international visa students.

These numbers are expected to rise in the coming years for two reasons. One is the Sixth Decade Plan, in which Waterloo has stated its commitment to increasing the numbers of international visa students at the university. As evidence of this, there appears to be an increasing number of degree program forms, such as 2+2 programs, that will further increase the size and diversity of the NNES student population. The other factor is present Canadian population demographics, which show an increase in permanent residents and Canadian citizens who were born outside the country (Citizenship and Immigration Canada, 2011).
Both NNES and NES students need to develop competency to ensure academic success in both the classroom and experiential learning environments and to meet the UDLEs. However, the attributes and needs of these two student populations differ, as do the needs and attributes of different segments of the NNES student population. For example, NNES students coming to the Waterloo campus in the third year of a 2+2 program will have different competencies compared to students who have spent their first two years on campus. For a more detailed discussion of these needs and attributes, see Section 2.4.

2.1.3 Waterloo’s Commitment to Excellence
In both its Sixth Decade Plan and the present Mid-Cycle Review, Waterloo has committed to developing the excellence that will lead to its global recognition as a top-tier university. Waterloo’s students are a clear vehicle for widely demonstrating the excellence of a Waterloo education through their abilities and accomplishments. It is noteworthy that many current top-tier universities, including Harvard, Stanford, and the University of Toronto, explicitly recognize the importance of English language competency in establishing their students’ success and have made the development of this competency in their student body a top priority. In its drive for excellence, Waterloo will need to ensure that its students are well placed to demonstrate the excellence of their abilities and accomplishments and to speak to the excellence of the education they received.

2.2 Forms of English Academic and Workplace Communication

2.2.1 Skills
As with any language, thorough competency in English requires mastery of a set of four distinct but interrelated skills: reading, writing, listening, and speaking. These skills fall into two categories: the “productive” forms of language (speaking and writing) and the “receptive” forms (reading and listening).

The productive forms require language-users to formulate comprehensible expressions. The receptive forms, on the other hand, require the user to comprehend the expressions of others, whether presented orally or in writing. These skills develop at varying rates and to varying degrees in each person. That is, even an adult native English speaker may be more adept at speaking than writing or at listening than reading, for example. Each skill also has particular sub-skills and constraints. For example, writing an academic essay — a productive skill — requires knowledge of and precision with grammar and spelling. In contrast, the task of reading — a receptive activity — does not generally require the same spelling knowledge or absolute precision of grammar. Even an oral academic presentation, while still involving productive skills, does not demand the precise formal grammar structures of an academic essay. Competency in
one form does not guarantee competency in the others, and the challenges inherent in mastering such competencies vary from one form to the next.

University course assessments tend to emphasize the demonstration of productive language skills over receptive ones. Students are thus apt to focus on the development of productive skills, especially writing skills. It is clear, however, that the ability to read and comprehend written English and the ability to understand spoken English are vital to a student’s academic success. Currently, this need is not adequately addressed in the university context, where the opportunities for developing receptive skills are very uneven.

University pedagogy starts with the general expectation that students should be able to understand and process orally delivered lectures; there is little opportunity for students to find assistance in improving this skill. This can present a challenge for NNES students in particular, and there are anecdotal accounts of some students resorting to taping lectures and listening to them repeatedly in order to understand them. The need to do so has obvious implications for students’ time management and stress levels, not to mention their ability to engage in deep learning.

2.2.2 Genres
In addition to distinguishing between the different forms of language and their requisite skills, a distinction needs to be made between different genres of communication within a given language. Academic, professional, personal, social, formal versus informal: these are all differing modes of communication, and the same individual will not necessarily have the same facility with all the modes. We would not expect individuals with no academic training to excel in the use of academic English, for example, even if they were native English speakers. Similarly, NNES students with extensive academic training in an English system might be comfortable with the vocabulary and syntax of academic English (or, more precisely, the vocabulary of their own discipline) but at the same time struggle to function in ordinary social conversation.

In the university setting, both productive and receptive English language skills focus on academic communication. For receptive skills, this takes the form of absorbing information from lectures, textbooks, and other readings. For productive skills, the most common forms are writing assignments, essays, reports, exams, and theses, and delivering seminars and oral papers. The forms of academic communication tend to be discipline-specific: critical analysis in a humanities subject is likely to be pursued through an essay-type assignment, while in the natural sciences such analysis could take the form of a laboratory report. Nevertheless, the requirement for language competency is crucial across all disciplines.

While academic genres dominate in the context of the university, they are not the only genres of communication. The important role played by co-operative education at the University of
Waterloo means that its students are regularly exposed to workplace and professional genres, such as resumés, business letters, reports, professional assessments, memoranda, e-mail, and various other types of workplace communication. Students are thus required to develop skills and display competency in these non-academic modes of communication as well.

Finally, Waterloo students encounter public communication genres on a daily basis, such as media (television, newspapers, internet), social communication, public speaking and debating. All of these are genres of communication require both productive and receptive skills.

2.3 A Core Skill for Academic and Lifelong Success

Since the University of Waterloo is an English-language institution, its various modes of pedagogical delivery and assessment require that students have sufficient competency in the English language to comprehend and to perform to high standards. English language competency underpins every task that the university requires of its students, whether it is a relatively simple matter of being able to follow instructions on a test or in a lab, or the more complex, intense, and sustained work involved in the production of a graduate thesis. Likewise, language and communication skills are vital in the workplace, whether for students on a co-op work term or for graduates pursuing their careers. Lifelong learning, which requires the ability to independently comprehend and communicate, is key to career enhancement and personal fulfillment. The view of this Task Force is that the university is well positioned to ensure that its students are provided with the core language skills necessary to succeed in all aspects of their lives.

2.3.1 Learning

The university aspires to have its students achieve a profound level of knowledge and understanding that will enable them to build on a sound foundation, integrate new knowledge as they encounter and acquire it, and engage in abstract and critical reasoning. The Undergraduate Degree Level Expectations (see Section 2.1.1) speak precisely to these goals.

The University of Waterloo has recently demonstrated its commitment to effective teaching and deep learning through such initiatives as the Task Force on Innovative Teaching Practices to Promote Deep Learning (Ellis et al., 2011). According to the deep learning task force, “deep learning is taken primarily to involve students retaining knowledge and, through making connections, applying that knowledge appropriately in new and different contexts.” The goals they identified emphasize depth of understanding and the ability to apply what has been learned in the past to new situations, in contradistinction to short-term memorization for the purpose of passing a particular test or course.
It goes without saying that the move beyond shallow learning to deep learning requires students to have a high level of competency in English. Rote memorization may (or may not) be achieved without full comprehension of a subject or the language of expression, but the kind of profound understanding and integrative reasoning that Waterloo hopes to instil in its students cannot be achieved without teaching and learning methodologies grounded in the various forms of English language communication.

2.3.2 Academic Assessment
Academic assessment of students relies virtually completely on their capacity for clear and correct communication. While it is true that some disciplines may rely more heavily on a mathematical or scientific language than on English, there is no program at the University of Waterloo that does not require its students to be able to communicate effectively in English.

It is in assessment that students’ productive skills, both written and oral, are most on display. Receptive skills are clearly of greatest importance in a classroom setting, as well as in many areas of independent learning outside the classroom (reading, online research, or any other assignment that requires a student to absorb information). However, very few metrics are applied to assessing a student’s skill in this area in the normal course of university functioning. The chief exception to this rule — and it is an important one — is in larger, lower-year classes, where testing is often limited to objective-style midterms and exams. In this scenario, a student’s ability to first grasp information and then to read and comprehend test questions is vital. However, assessment practices for such types of courses don’t distinguish between ignorance of the facts and failure to comprehend the question.

Standard pedagogical methodologies, at least at more senior levels, feature summative assessments\(^1\) of written or oral work such as papers, assignments, seminars, reports, and theses. Ideally, such regular summative assessments of writing and/or speaking also play a formative role: feedback on essays and assignments, for example, may guide a student in developing writing skills. There is a considerable gap between the ideal and reality on this point: many professors do not feel they have the time or capacity to comment on matters of English writing skills; many professors do not believe it is their responsibility to do so; and many students do not read, understand, or accept what comments might be made. It is also clear that opportunities to practise writing and speaking skills vary considerably between programs and faculties.

It should be clear that while assessment activities often rely heavily upon productive skills and that acquisition-of-knowledge activities rely heavily upon receptive skills, there is not a hard

\(^1\) Summative assessments are used to measure the degree of learning at a particular time and can be contrasted with formative assessments that are used to guide the learning process.
and fast separation of these skills between acquisition and assessment. A major exception — objective testing — has already been noted. Various other types of student work could also cross these boundaries: informal classroom discussion, for example. Likewise, a research essay that requires writing skills to produce also requires reading skills to research in the first place. The purpose of this section is not therefore to formulate any kind of rigid matrix, but rather to identify the range and significance of the various language skills in a student’s academic life.

2.3.3 Lifelong Skills
This report has already noted the importance of English language communication skills in a wide variety of genres, academic and otherwise. The university has recently moved in the direction of defining “student success” more broadly, viewing its role as one of preparing students for career and life success in addition to academic achievement. This expanded role grows logically out of the university’s natural responsibility to prepare students academically and is further enhanced by Waterloo’s particular mix of academic and experiential learning. Students who attend Waterloo can and should expect assistance in acquiring skills valuable in job placement, the workplace environment, peer communication, career and personal development, and lifelong learning. The university aims to graduate individuals who will be well-rounded and informed citizens. The ability to function in the English language — to read reflectively, listen critically, write analytically, and speak persuasively — is key to all these goals.

2.4 Native English Speaking and Non-Native English Speaking Students

2.4.1 Shared Attributes of NES and NNES Students
NES and NNES students at Waterloo share a number of attributes related to language development:

- expectations based on the National Survey of Student Engagement and other indicators
- skill in new language genres (discipline-specific and genres external to the classroom)
- developing maturity and sophistication of language use
- core skill built by practice, reflection, and exposure to expanding levels of complexity

Moreover, a number of variables affect the skill development in all students:

- individual motivation and interest
- context (both inside and outside a classroom)
- classroom methodologies
- curricula
- the type and frequency of exposure to language
• the type and frequency of language practice

2.4.2 Unique Needs of NNES Students
NNES students also demonstrate unique skills and abilities with language, which may also determine their specific needs for language support. Understanding these needs begins with understanding the diverse nature of this student body. NNES students at the University of Waterloo include the following groups:

• foreign-born citizens or permanent residents educated in the provincial school systems in Canada
• international students educated in academic cultures similar to Canada’s who are undertaking their entire degree at Waterloo
• international students educated in academic cultures quite dissimilar to Canada’s who are undertaking their entire degree at Waterloo
• international students completing part of their Waterloo education in their own country and then completing their degree in Canada

NNES students therefore demonstrate a variety of needs and abilities, depending on their language and cultural experience prior to arrival on campus. As one example, many students who immigrated to Canada as children or adolescents are exposed to a high degree of oral language through media and peers. As a result, they speak fluent, idiomatic English, with little accent and have little difficulty with listening and comprehending. However, those skills do not translate directly into reading and writing abilities, and there can be distinct weaknesses and gaps that affect academic progress. In contrast, a foreign-taught NNES may have completed a great deal of book-based study of language and have the ability to read text, have an extensive knowledge of academic vocabulary and even be able to produce accurate, if formulaic, written text but have had little awareness or exposure to the sound of the language and not be able to speak it fluently or understand it when others speak.

This highlights a key point: while vocabulary acquired through reading can be used in speaking or writing, and while listening to others provides valuable information that can be applied to speaking, strengths or weaknesses in any one skill do not guarantee nor indicate relative strength or weakness in the others.

That said, NNES students generally demonstrate weaker academic writing skills than their NES peers in three key areas: less breadth and accuracy of vocabulary, lack of accuracy and complexity in the use of grammatical structures, and weakness in differentiating appropriate register and structural components in written work. As a result, their work appears to be less complex or effective in the eyes of an NES reader (Hinkel, 2003, 2011; Silva, 1993).

In addition to variations in skill development, NNES students demonstrate variations in the ability to negotiate culturally determined language contexts, each with its own vocabulary,
degree of formality, and forms and standards. For example, culture determines the way that we interact with peers as opposed to superiors, in writing as opposed to speaking, in academic writing as opposed to business writing, or in friendly email or text messages as opposed to academic or business-related email. As with skill development, one cannot assume that facility with language use in one culturally determined context translates into ability in another context. To complicate the issue, many NNES students are streamed — by choice or otherwise — into interacting with peers with the same language or culture. Thus, they may not gain as much exposure to the Canadian context, reducing their likely degree of success both in the classroom and in the workplace.

While all Waterloo NNES students are required to meet language entrance standards that indicate their general facility with English, and while those Waterloo standards are as rigorous as the standards at equivalent institutions, language development does not stop with an offer of admission. Rather, it should be assumed that students will develop their language skills and their ability to use language in specific cultural contexts throughout the course of their university education.

In his report to the Ministry of Education of New Zealand based on a comprehensive review of research, Ellis (2005) identifies principles that constitute effective pedagogy for the acquisition of a second language in a classroom context (p. 1):

- NES students use more formulaic expressions than NNES students, and even advanced second-language learners will need instruction in appropriate formulaic expressions, as well as some ongoing focus on language rules.
- Instructors should focus on form of language, through direct instruction and also through corrective feedback in context.
- Learners require extensive exposure to and practice of the language they are acquiring. According to Ellis, “the more exposure they receive, the more and faster they will learn” (p. 38). This refers to exposure to both oral and written language, inside and outside the classroom.
- Socio-cultural interactions and the consequent negotiation of meaning that occurs in interactions are essential for developing proficiency.

These principles provide guidance in determining best practices for NNES students as they continue to develop both language and content knowledge in their time at Waterloo. Throughout its deliberations the Task Force has considered how this growing group of students can best be assisted in developing the academic, personal, and workplace communication skills expected of a successful Waterloo student.
2.4.3 Integrated Versus Streamed Approaches
Approaches to language instruction vary. There are teaching models that stream students into NES and NNES sections and models that mix NES and NNES students in sections. The research literature on the effectiveness of streaming is not conclusive. The recent study by Smollett, Arakawa and Keefer (2012) on academic performance of NNES students at OCAD University indicates that sheltering (streaming) NNES may be beneficial. There is also literature, such as Matsuda (1999), that indicates that an integrated approach to English language competency whereby NES and NNES students are taught together instead of being separated is more effective. This latter approach can be resource intensive, as it may require English as a second language (ESL) instructors working closely with faculty members on individual courses as well as preparing supplemental online material.

2.5 Specifics for Graduate Education
While the primary focus of the Task Force was on the undergraduate education experience, many of the observations outlined above also apply to graduate education at Waterloo. That said, there are several differences between the roles and impacts of English language competencies at the graduate and undergraduate levels that are worth noting.

Several attributes of the incoming graduate student population are noticeably different from those of the incoming undergraduate student population. One obvious difference is the increased percentage of international students: according to the University of Waterloo website (“Who we are”), international students represent 30 per cent of the graduate student population, compared to 10 per cent of the undergraduate student population. A second difference is increased average age. With this increased age comes a more developed sense of career path and, with that, a strong personal motivation to achieve both academic success and long-term professional success. While the increased fraction of international students in the incoming graduate student population translates into a larger fraction of NNES students, their strong motivation to succeed means that they are more likely to overcome their initial lack of English language competency. Thus, this initial weakness is less likely to prove a long-term impediment. The established academic strengths of these students also augur well for their success: most Waterloo graduate students were generally in the top 25 per cent (or higher) of their graduating undergraduate classes.

Like undergraduates, graduate students are exposed to a range of academic genres that depend, at least to a certain extent, upon the academic discipline. However, three genres almost universally dominate in all disciplines at the graduate level: the thesis, academic journal papers, and conference presentations. Competency in these genres is a necessary prerequisite
for both success in graduate studies and long-term success in the academic career that is a goal for many graduate students.

As discussed earlier, the university has a vested interest in ensuring that its students graduate with exemplary communication skills, as this helps to establish the reputation of the institution and its graduates. In the case of graduate students, there is a further benefit. Because graduate students are extensively used as teaching assistants for undergraduate course teaching teams, ensuring they have strong language competency produces teaching assistants who are able to be both effective communicators in the classroom and ideal role models for exemplary language competency skills.
3 A Vision for Continuous Development of Language Competency

What would the development of English language competency at Waterloo look like in five to ten years in order for both the institution and its students to achieve their full potential? In this section, a vision of how language competency can be developed by students within all programs is outlined. This vision is broken down into four components:

1. The Entry: Admission Requirements and Processes
2. The First Year: Building a Foundation for University-Level Competency
3. The Second Year: Honing the Skill within the Discipline
4. The Upper Years: Demonstrating Mastery

The development of this vision has been guided by three principles:

1. Strong English language competency is a significant contributing factor to a student’s ability to achieve deep learning and overall academic success.
2. Strong English language competency is necessary for students to achieve and demonstrate the UDLEs for all Waterloo degree programs.
3. English language competency is a core cognitive skill that is developed through continual practice with informed feedback and guidance.

Ultimately, this proposed vision is intended to ensure that all students who graduate from the University of Waterloo, regardless of program, meet the UDLEs associated with communication and are recognized in the workplace and wider community as able communicators and advocates for their disciplines.

3.1 The Entry: Admission Requirements and Processes
Students’ first engagement with Waterloo’s academic programs typically occurs at the admissions stage. First and foremost, the admission requirements for English language competency are intended to ensure that students have the necessary language skills to benefit from studies at the first-year level. The admission requirements also help shape students’ attitudes towards language competency. Setting and enforcing high admission standards sends a message that the development of language competency is a key component of any Waterloo degree program. However, this same implicit message has the potential to deter many applicants who have the potential to thrive in a Waterloo program but may not meet the English Language Proficiency (ELP) requirement. Representatives from the various faculties meet on an annual basis to review, and adjust as necessary, the institutional admission
requirements for English language competency to ensure the appropriate balance between maintaining admission standards and not deterring students who have the potential to thrive.

The current University of Waterloo admission requirements are as follows:

- for all students, a credit in Ontario Grade 12 U English or equivalent with minimum final grade of 70 per cent, and
- for NNES students, additional evidence that:
  - their four most recent years of schooling instruction have been in English, or
  - they have achieved language proficiency as measured by standard test scores from approved tests including, but not limited to, TOEFL (iBT) and IELTS, or
  - they have completed the advanced (400) level of the English for Academic Success program, at Renison University College, with an overall average of at least 80 per cent

(Note that individual programs may set higher admission requirements as appropriate.)

Table 1 shows the current minimum required test scores for the IELTS and TOEFL (iBT) tests for Waterloo, along with current minimum required test scores at several other Canadian universities with strong overall reputations. Generally speaking, the Waterloo requirements are equal to or stricter than those shown for other leading Canadian universities.

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<th>IELTS</th>
<th>TOEFL (iBT)</th>
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<td></td>
<td>Overall</td>
<td>Writing</td>
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<td>University of Waterloo</td>
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</tbody>
</table>

Given these relatively strict admission requirements for NNES students, it is highly possible that potential students may have excellent foundational knowledge in a particular discipline but not be able to enter studies in that discipline at Waterloo solely because they fail to meet English language skill requirements. For these students the Task Force envisions that Waterloo will provide a bridge program. This approach — similar to the existing Math/ELAS program described in Section 4.1.2 — would identify otherwise highly qualified NNES students applying
to programs and offer them conditional admission based upon strong performance in one bridging term of study with an adjusted course load. This course load would consist of

- one first-year course from their chosen program or discipline,
- two course equivalents on English language skills, and
- one course on skills necessary for academic success in a Canadian university.

Such a graduated entry would enable students to acquire appropriate academic and language skills while at the same time experiencing a supported integration into the Waterloo and Canadian culture. Providing this graduated entry would clearly demonstrate Waterloo’s commitment to developing student success.

3.1.1 The First Year: Building a Foundation for University-Level Competency

According to anecdotal evidence, many Waterloo faculty members believe that students who meet the admission requirements outlined above do not necessarily have the requisite language skills to be deep learners in their discipline. Parker, Fondacaro and Nespoli’s 2011 analysis of the co-op employer evaluations of Waterloo engineering students — a group where NES students form the majority — shows that the workplace skill most identified as needing improvement after the first work term was communication (written and oral presentations). In other words, employers believe that engineering students from Waterloo need to develop their English language skills. This particular analysis was restricted to the Faculty of Engineering. However, since the average ELPE scores of entering engineering students are consistently equal to or greater than the average ELPE scores of all entering students, this conclusion likely applies to students in most programs.

Moreover, the analysis of the co-op employer evaluations for engineering students shows that even after the fifth work term, the skill most identified as needing improvement remains communication. While it is reasonable to assume that employer expectations for senior students will be greater than for junior students, it seems clear that employers perceive Waterloo engineering students as having inadequate communication skills for career success, even at this advanced stage in their education. Thus, employers judge that Waterloo engineering students are not meeting UDLE 4: Communication skills. Corresponding data for students in other Waterloo programs is difficult to obtain. However, given the moderate emphasis on communication in engineering programs, it is reasonable to assume that this conclusion applies to students in many, if not all, Waterloo programs.
To ensure that Waterloo students have the necessary language skills for academic success and have the basis for developing language skills to meet the UDLEs, the Task Force envisions that each program will have a required 0.5-credit course that will develop a foundation for English language competency in the first year of study. Some programs may allow students to choose from a select group of centrally provided courses to meet this requirement, while others may develop very specific program courses to meet the requirement. While it is expected that there will be a range of foundation courses available to meet this requirement, all of them should have the following attributes:

- Both productive (writing and speaking) and receptive (reading and listening) modes of communication should be developed and practised.
- The expected outcomes should focus on those appropriate for academic study. By the end of the foundation course, students are expected to have sufficient language competency to:
  - write in academic genres such as essays, short descriptions or arguments, reports, and other types of documentation appropriate to their discipline;
  - read academic text in textbooks, books, journals, and other archival media; and
  - listen and speak in academic settings, including lectures, forms of peer-to-peer communication, and student presentations.
- While it is expected that students must meet minimum expected outcomes to achieve credit, the learning model employed in the teaching strategy should be a developmental one in which students are expected to practise and improve upon their own incoming skills.
- To promote student engagement, exercises should be relevant to their chosen discipline and allow students some element of choice to tailor the exercises to their individual needs.

It is beyond the scope and expertise of the present study to design a typical foundation course. The Task Force envisions that a variety of courses would be developed within the Department of English Language and Literature, the English Language Institute at Renison, and the individual faculties (the latter to provide a strong discipline perspective). The fourth section of this report discusses in more detail the resources required to achieve this. At this point, however, it should be emphasized that the instructional and subject expertise in the Department of English Language and Literature, the English Language Institute, and the faculties is complementary and that course design should draw upon expertise from a range of units.

As discussed in Section 2.4.2, approaches to language instruction vary and the research literature on the effectiveness of streaming or non-streaming based on incoming skill level or mother tongue is not conclusive. Given the number of faculties and programs, the Task Force
envisions that there will be sufficient foundation courses to offer students a range of teaching models. It is particularly important that individual NNES students have the option of building up their foundation skills in either a mixed NES/NNES setting or a setting focused on the needs of NNES students alone.

3.2 The Second Year: Honing the Skill within the Discipline
While successfully completing the proposed English language competency foundation courses should ensure that all students have the opportunity to develop the levels of competency required for success in their academic programs, it does not ensure that they will have sufficient competency to meet the UDLEs as they approach graduation. In particular, further language development is required to ensure that students

- achieve the levels of deep learning within their subject disciplines implied in the first three UDLEs (knowledge, methodology, and applications), and
- develop the skills to communicate their disciplinary knowledge and findings to a wide range of audiences, as required by the fourth UDLE.

It is noteworthy that both goals require tightly integrating the development of language competency with the development of discipline knowledge and skills. Therefore, the Task Force envisions that each program will have at least one second-year course with learning outcomes that include both discipline-specific abilities and language competency.

This strategy of combining the improvement of language competency with the development of discipline ability — often called “writing across the curriculum” — is based on the premise that through iterative writing, reading, speaking, and listening exercises, students develop a clearer and deeper understanding of their discipline knowledge (Bean, 2001). This approach necessarily entails reducing discipline-specific content in order to incorporate language competency development — a proposition that many instructors may greet with concern. However, it is crucial that instructors recognize this approach results in clearer and deeper learning, and thus it can actually increase long-term student understanding of their discipline-specific course content. In other words, sometimes “less is more.” A wide variety of strategies are available to instructors to integrate English language improvement and standards within their already-defined course curriculum. Assistance with such strategies is also widely available through a number of initiatives and support units focused on improving teaching at the university (see Section 4.1.2).

The Task Force recognizes that making this strategy a degree requirement for all programs may be difficult. For relatively structured programs, such as those in engineering, it should be
straightforward to specify first- and second-year courses that establish foundational competency and then hone that competency within the discipline. In programs where students do not need to select their majors until well into third year, it becomes more problematic to specify these degree requirements. However, the Task Force believes that it is reasonable to expect all students to take a foundation language competency development course in their first year and then to take a course in their second year designed to hone those skills within a subject area that will be relevant to their ultimate choice of a major or a specific discipline.

3.3 The Upper Years: Demonstrating Mastery

Once the foundation competency is established and honed, the Task Force envisions that students in all programs will have the opportunity to practise their language skills in a range of activities that demonstrate their mastery of language and communication within their chosen disciplines. Since the vast majority of students will already be undertaking activities such as report and essay writing and class presentations in their upper years, this should not require significant changes to implement.

There are, however, several aspects of the proposed vision that will require attention to ensure that intended degree outcomes are met:

- The expectation is that all students in all programs must demonstrate mastery of language before graduation by completing major activities within their programs. In other words, demonstrating English language competency must be a degree requirement.
- It is crucial that the expectations for demonstrating mastery be consistent with the students’ foundational preparation from their first and second years.

3.4 Postgraduate Studies

The focus of the Task Force has been on undergraduate studies, although the development of language competency is no less important for graduate students. However, given the high degree of independent study, both within and outside courses, that characterizes graduate studies, it is difficult for the Task Force to make meaningful specific proposals for the graduate programs.

What can be said is that the principles articulated in the proposed vision for undergraduate programs are equally applicable to the development of language competency at the graduate level, with the recognition that the degree of independence requires that the implementation of these principles be program-specific. Furthermore, there are several important differences
between graduate and undergraduate studies that should be considered. Specifically, language competency development for graduate students should account for the following facts:

- With international students representing 30 per cent of the graduate student population, pathway programs are particularly important for admission to graduate programs.
- International graduate students are typically highly motivated to develop English language competency, as this competency is viewed as necessary for career success in many international contexts.
- Several specific academic activities at this level, such as preparing and defending theses, rely heavily upon both written and spoken competencies.
- Graduate students often act as teaching assistants (TAs) and graders for undergraduate courses. For any undergraduate courses that explicitly develop language competency, all members of the teaching teams, including graduate student TAs and graders, should be role models for exemplary communication skills.
4 A Plan for Achieving the Vision

4.1 Existing Resources for English Language Competency Development

English language competency at Waterloo is presently promoted explicitly in the English Language Proficiency (ELP) requirement and implicitly in many program curricula through coursework and additional degree requirements. These are described below.

4.1.1 The English Language Proficiency Requirement

In order to obtain their degree, all Waterloo undergraduate students, regardless of program, are currently required to pass the English Language Proficiency Exam (ELPE) or to meet an alternate requirement if they fail the exam. In the ELPE, students are given one hour to write an impromptu essay of 300–500 words on one of three specified topics. Students are allowed to ask for clarification on the wording in the specified topics so that student vocabulary or knowledge of idioms is not a limiting factor. The exam is marked on essay organization, application of language, and use of common knowledge. Students generally attempt the exam in first year or prior to starting their first-year classes.

Depending upon faculty and program, the pass requirement for the ELPE is either 60 or 65 out of 90. Figure 1 (below) shows the overall pass rate of students attempting the ELPE from the 2003–04 academic year to the present. In the 2010–2011 academic year, the faculty pass rates of students writing the ELPE for the first time varied between 60 and 85 per cent. The pass rates are generally higher in faculties where students write the ELPE later in the academic year than in those where students write the ELPE early on. It is clear that the pass rate has dropped significantly over the last ten years. While there is no firm data comparing the pass rates for NES and NNES students, anecdotal evidence suggests that NNES students make up three quarters of those failing the exam.
When students fail the ELPE, there are a variety of paths they can follow to meet the ELP degree requirement. These include:

- **Re-write the ELPE**: Students can re-write the ELPE after their first attempt. Students are encouraged to meet with a tutor in the Writing Centre to review their ELPE and receive guidance on improving their writing prior to re-taking the exam. Students in engineering and software engineering are restricted to two attempts at the ELPE.

- **Attend an ELPE Review**: Students with scores within two to three marks of passing are given a passing grade if they schedule and attend a 25-minute session with a tutor in the Writing Centre.

- **Take ELPE Tutorials (formerly the Writing Clinic Program)**: Students with scores within five marks of passing can take the ELPE Tutorial Program. There are two versions of this: a nine-week program (in class or online) and three-week program (in class only). For the nine-week program, students attend weekly two-hour writing sessions in the Writing Centre and achieve a pass when they have successfully completed the program (three writing assignments plus the in-class final exam). There is capacity for 80 students per term, and there is always a waiting list. Students who are on the waiting list for the nine-week program can opt for the three-week program. This consists of three consecutive sessions of writing lectures scheduled at the end of each term; there is capacity for 300 students per term. Students then write the ELPE at the next scheduled exam. Students are limited to one term in the ELPE Tutorial Program.

- **Pass Approved Credit Courses**: Students who fail the ELPE may satisfy the ELP degree requirement by successfully passing an approved English writing course. Students in different faculties and programs have slightly different lists of approved courses to
choose from, and the required grades in these courses may vary between 60 and 65 (out of 100) depending upon the student’s faculty. Some of these courses, such as ARTS 101, are restricted to faculty-specific students who have failed the ELPE; some courses, such as ESL 129R, are restricted to NNES students but can be taken by students who have passed the ELPE; and some courses, such as ENGL 210E, are open to all students.

Depending upon faculty and program, students are expected to have met the ELPE requirement before the end of their 1A, 2A or 2B academic terms.

The Task Force, with input from Ann Barrett (Writing Centre) and Jay Dolmage (English Language and Literature), makes the following observations about the ELPE in the context of the proposed vision:

- The ELPE attempts to measure writing competency. It does not address the other three competencies that are necessary for effective learning and communication: reading, listening, and speaking.
- Students are expected to write a five-paragraph (“sandwich”) thesis-driven academic essay that models the argumentative answers expected in many university submissions. Focussing on this particular genre limits the exam’s applicability for several reasons:
  - Many of the suggested topics, such as “What roles have your parents or guardians played in your education?”, are more suited to a narrative genre.
  - The academic essay is only one of many genres students will be expected to use in their particular programs or disciplines.
  - Students cannot provide external sources or references in their argument; this makes the resulting essay a very limited model for the argumentative submissions expected at the university level.
- There is no well-established connection between performance on the ELPE and overall academic success. A Faculty of Mathematics faculty study (D’Alessio, 2012) shows that math students who have successfully completed the English Language for Academic Success (ELAS) program described in Section 4.1.2 have higher graduation rates than math students who were not in the ELAS stream. However, successful Math/ELAS students have an ELPE pass rate below 25 per cent, a figure well below the average pass rate for math students as a whole. A study of retention of first-year engineering students showed that there is limited correlation between students’ ELPE scores and either their 1A term averages or 1B term averages. Given the strong evidence that English language competency is a significant factor in student retention and success (Bean, 2001), these findings imply that the ELPE is not an effective measure of overall competency, at least for students in the math and engineering faculties.
• There is significant literature (Byrd & Nelson, 1995) to suggest that NNES students are disadvantaged in ELPE-type exams since they may not be familiar with the expected essay format, the question prompts may relate to unknown cultural content, and the minor errors of form within their writing may detract inordinately from the content.
• Out of the many paths that students failing their initial writing of the ELPE can take to satisfy the degree requirement, some do little to improve their development of language competency. These paths include simply rewriting the exam and attending an ELPE review.
• Students, quite justifiably, see the ELPE as a barrier that must be overcome. It is not seen as an engaging activity intended to help them develop language competency.

In summary, while the English Language Proficiency requirement and ELPE itself may have provided a significant impact in the 1970–80s, they are currently not well aligned with either the competencies required for academic success in existing Waterloo programs or the proposed vision for developing language competency across the university. As the vision outlined in the previous section is developed, the Task Force expects that the ELP requirement will be discontinued.

4.1.2 Other Mechanisms for Developing English Language Competency

While the Task Force did not conduct an exhaustive study or survey, a scan of the program requirements across the university indicates that there are many mechanisms that have the potential to help students develop language competency.

Core Courses Emphasizing Competency Development: Some programs have core courses that focus largely on the development of language competency. Examples include SPCOM 111 (Leadership, Communication, and Collaboration) for students in the Accounting and Financial Management program and ENGL 210F, Genres of Business Communication, for students in the Arts and Business programs. Few programs have required core courses with a large focus on competency development and, as can be seen in the two examples, the emphasis of existing courses does not precisely match that of the envisioned foundation core courses, which would aim to focus on development of a breadth of language competencies crucial for academic success.

Core Courses with a Significant Competency Development Component: Some programs have first-year core courses that include materials and activities that explicitly provide opportunities for students to develop language competency in the context of the program discipline. Many engineering programs, including the chemical, civil, environmental, geological, management, mechanical, and mechatronics engineering programs, have a 0.75 credit core course in 1A with explicit components on written and graphical communications. The mechanical engineering version also includes a component on oral communication. It was beyond the resources of the
Task Force to examine the content of such courses and compare them to the envisioned foundation courses or to determine the extent of such courses throughout all programs.

**Elective Courses:** Most programs provide students with some degree of free choice in courses within the program. Depending upon the program requirements, students may elect to take courses like ENGL 109 (Introduction to Academic Writing) or SPCOM 223 (Public Speaking) to improve their language competency. ENGL 109 typically attracts more than 300 students a term, while SPCOM 223 had enrolments of 268 students in winter 2012 and 578 in fall 2011.

**Activities in the Curriculum:** Many courses include activities with the potential to develop language skills, particularly written skills. These activities include writing lab reports, writing essays, and making class presentations. There is anecdotal evidence to suggest that as student enrolment has increased over the past two decades, the number and extent of these activities have decreased. Similarly, the amount of feedback possible, whether formative or summative, has also dropped. While it is difficult to track these changes over time, the National Survey of Student Engagement (NSSE) surveys from 2008 and 2011 give a measure of student perception of these activities at Waterloo compared to similar institutions in Ontario and elsewhere.

<table>
<thead>
<tr>
<th>Length of Report</th>
<th>UW Mean</th>
<th>Ontario Mean</th>
<th>U15 Mean</th>
<th>Public Institutions Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater than 20 pages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Year</td>
<td>1.55 (1.59)</td>
<td>1.40 (1.37)</td>
<td>1.37</td>
<td>1.25 (1.23)</td>
</tr>
<tr>
<td>4th Year</td>
<td>1.82 (1.85)</td>
<td>1.81 (1.85)</td>
<td>1.78</td>
<td>1.60 (1.59)</td>
</tr>
<tr>
<td>Between 5 and 19 pages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Year</td>
<td>2.18 (2.39)</td>
<td>2.30 (2.39)</td>
<td>2.21</td>
<td>2.15 (2.27)</td>
</tr>
<tr>
<td>4th Year</td>
<td>2.61 (2.63)</td>
<td>2.77 (2.86)</td>
<td>2.66</td>
<td>2.48 (2.54)</td>
</tr>
<tr>
<td>Less than 5 pages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Year</td>
<td>2.53 (2.52)</td>
<td>2.50 (2.49)</td>
<td>2.48</td>
<td>2.90 (2.98)</td>
</tr>
<tr>
<td>4th Year</td>
<td>2.53 (2.43)</td>
<td>2.60 (2.55)</td>
<td>2.58</td>
<td>2.94 (3.00)</td>
</tr>
</tbody>
</table>

As Table 2 reveals, students at all institutions were required to write fewer long reports and more short reports in 2011 than in 2008. The University of Waterloo was no exception: while first-year students were required to write more long reports, on average, than students at other Ontario universities, the Waterloo figures were otherwise very close to the Ontario mean.
Internal analysis (S. Smyth, personal communication, 2012) shows that there is very little variation requirements between faculties at Waterloo for the shorter report but that there is some variation between the requirements for medium-length reports (from 2.13 for fourth-year mathematics students to 3.05 for fourth-year environmental studies students) and for longer reports (from 1.46 for fourth-year mathematics students to 2.24 for fourth-year environmental studies students).

The data in Table 2 indicate that while Waterloo students were submitting fewer longer written works in 2011 than in 2008, they were submitting more written work than students at comparable institutions. However, the data in Table 3 (shown below) indicate that Waterloo students were generally preparing fewer drafts of written reports (and therefore presumably having less opportunity to receive formative feedback) than students at other comparable institutions.

Table 3: NSSE 2011 and 2008 responses to Question 1.c: “In your experience at your institution during the current school year, about how often have you prepared two or more drafts of a paper or assignment before turning it in?” (1= Never, 2= Sometimes, 3= Often, 4= Very often), NSSE 2008 responses are shown in brackets, ( ).

<table>
<thead>
<tr>
<th></th>
<th>UW Mean</th>
<th>Ontario Mean</th>
<th>U-15 Mean</th>
<th>Public Institutions Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year</td>
<td>2.12 (2.06)</td>
<td>2.34 (2.30)</td>
<td>2.26</td>
<td>2.67 (2.54)</td>
</tr>
<tr>
<td>4th Year</td>
<td>2.06 (2.12)</td>
<td>2.34 (2.32)</td>
<td>2.24</td>
<td>2.74 (2.31)</td>
</tr>
</tbody>
</table>

As Table 4 reveals, there has been very little change between 2008 and 2011 in how students believe their experience at Waterloo has improved their writing and speaking competencies. However, students felt their speaking competency developed less than their writing competency, and they generally perceive less development of writing and speaking competency than students at comparable Ontario institutions. This last point is ironic, given that the data in Table 2 indicate that students at Waterloo are expected to submit more written work than their peers at other Ontario universities.

Table 4: NSSE 2011 and 2008 responses to Questions 11 c and d: “To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?” (1= Very little, 2= Some, 3= Quite a bit, 4= Very much), NSSE 2008 responses are shown in brackets, ( ).

<table>
<thead>
<tr>
<th></th>
<th>UW Mean</th>
<th>Ontario Mean</th>
<th>U-15 Mean</th>
<th>Public Institutions Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing clearly and effectively</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Year</td>
<td>2.62 (2.63)</td>
<td>2.80 (2.78)</td>
<td>2.71</td>
<td>2.98 (2.92)</td>
</tr>
<tr>
<td>4th Year</td>
<td>2.82 (2.84)</td>
<td>3.02 (3.04)</td>
<td>2.95</td>
<td>3.07 (3.03)</td>
</tr>
<tr>
<td>Speaking clearly and effectively</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Year</td>
<td>2.38 (2.37)</td>
<td>2.57 (2.54)</td>
<td>2.41</td>
<td>2.83 (2.73)</td>
</tr>
<tr>
<td>4th Year</td>
<td>2.54 (2.61)</td>
<td>2.82 (2.86)</td>
<td>2.73</td>
<td>2.98 (2.88)</td>
</tr>
</tbody>
</table>
Work Reports and PD2: Part of the reason that Waterloo students report greater requirements for submitting longer written works is that students in co-op programs are required to write work reports or reflective essays (between three and four, depending upon the program). Work reports are expected to be relevant to the employer’s line of work or business practices and must contain an analytical component usually associated with the evaluation of a set of alternatives. Work reports are often, but not always, on a topic directly related to a task that the student has worked on during the work term. They are evaluated on their technical content, analysis, and written communication by the students’ academic units. Some academic units have separate evaluators for the grading of the technical content and the written communication, but other units use one evaluator per report to grade both technical content and written communication. Students receive feedback and a grade on each report, and the grades are reported on the students’ transcripts.

According to a 2010 survey of non-engineering co-op students (Pretti, 2010), the top three reasons students perceive for the work report requirements are to improve: i) technical report writing skills, ii) communication skills, and iii) analytical skills. In contrast, the top three skills that students say they developed through writing work reports are: i) report planning, organizing, and formatting, ii) following guidelines and instructions, and iii) written communication skills. In spite of these perceived benefits from writing work reports, students’ overall agreement with the statement “UWaterloo should continue to ask co-op students to produce work reports as a way of connecting work term and school learning” scored only 2.51 on a five-point Likert scale (1-strongly disagree, 2-disagree, 3-neither agree or disagree, 4-agree, 5-strongly agree).

Non-engineering co-op students take PD2 (Critical Reflection and Report Writing) during their first work term. This online module is offered to approximately 2,200 co-op students per year. The module includes a set of short writing exercises to build skill in proper grammar usage, reflection, and paragraph construction; a set of exercises on the mechanics of report formatting; and a report-writing exercise. Students write their report on one of four topics relevant to the co-op academic experience: learning styles, co-op as a model of learning, professional skills, and goal setting. Students are encouraged to submit a draft (which receives formative feedback) but do not receive any course grade for the draft. Students are required to pass the report-writing exercise in order to pass the module, and the PD2 report counts as the first required work report. Typical pass rates are between 80 and 90 per cent, while typical report averages are between 65 and 75 per cent.

Summary

In summary, there is a wide variety of opportunities for students to develop written competency and, to a lesser extent, speaking competency at the University of Waterloo.
However, these offerings are piecemeal, and the extent to which an individual student will be
able to benefit from them depends upon the student’s program requirements, the student’s
choice of courses, and the resource limitations imposed on instructors. Currently, the university
lacks a universal institutional focus that ensures that all students have the language
competencies to achieve the expected depth of learning in their discipline and to meet the
expected graduate outcomes in language competency and communication.

4.1.3 Major Support Units
This sub-section reviews the capabilities of four major units that support language competency
development at the University of Waterloo: the Writing Centre, the English Language Institute
(Rension University College), the Conestoga Language Institute (Conestoga College), and the
English Language and Literature Department. The sub-section concludes with a brief discussion
of other units of support.

The Writing Centre
The Writing Centre is currently a support unit in the Student Success Office with four full-time
staff members — a director, a coordinator of ELPE and Writing Clinic activities, a coordinator of
graduate student services, and an administrative assistant — and 11 part-time writing
instructors. The Writing Centre plays three primary roles:

1. administering the ELPE, including setting the exam, administering the writing of the
   exam, marking the exams, and reporting on overall student performance on the exam
2. supporting students who have failed the ELPE and are working to meet the ELP degree
   requirement
3. supporting graduate students in developing writing competency necessary for writing
   scholarly works, including theses and journal publications, and improving students’
   speaking skills

In addition to these primary roles, the Writing Centre also offers five two-hour workshops on
various aspects of “Writing for Success” and provides writing tutoring for all students. All of the
activities offered by the Writing Centre are heavily subscribed, and most activities have waiting
lists.

In considering how the Writing Centre resources align with the proposed vision for integrated
and continuous language competency development within each academic program, the Task
Force makes the following observations:

- The staff of the Writing Centre are a strong resource with skills and knowledge in
diagnosing levels of writing competency and providing individual student support for
written and some oral competency development. These skills and knowledge will be necessary to implement the proposed vision.

- Since the proposed vision integrates language competency development into the academic programs, it will be necessary to ensure that the resources of the Writing Centre are connected to the academic programs. While it is beyond the scope of the present study to recommend a preferred reporting structure and organization for the Writing Centre, it is apparent that the centre’s resources can be best utilized and developed if it reports to the academic director responsible for providing leadership in language competency development (see Section 4.2.1).

- Care has to be taken in establishing the Writing Centre’s physical space so that students do not associate any stigma with being seen in the space. In many institutions, similar support units are located in general student services complexes.

- The resources of the Writing Centre need to expand to include other language competencies, including reading, speaking, and listening.

The English Language Institute

Founded in 1994, the English Language Institute (ELI), based at Renison University College, offers three primary programs:

- a set of credit English as a Second Language (ESL) courses developed for registered Waterloo students
- English for Academic Success (EFAS), an intensive, non-credit study program in ESL to develop English skills and prepare NNES students applying to Waterloo for academic success
- Applied Language Studies (APPLS) for students interested in teaching or doing advanced studies in the field of ESL

ELI offers three ESL credit undergraduate courses (ESL 101R, ESL 102R, and ESL 129R) for undergraduate students and three ESL credit graduate courses (ESL 601R, ESL 6102R, and ESL 612R). In the 2010–11 academic year, 458 students were enrolled in the three undergraduate courses and 230 students were enrolled in the three graduate courses. ESL 102R and ESL 129R are ELPE replacement credits, and 80 to 85 per cent of the students in these courses are taking them to meet the ELP requirement.

EFAS runs four 14-week sessions per year. Three of the sessions have enrolments of 85 students, and the summer session has an enrolment of 140 (including a special six-week program for 2+2 students).
In Fall 2010, ELI and its programs underwent an external review under the *Guidelines for Academic Program Reviews at the University of Waterloo* (Cumming, Olson, & Sullivan, 2010). The external reviews recognized the expertise and leadership in ESL education that ELI provides to the Waterloo academic community and wider Canadian communities. The review goes on to make four broad recommendations:

1. Develop an overall strategic plan for an expanded role for ELI at the university.
2. Consolidate and validate curricula and assessments in relation to academic genres.
3. Expand and regularize personnel.
4. Utilize facilities and resources strategically.

The findings of the Task Force reinforce the first two recommendations of this earlier review.

In considering ELI’s alignment with the proposed vision of integrated and continuous language competency development within each academic program, the Task Force makes the following observations:

- Consistent with the first recommendation of the 2010 program review, ELI is well placed to provide expanded capacity for the envisioned pathway for international NNES students (see Section 3.1). As the present report was being prepared, ELI, in conjunction with the office responsible for international recruitment, put forward a proposal for a new pathway, Bridge to Academic SuccEss (BASE). This proposal is well aligned with the pathway the Task Force has envisioned.
- ELI has expertise to help train instructors across the campus on the development of language competencies of NNES students in discipline core courses as evidenced by its experience training and educating ESL teachers and the experience it gained in the pilot study of NNES student support in a core economics course (Nguyen, Trimarchi, & Williams, 2012).
- The admission and graduation requirements of both the EFAS pathway and the proposed BASE pathway differ somewhat from those of the Math/ELAS pathway (see below). There is currently only limited data on the success of EFAS graduates in Waterloo programs. As more data becomes available, it is expected that the findings will be used to determine to what extent variations in admission and graduation requirements are appropriate or necessary.

**Conestoga Language Institute (Conestoga College)**

Since 1991, the Faculty of Mathematics has offered a pathway program for international students in collaboration with Conestoga College. As part of the admissions process, the faculty identifies international NNES students who have undergone secondary schooling in non-English
institutions and who demonstrate excellent mathematical background knowledge and potential but do not meet the Waterloo required admission standard for English language competency (i.e., standardized test scores or other means as identified in section 3.1). These students are offered conditional admission to a regular mathematics program based on successfully completing one term of study in the English Language for Academic Studies (ELAS) program offered by the Conestoga Language Institute.

In the ELAS program, students take one on-campus, first-year mathematics course at the University of Waterloo (usually MATH 137, Calculus 1 for Honours Mathematics) plus five Conestoga language competency development courses: Written Communication Skills, Pronunciation, Reading Comprehension, Listening and Speaking, and Student Success for Higher Learning. The five language competency courses are taken at a Conestoga College campus in Waterloo and are scheduled so that students can take the on-campus mathematics course at 8:30 a.m. and then take the local transit bus to the College campus. To successfully complete the program, students are required to achieve a grade of at least 70 per cent in each of the language competency courses and a grade of at least 50 per cent in the mathematics course. Students who exceed most of the requirements but fall short in a particular skill or area may be allowed to proceed on the condition that they take an explicit strengthening program on writing, reading, or mathematics to improve their weak area.

Fall enrolments have grown since 1991 and are currently between 200 and 250. Typically over two thirds of the students in the program successfully proceed to full-time studies in a regular mathematics program. For the mathematics classes that entered in the fall terms of 2002 through 2005, the percentage of students who graduated with degrees in mathematics was 73 per cent for non-ELAS students and 82.0 per cent for ELAS students (D’Alessio, 2012).

The Task Force makes the following observations about the Math/ELAS program:

- The graduation rate data shows clearly that Math/ELAS prepares students well for academic success in the mathematics programs.
- While having the ELAS courses offered off-campus ensures that there are sufficient rooms for the classes, especially in fall terms, this off-campus component is a barrier for the participants’ full integration into the Waterloo campus environment and may unintentionally delay language and cultural understanding and integration.

**The Department of English Language and Literature**

The English Language and Literature Department has 29 regular faculty members and offers three- and four-year general degree programs and three honours programs in Literature, Literature and Rhetoric, and Rhetoric and Professional Writing, with potential specializations in Digital Media Studies and English Literature in a Global Context. The department offers a wide
range of courses both online and on campus to support these programs and to teach writing to students from other programs.

The department provides two particularly heavily subscribed service courses that focus on the development of written competency: ENGL 210F (Genres of Business Communication) and ENGL 109 (Introduction to Academic Writing). ENGL 210F is offered online three terms per year and has an annual enrolment of 1,200 to 1,500 students. In this course, students learn to recognize a variety of common workplace genres and practise their core writing and rhetorical skills in a range of these genres.

ENGL 109 is offered both online and on campus three terms per year. The on-campus enrolment is limited to 150 students per term, while the online enrolment exceeds 1,000 students per year. In this course, the emphasis is on developing writing competency through a process of draft writing, peer editing, and revision (possibly for many cycles). The on-campus version has one hour of lecture per week, delivered to the complete class of 150 students, and two hours of tutorials for individual sections of 25 students. The demand for this course exceeds the available capacity.

In considering how the English Language and Literature Department aligns with the proposed vision for an integrated and continuous language competency development within each academic program, the Task Force makes the following observations:

- One focus of the department is on writing genres in a wide range of academic and workplace contexts. This focus ensures that the department’s expertise in teaching writing can potentially be integrated into a wide range of programs in the university.
- The department has significant expertise in teaching writing competency to large classes of students that include both NES and NNES students.
- The listening and speaking language competencies are not emphasized in the department’s course offerings.

Other Units of Support

Many other units within the university also offer experience and expertise in the development of language competency. They include the following:

The Centre for Extended Learning (CEL): provides support for developing online courses that replicate the positive features of on-campus learning and take full advantage of the benefits of online media
The Centre for Teaching Excellence (CTE): provides support for the design and development of courses to help achieve desired learning outcomes and develop teaching strategies that support deep learning.

The English Department at St. Jerome’s University: developed and offers the well-subscribed ENGL 119 (Communications in Mathematics & Computer Science).

Co-op Education and Career Action (CECA): has knowledge of employer expectations for workplace communication skills and provides guidance in the development of interview skills.

Drama and Speech Communications Department: offers courses that develop speaking competency.

WatPD: offers PD2 (Critical Reflection and Report Writing), as well as expertise in developing a pool of graduate and senior undergraduate graders and training these graders to provide timely and meaningful feedback in the online environment.

4.2 Proposed Infrastructure

4.2.1 Central Leadership and Coordination

Enabling the proposed vision for developing the language competency of all students continuously throughout their academic programs will require a culture change within the university. Specifically, the Task Force is asking the university community to adopt the development of language competency for life success as a core value. For this kind of meaningful change to occur, it must happen within the academic units responsible for developing and delivering academic programs. However, the units will need both leadership and support for the envisioned change.

As can be seen in the previous section, there is a considerable breadth of expertise available in a range of units to help support the development of courses and teaching strategies for systematically developing language competency. While there are some units that can provide major support in this endeavour, no single unit has the complete range of required expertise (i.e., writing, speaking, reading, and listening competencies for NES and NNES speakers; strategies for promoting deep learning; online teaching strategies; etc.). Therefore, supporting the envisioned change will require a collaborative effort between many units, including the ELI, the Department of English Language and Literature, the Writing Centre, CEL, CTE, and others.

In order to provide leadership at the institutional level and to facilitate the collaboration of the various support units, the Task Force recommends appointing an Academic Director for English Language Competency, reporting directly to the Associate Vice-President, Academic Programs.
and Strategic Initiatives. It is envisioned that the Academic Director will be able to draw upon a working group of faculty and staff to help guide and implement change. Besides drawing upon support from the units with expertise in the development of language competency, the Academic Director may also wish to involve the newly instituted Associate Deans/Teaching Fellows (or equivalents) to help coordinate and lead the envisioned changes within each faculty.

4.2.2 First Steps: Pilot Studies
As mentioned above, the Task Force recognizes that the proposed vision requires very significant change within the university. While there is considerable evidence at other institutions that the proposed commitment to language development leads to significant benefits in terms of the depth and effectiveness of student learning both in the academic and workplace environments, this evidence is perhaps too remote to the Waterloo context to be meaningful at the general academic level. The Task Force therefore recommends that the first steps be focused on a range of pilot studies over the next two years to establish best practices and to demonstrate expected benefits within the Waterloo context. Possible pilot studies include the following:

- Implement the BASE pathway on a trial basis for the fall 2013 and fall 2014 admission cohorts.
- Develop model foundation core courses (likely based on existing courses) for students in two to four academic programs for the 2013–14 and 2014–15 academic years. Hopefully, from this small group of model courses, it will be possible to demonstrate a range of teaching strategies (i.e., a range of levels of blended learning).
- Develop a set of discipline-specific core courses (again, possibly based on existing courses) for the 2013–14 and 2014–15 academic years that include the development and practice of language competency as an explicit and significant course outcome. Again, it is hoped that this group of courses will demonstrate a range of teaching strategies.

4.2.3 Comment on Resources
To achieve the intended benefits of the proposed vision, the university must be prepared to provide the resources necessary to implement and sustain the envisioned courses and curriculum activities. During the period of transition and implementation, resources will be required both to develop new curriculum components and to support the development of instructors, particularly those in the various disciplines. Once the transition is completed, resources will still be required to support continuous feedback to students — feedback that is an integral part of competency development — as well as the ongoing support of instructors in various disciplines to whom competency development may not be a natural teaching skill.
It was beyond the scope of the present study to estimate the cost of providing these resources. The Task Force did note that in the 2011 calendar year, 3,600 students (approximately one half of an incoming first-year cohort) took an entry-level writing course. This number does not include students who took discipline-specific courses that emphasize language competency development. Thus the university already recognizes the benefits of investing in language competency development.

Implementing the proposed vision will require further investment. There is an inherent community of instructors in the university who will readily and naturally wish to contribute to implementing the proposed vision. While the passion and enthusiasm of this group can play a significant role, it is crucial that the institution recognize passion by itself will not be sufficient to enable and sustain the level of change envisioned by the Task Force. Achieving the vision cannot be at the expense of these dedicated and committed instructors. The university must make a clear commitment to investing resources to ensure that the vision is realized and maintained for future generations of Waterloo students.
References


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Further Readings


