Report of the
Educational Goals/Learning Outcomes
Working Group

Simon Fraser University
May, 2018
INTRODUCTION AND CONTEXT

The Educational Goals/Learning Outcomes Working Group was called by Vice President, Academic and Provost Dr. Peter Keller in June of 2017. The Working Group met regularly through May of 2018, with the over-arching goal of progressing the Educational Goals initiative at SFU. We were given draft Terms of Reference which we refined and shared with SCUTL (Appendix A); the objectives in these ToR were our focus for the year and are copied below. If the Working Group is to continue, it would be appropriate for there to be additional items added to the ToR or mandate of the committee, including reviewing the history of the initiative at SFU, delving deeper into the benefits of the initiative and the literature supporting the development of educational goals and their assessment, and coming up with a communication plan about the initiative for the University. Although important, we, as a group, chose to focus instead on the five defined objectives in the ToR.

The committee met approximately monthly. The membership changed to some extent over the year because of changing obligations of members and the recognition by the group that including the perspective of particular roles (e.g. SCUTL Chair) would be useful. We generally worked on a consensus model. Members of the working group included:

**Chair:** Elizabeth Elle (Biological Sciences, SCI)

**Faculty:**
Daniel Ahadi (Communication, FCAT)
Natasha Gajdamaschko (Education; chair of SCUTL)
Sheri Fabian (Criminology, FASS)
Bidisha Ray (History, FASS)
Kevin Stewart (Business)
JF Williams (Math, SCI)

**Students:**
Maria Sekaly (Business)
Jamie Zhu (SFSS, Education)

**Administrative Leadership:**
Bal Basi (Coordinator, University Curriculum & Institutional Liaison)
Glynn Nicholls (Director, Academic Planning/Quality Assurance)
Susan Rhodes (Director, University Curriculum & Institutional Liaison)

**Teaching and Learning Centre:**
Brad Johnson, Director
Cindy Xin, Educational Consultant
Working Group Objectives from the Terms of Reference:

1. Determine the state of play within SFU with regard to the definition and assessment of EGs at the course and program level
2. Further the identification, definition and assessment of institutional EGs
3. Provide examples of mechanisms to develop and assess EGs at all levels
4. Consider the resources required to ensure the sustainability of this important initiative in support of student learning at the university. The resulting report should include the identification of lead and participating individuals/structures (both academic and administrative) for further development and implementation of strategies.
5. Consider the ownership and collection, storage and consolidation of assessment data at the department, school, faculty and institutional level as well as the possible adoption of an application/tool to support departments, Faculties and the institution to undertake the definition and assessment of learning outcomes

In this report, we detail the progress we have made by objective. We anticipate this document will be useful to the new Associate Vice President Academic-Learning and Teaching, but emphasize that our focus was on progressing initiatives as far as we could as a Working Group. The next group tasked with moving this initiative forward will need to undertake the essential work of consultation with the community. We are careful in this document only to document the progress to date, and do not make recommendations about what the next steps should be, as we believe those decisions should be made by the AVPA-LT.

In addition to this document, we have created a Canvas site that includes links to useful material (also included in our appendices) and is a repository for various documents used in our work for the year.

We adopt the definitions used by a previous working group, the Learning Outcomes Assessment Working Group (LOAWG), as follows:

**Learning Outcome** – A ‘learning outcome’ is an area of knowledge, practical skill, area of professional development, attitude, higher-order thinking skill, etc., that an instructor expects students to develop, learn, or master during a course or program. Learning outcomes are observable and measurable by quantitative or qualitative assessment models.

**Teaching Goal** – A ‘teaching goal’ is anything that an instructor or a program coordinator intends that students will learn in their course or program.

We additionally use the following definition as posted on the Teaching and Learning Centre website:

**Educational Goal** – In broad terms, Educational Goals are statements that describe the competences, skills, and attributes that students should possess upon completion of a course or program. They often operate within the interacting domains of knowledge, skills and attitudes.

The only objective we did not address is #5. Clearly decisions must be made regarding the collection and use of data. We note that other working groups are currently faced with the same issue, for instance the group working on evaluation systems for SFU. We suggest that a single policy be defined that addresses the collection and use of all data associated with teaching.
TABLE OF CONTENTS

Introduction and Context .............................................................................................................................................. i

Table of Contents .......................................................................................................................................................... iii

Objective 1: Progress on defining and assessing educational goals................................................................. 1

Objective 2: Institutional goals................................................................................................................................. 5

Objective 3: Assessment methods.......................................................................................................................... 7

Objective 4: Resource requirements......................................................................................................................... 9

Appendix A: Terms of reference............................................................................................................................. 13

Appendix B: Poll on educational Goal development............................................................................................... 15

Appendix C: Parallels of academic unit goals to the LEAP goals........................................................................... 19

Appendix D: Guides and examples for developing assessment plans................................................................. 22

Appendix E: Useful websites....................................................................................................................................... 23
**Objective 1: What has been the progress to date on defining and assessing Educational Goals?**

Currently, the university requires that all academic units develop Educational Goals (EGs) at the program level (majors, minors, Master, Doctorates), with completion deadlines tied to external reviews. To address Objective 1 we used two approaches. First, we designed a web survey to ask academic units (or Faculties, depending on how programs are offered) the status of the initiative within their unit, including whether they did the additional work of defining course-level goals even though this has not been mandated. We also used the survey to get information about the university supports that they found especially useful or that they thought could be improved. We invited 35 units to the survey, and 21 responded (60% response). Twelve of the units contacted had not yet been through the external review by which they were required to complete program goals; some of these had already done so anyway (e.g. Archaeology, Biology, English, FHS, see Table 1), and others were among our non-respondents. To fill the gaps where units did not respond, we followed up the survey with email contact of unit chairs just to get answers regarding the status of the initiative, not to get answers to other survey questions. Second, we met with representatives of several programs in July of 2017 to understand how they approached setting Educational Goals for their programs, and if they had begun assessment, how they were doing so. The programs included Health Science, Environmental Science, Math, French, and Gender Sexuality & Women’s Studies. Members of the committee also brought representation from Biological Sciences, Criminology, and History.

In general, connecting the EG initiative to the external review cycle has meant that many programs have completed development of EGs (Table 1). SFU was commended during the ministry of Advanced Education Quality Assurance Audit for linking the program level goal process to external reviews, as it has resulted in substantial progress. Twenty-five academic units have set program-level goals already, and at least two have done so prior to their reviews. Just 12 more departments/Faculties need to be reviewed (and thus to officially set goals) in the next two academic years. Many programs (24) have set goals for at least some of their courses as part of the initiative, and a few (7) have indicated they have begun assessment.

Connecting the development and assessment of EG’s to the external review is useful to many stakeholders. It spreads the administrative workload out, it asks units to assess their programs at a time they are already being self-reflective, and it reduces faculty anxiety as the goals are assessed by external reviewers that are familiar with the discipline. However, not all external reviewers see the assessment of EGs as an essential part of the external review process, a challenge for SFU moving forward. In addition, there remains a gap in the process because some non-departmentalized programs are not captured within the external review framework unless initiated by a Faculty Dean or by a department in which the program has an affiliation.

Unfortunately, people who responded to our poll largely did not use SFU resources for the development of Educational Goals, and when they did, did not find available resources to be helpful during the process, expressing some frustration in free-form comments (Appendix B). About 40% of respondents to our poll found the Teaching and Learning Centre (TLC) website, Workshops, or Educational Consultants (EC’s) to be “Very” or “Somewhat” helpful. Part of this may be that the EC’s and the TLC were also new to the initiative when it was launched and so were not yet prepared with adequate support resources when some departments were faced with the task of setting goals. Moving forward with assessment, the majority of our respondents expressed interest in seminars/information sessions with external experts or one-on-one meetings with Educational Consultants for help designing and carrying out assessment of educational goals.
At our meeting with stakeholders, we learned that different academic units used different approaches in setting goals. Some (GSWS, BISC, and HSCI) started with course outlines or course-level objectives and used commonalities among courses to set program-level goals. Others (EVSC) wrote program goals by committee. We heard that some units had to deal with unwillingness on the part of faculty to take on extra work, especially since SFU materials were seen as complicated and lacking clarity and Educational Consultants were seen as varying greatly in their ability to help. It was noted that in some cases having help external to the university was useful because external experts have different perspectives than internals.

The academic units that have begun assessment also use different approaches and have different experiences. If programs have a scaffolded structure with pre-requisites, they were seen as easier to assess. Some programs assess large courses differently than small courses, for instance using student grades for the former and manual evaluation of program goals for students in the latter. Programs with accreditation found that they produce so much data that it can be difficult to know what to do with it. In Beedie, for example, there is an office with an Accreditation Officer and two staff members to collect, analyze, report on, and archive assessment data. Most academic units want some sort of supporting computer program to help them manage and track data, and expressed concern about who owns such data and what will be done with it.

Although there is growing acceptance of the purpose and benefits of articulating program-level goals, articulating course-level and institutional goals (or learning outcomes), and assessment in general, remain somewhat contentious. One emergent theme was that assessment is very challenging in terms of time and skills required especially for non-experts (which includes almost all faculty). There was definitely interest in learning more about how the university will support assessment moving forward.
Table 1. Status of EG development and assessment at SFU.

Great progress has been made towards defining educational goals, and many units have begun to assess at least some of their goals. Red = non-departmentalized programs, that may or may not be captured by the external review process. Italicized red = programs not scheduled for external review, nor reviewed with affiliated academic unit. ? = no answer after repeated queries. Italicized dates are upcoming deadlines.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Department/Program</th>
<th>EdGoals for External Rev.</th>
<th>Mid-Cycle Assess Report</th>
<th>Started Assessing?</th>
<th>Course-Level EdGoals</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEEDIE</td>
<td>Beedie</td>
<td>2013/14</td>
<td>Fall 2017</td>
<td>Yes</td>
<td>Yes, for most</td>
</tr>
<tr>
<td>FASS</td>
<td>French</td>
<td>2013/14</td>
<td>Fall 2017</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>- French Cohort Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Humanities</td>
<td>2013/14</td>
<td>Fall 2018</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>- Asia-Canada (to HIST 2018)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td>2013/14</td>
<td>Fall 2018</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>- French Cohort Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gerontology</td>
<td>2013/14</td>
<td>Fall 2018</td>
<td>No</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Psychology</td>
<td>2013/14</td>
<td>Fall 2018</td>
<td>Yes</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>- Cognitive Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Criminology</td>
<td>2013/14</td>
<td>Fall 2018</td>
<td>No</td>
<td>Yes, for most</td>
</tr>
<tr>
<td></td>
<td>International Studies</td>
<td>2013/14</td>
<td>Fall 2018</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>- Latin American Studies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linguistics</td>
<td>2013/14</td>
<td>Fall 2018</td>
<td>No</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>MPP Public Policy Program</td>
<td>2013/14</td>
<td>Fall 2018</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>First Nations</td>
<td>2016/17</td>
<td>Fall 2018</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>GSWS</td>
<td>2016/17</td>
<td>Fall 2018</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>History</td>
<td>2016/17</td>
<td>Fall 2018</td>
<td>No</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>- Global Asia (Fall 2018)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Philosophy</td>
<td>2016/17</td>
<td>Fall 2020</td>
<td>No</td>
<td>Yes, for most</td>
</tr>
<tr>
<td></td>
<td>Economics</td>
<td>2017/18</td>
<td>Fall 2021</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>2018/19</td>
<td>Fall 2022</td>
<td>No</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Sociology &amp; Anthropology</td>
<td>2018/19</td>
<td>Fall 2022</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>- Labour Studies</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>World Literature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hellenic Studies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban Studies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Semester in Dialogue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 1 continued

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Department/Program</th>
<th>EdGoals for External Rev.</th>
<th>Mid-Cycle Assess Report</th>
<th>Started Assessing?</th>
<th>Course-Level EdGoals</th>
</tr>
</thead>
<tbody>
<tr>
<td>FoE</td>
<td>Education</td>
<td>2014/15</td>
<td>Fall 2018</td>
<td>Yes</td>
<td>Some</td>
</tr>
<tr>
<td>FENV</td>
<td>Environmental Science</td>
<td>2014/15</td>
<td>Fall 2018</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>REM</td>
<td></td>
<td>2016/17</td>
<td>Fall 2020</td>
<td>No</td>
<td>Some</td>
</tr>
<tr>
<td>Archaeology</td>
<td></td>
<td>2018/19</td>
<td>Fall 2022</td>
<td>No</td>
<td>Yes, for required</td>
</tr>
<tr>
<td>Geography</td>
<td></td>
<td>2019/20</td>
<td>Fall 2023</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>- BEnv Global Environmental Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- BEnv/BBA Sustainable Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>- MSc Ecological Restoration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>FAS</td>
<td>Engineering</td>
<td>2016/17</td>
<td>Fall 2020</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mechatronics</td>
<td></td>
<td>2016/17</td>
<td>Fall 2020</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Computing Science</td>
<td></td>
<td>2019/20</td>
<td>Fall 2023</td>
<td>No</td>
<td>Yes, for required</td>
</tr>
<tr>
<td>FSCI</td>
<td>Mathematics</td>
<td>2013/14</td>
<td>Fall 2017</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Chemistry</td>
<td></td>
<td>2015/16</td>
<td>Fall 2019</td>
<td>Yes</td>
<td>Some</td>
</tr>
<tr>
<td>BPK</td>
<td></td>
<td>2017/18</td>
<td>Fall 2021</td>
<td>No</td>
<td>Some</td>
</tr>
<tr>
<td>Earth Sciences</td>
<td></td>
<td>2017/18</td>
<td>Fall 2021</td>
<td>No</td>
<td>Yes, for most</td>
</tr>
<tr>
<td>MBB</td>
<td></td>
<td>2018/19</td>
<td>Fall 2022</td>
<td>No</td>
<td>Yes, for required</td>
</tr>
<tr>
<td>Biology</td>
<td></td>
<td>2019/20</td>
<td>Fall 2023</td>
<td>No</td>
<td>Yes, for required</td>
</tr>
<tr>
<td>Physics</td>
<td></td>
<td>2019/20</td>
<td>Fall 2023</td>
<td>No</td>
<td>Some</td>
</tr>
<tr>
<td>Stats &amp; Act Sci</td>
<td></td>
<td>2019/20</td>
<td>Fall 2023</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>- Data Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCAT</td>
<td>SIAT</td>
<td>2013/14</td>
<td>Fall 2017</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td>2018/19</td>
<td>Fall 2022</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Contemporary Arts</td>
<td></td>
<td>2018/19</td>
<td>Fall 2022</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>- Publishing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHS</td>
<td>Health Sciences</td>
<td>2019/20</td>
<td>Fall 2023</td>
<td>No</td>
<td>Yes, for most</td>
</tr>
</tbody>
</table>
OBJECTIVE 2: FURTHER THE IDENTIFICATION, DEFINITION, AND ASSESSMENT OF INSTITUTIONAL EGs.

Setting institutional-level educational goals can be challenging. The committee evaluated educational goals at other institutions, and had multiple discussions regarding what we, at Simon Fraser University, value. We primarily relied on two models for inspiration, because they were simple and seemed to capture SFU values, including those of our WBQ initiative. These are the Liberal Education and America’s Promise (LEAP) Essential Learning Outcomes (https://www.aacu.org/leap/essential-learning-outcomes) and the Achievement-Centered Education (ACE) goals of the University of Nebraska-Lincoln (https://ace.unl.edu/). We were additionally informed by the work of the Higher Education Quality Council of Ontario (HEQCO) which provides many resources for the development of educational goals, but fewer specific examples that could inform our efforts (http://www.heqco.ca/).

We examined program goals included in SFU external review self-studies for commonalities. Specifically, we compiled a list of which programs articulated goals that were reasonably similar to the LEAP outcomes for the 21 academic units that have completed External Review since the start of the initiative (Appendix C). Our expectation was that if particular educational goals already resonated with the philosophy of multiple units, those commonalities would help us identify emergent goals for the institution. We found, for instance, that all programs that have developed educational goals include some that broadly could be categorized as Inquiry & Analysis; Critical & Creative Thinking; and Written & Oral Communication, and almost all additionally included Foundations for Lifelong Learning and Integrative & Applied Learning.

An important challenge for the setting of institutional-level goals is deciding upon the intended audience. The audience could be external to the university, and the goals could be quite aspirational and aimed at helping the broader educational community understand our philosophy about learning and teaching. A different external audience would be employers, for whom very concrete skills-based goals would be useful. Alternatively, the audience could be internal. Institutional educational goals could provide advice to departments about expectations the university has about all our graduates, or could be provided as a sort of promise to students about the end product of their degree. Institutional-level goals also provide a framework for academic units as they develop and re-develop their program-level goals. Institutional-level goals for these different audiences are likely to vary, and importantly the goals may vary in how straightforward it is to assess them. Generally speaking, aspirational educational goals are not meant to be assessable, but learning outcomes should be assessable, and such assessments could be important as part of the quality assurance process SFU regularly undertakes for the Provincial government and other accrediting bodies.

The committee chose to largely focus on educational goals that could be assessed, based on our review of program goals and published goals from other institutions. We therefore used language like “students will” rather than “students should”, as we are expecting all students will meet the goals of the institution upon graduation. Depending on the audience SFU intends these goals to reach, however, it may be important to reconsider whether they align with our intended message.
Proposed Educational Goals for Simon Fraser University

Preamble:
As an institution, we are dedicated to preparing students for lifelong learning, and to producing community-engaged and responsible citizens that demonstrate integrity and ethical behavior. We value a community founded on principles of respect for knowledge, truth, scholarship, and acting with integrity. Our graduands are critical and creative thinkers, well-versed in problem solving skills and equipped for the world of the future.

A. Cultivation of knowledge
Students will develop both broad and deep understanding of a field of study, including:

1) Foundational knowledge, including core assumptions, key concepts, standard methodologies, and common theoretical approaches.
2) An overview of the main areas of study that make up a discipline or field, including important interdisciplinary and transdisciplinary relationships.

B. Intellectual and Conceptual Growth
Over the course of their degrees, students will grow as learners, and be able to:

1) Pose questions, and analyze and interpret information and arguments, using methods appropriate to their discipline. Use argumentation approaches to evaluate alternatives.
2) Cultivate awareness of, and the ability to apply learning from, concepts and ideas from a range of disciplines and perspectives outside of their programs.
3) Develop proficiency in quantitative and formal reasoning, and skills in practical problem solving, critical evaluation, or analysis.
4) Where appropriate, engage in experiential and synthesized study and reflection, which is intended to result in a creative or scholarly product.

C. Communication
Students will demonstrate well-developed communication skills that integrate knowledge and foster understanding. These communication skills include:

1) Writing that integrates text, data, and images
2) Formal and informal oral presentations with supporting materials and evidence
3) Interpersonal communication that supports effective problem solving in appropriate collaborative practices

D. Ethics and Social Responsibility
Students will:

1) Assess ethical values and the social context of problems; apply different perspectives to ethical dilemmas.
2) Make positive contributions to the communities in which they work and live, and engage in meaningful ways within those communities.
3) Participate in fostering diversity, inclusion, and intercultural understanding of indigenous, local, regional, and global communities.
OBJECTIVE 3. PROVIDE EXAMPLES OF MECHANISMS TO DEVELOP AND ASSESS EGs AT ALL LEVELS.

Once educational goals are set for programs, it is important to evaluate whether the components of the program are helping students to meet them. Careful consideration of why assessment will be done, who the stakeholders are, what counts as evidence, the frequency of assessment, and how to actually carry out the assessment is important. The method chosen must be manageable within available resources, and address aspects of the program that are important to departments and Faculties. These program aspects should be expressed by the educational goals and should be observable and measurable by quantitative or qualitative assessment methods. We searched for examples and advice on assessment, and we summarize major themes here. Good resources for program assessment are listed in Appendix D. Additional useful websites are in Appendix E. All of these resources are also archived on our Canvas site.

Assessment can be at the course, program, or institutional level. Ultimately academic departments are responsible for program-level assessment which normally involves assessing only a subset of courses (or a subset of students). Curriculum mapping can be useful to identify which courses introduce, reinforce, or provide advanced treatment of particular knowledge, skills, or attitudes that are captured in learning outcomes for courses and/or educational goals of programs. Once the curriculum map is completed, it is important to regularly re-examine whether courses continue to address the same learning outcomes in the same way. A completed curriculum map allows a unit to identify specific courses within which assessment can occur to allow for the highest information gain relative to the effort required. Consensus is that key courses in the curriculum should be examined (not all courses), especially those that reinforce (rather than introduce) the learning outcomes. Comparison of student achievement at introduction and reinforcement can be very helpful, however, and assessment in capstone courses, if they exist within programs, is recommended as it can be the best way to evaluate student achievements near graduation.

Assessment can be done both directly, using tests, essays, portfolios and other examples of work completed within courses or organized by students; and indirectly, such as using surveys, focus groups, or exit interviews to evaluate the student experience of their learning, or to capture information from other stakeholders such as accreditation bodies or employers. In some cases survey instruments exist that can provide comparative data (e.g. the National Survey of Student Engagement, NSSE). Direct methods can use existing information from courses (e.g. exams, presentations, reports), which can increase efficiency because additional data collection is not required, only analysis and interpretation. Indirect methods can be especially helpful in revising programs and provide an opportunity to include the opinions of graduates. Both quantitative measures (e.g. grades, demographics) and qualitative information (e.g. most indirect methods listed above, but also writing samples and portfolios) should be used as they can provide different information. There are likely to be disciplinary differences in the relative use of qualitative vs. quantitative measures, and the use of direct vs. indirect methods.

The method(s) used depend on the information desired by the program. Is there interest in whether students meet or exceed certain standards? Or is there interest in more general information on how to improve the program? A general rule is that the use of multiple methods will provide rich information, but it is important to choose what will be assessed carefully as it is easy to collect too much information, with not enough of it being useful. Consultation with experts on the best methods to address questions of interest is strongly encouraged, because all methods have strengths and weaknesses. For example interviews and focus groups provide great
information about the student experience, but are labour-intensive. Course-embedded assessment is less labor-intensive and can help encourage faculty to embrace the process because they learn useful information about their students, but differences among faculty members in how they evaluate student learning can make interpretation difficult.

A concern about the Educational Goals initiative at SFU is that we are joining an “audit culture” or “assessment culture”. There is a growing body of literature that critiques the collection of information largely to comply with external accreditation agencies. In extreme cases, assessment can become more of a box-ticking enterprise than something that fosters program improvement and student success. Because student learning is complex, meaningful assessment of that learning can be extremely difficult and costly to do, leading some to conclude it should not be done at all. As SFU considers different assessment models, it is necessary for the over-arching goal of the institution to be clarified, and that any assessment methods recommended will meet that goal.
Objective 4. Consider the resources required to ensure the sustainability of the initiative.

A concern that came out of our survey about the development of educational goals was lack of support from the university. Very few respondents used SFU resources, with one commenter noting that they felt each academic unit had to ‘reinvent the wheel’ (Appendix B). Only 40% of respondents or fewer felt TLC workshops, Educational Consultants, SFU webpages, or the VPA office were “somewhat” or “very” helpful while setting educational goals. For the future development of assessment plans, half (50%) were interested in attending seminars by external experts or being part of “lunch and learn” hands-on meetings, but more (65%) expressed interest in one-on-one help from Educational Consultants. In free-form answers, there was great interest in getting templates or examples of assessment plans that work. Respondents noted that they felt they needed clarity about the commitment level of the university (what sorts of support and resources would be available long term?) so they could develop an assessment plan that they have the capacity to actually complete.

It was not clear to members of the working group that the challenges of setting and assessing educational goals were well understood at SFU. For faculty who specialize in nuclear physics, Renaissance history, or even in evidence-based teaching practices, the philosophy and practice of setting and assessing EGs is well out of their expertise. We need experts in the setting and assessment of EGs (and who have experience in the classroom) if we are to succeed with this important initiative. In addition, training of individuals embedded within academic units must be made available, because it is important to recognize differences in disciplinary traditions and expectations; there will not be a “one size fits all” approach. There should also be adequate staff with the appropriate expertise to provide support for data collection and analysis. Finally, it is essential that TPCs recognize that the assessment of EGs is a time-intensive endeavor, and for faculty already experiencing expanding expectations for their roles at the university, some compensation in terms of time, and understanding when faculty are themselves assessed biennially, must be forthcoming.

Assessment models, like our EGs, must be crafted considering the intended audience. We must start with “who is this assessment for?” and “What can be done with this assessment?”. The working group believes that faculty will engage with this process if they believe it will lead to program improvement or better opportunities for graduates, but at the moment these potential benefits are obscured by concerns about performing the work.

The working group performed a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) for the initiative (Table 2). We see many strengths and opportunities that can be used by the university in any future communication plan. Our concerns regarding weaknesses and threats are largely around whether there will be adequate support for the initiative to guarantee success, including sustained attention from senior administration. Assessment is much more challenging to do well than the setting of program goals, which has already been challenging to accomplish. We do not see the current model of giving academic units under external review extra funding to work on goals or assessment plans, generally in the summer of the year of their review, to be the right one. This model truly does encourage every academic unit to re-invent the wheel, and the timing of the funding does not encourage the thoughtful planning and discussion required. A new resource strategy is needed.
Table 2. SWOT analysis of educational goals initiative at SFU.

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>OPPORTUNITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provides clarity of expectations for students, parents, employees, the Province, and other stakeholders</td>
<td>• Facilitates conversations about teaching and learning and how we value it at SFU</td>
</tr>
<tr>
<td>• Consistent and transparent evaluation, and clear standards for assessment</td>
<td>• Provides greater cohesion around our collective vision of teaching and learning</td>
</tr>
<tr>
<td>• Opportunities for ongoing curricular improvement</td>
<td>• Link to new AVPA-LT – inform that role about SFU’s values</td>
</tr>
<tr>
<td>• An opportunity for units to think about curriculum in a manner that they haven’t before, which creates internal cohesion</td>
<td>• Improve conversations between advisors and students, to help meet student’s personal goals</td>
</tr>
<tr>
<td>• Facilitate student interest, choice, and student experience, and foster communication with students</td>
<td>• Provides opportunity to expand TPC review to include educational leadership valuation</td>
</tr>
<tr>
<td>• May provide students with a venue to evaluate whether LOs are being met</td>
<td>• Enhances SFU’s image, because it allows for greater communication about how seriously we take teaching and learning</td>
</tr>
<tr>
<td>• Provides consistency across offerings, either where units are heavily dependent on sessionals, or across offerings in different semesters by different faculty</td>
<td></td>
</tr>
<tr>
<td>• May help address unknowns about new BC curriculum/admission models by providing clarity about what SFU expects students to know coming in</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WEAKNESSES</th>
<th>THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Workload and administrative burden for units and individual faculty</td>
<td>• Perception that data will be misused to penalize faculty, through the TPC reviews or in other ways</td>
</tr>
<tr>
<td>• Faculty are novices, and there is limited support/training for the initiative</td>
<td>• Perception that setting EGs within units infringes on academic freedom of individual faculty</td>
</tr>
<tr>
<td>• Lack of “credit” or acknowledgement within units for work done by faculty involved</td>
<td>• Challenging to overcome differences in philosophy about EGs across the university</td>
</tr>
<tr>
<td>• Culture/structure within units doesn’t allow for course release for curricular redevelopment</td>
<td>• Perception that this is an “audit culture” box-ticking exercise that lacks meaning</td>
</tr>
<tr>
<td>• Cannot yet recommend particular assessment strategies, to help guide units</td>
<td>• Over-arching concerns about initiatives that appear top-down</td>
</tr>
<tr>
<td>• Link to external reviews extends timelines, chair turnover is on a shorter timeline</td>
<td>• Loss of accreditation if progress on EGs isn’t shown, or if we perform poorly in Province’s quality assurance program</td>
</tr>
<tr>
<td>• Policy not explicit enough, expectations are not well understood</td>
<td></td>
</tr>
<tr>
<td>• No feedback given to units from SFU about the quality of Educational Goals, same may happen with assessment</td>
<td></td>
</tr>
<tr>
<td>• External reviewers don’t provide adequate or sometimes any feedback</td>
<td></td>
</tr>
</tbody>
</table>
Specifcics Regarding Resourcing of the Educational Goals Initiative

1. SFU should cultivate long-term local expertise in assessment that can help academic units with a continuous cycle of curriculum reform and enhancement, data evaluation and management, and the proper way to do assessment. This likely will take the form of a Centre for Educational Assessment that works in synergy with the TLC, IRP, and ISTLD, with the AVPA-LT providing connection and guidance among these groups.

2. There should be a website or other accessible location where EGs for SFU programs are posted. This would be in the best interest of programs and students, because it would allow programs to examine different models and consider the strengths and weaknesses of their own when articulating and refining goals. SFU does not at present provide feedback on the quality of EGs; making EGs more public would, at a minimum, help build institutional memory and expectations. We anticipate some concern about public posting; in that case, the EGs could be behind a faculty/staff sign-in wall. Should the university transition to requiring course-level learning outcomes, these, too, should be shared, especially for service courses. It is important that there be conversations between units that teach service courses and those whose students take those courses about what is wanted, and sharing of course LOs would assist in that endeavor.

3. SFU must commit to the cultivation of knowledge internally, potentially by hiring individuals with this expertise to help run our efforts (ideally experts with in-classroom experience), and definitely by bringing in a series of external experts in assessment to provide workshops, until we have built such expertise internally. Workshops need to be targeted properly, toward the academic unit members doing the work, and need to be delivered in the way most desired by the participants and be respectful of faculty member time. Although there should be an effort to explicitly target academic units at particular stages of the external review cycle, there should also be an attempt to decouple workshops from that cycle so units (including non-departmentalized programs) can work at their own pace and interest.

4. The TLC needs Educational Consultants who are experts in the area of assessment of EGs and who can help guide the initiative. Of the support that exists, not all Educational Consultants have expertise in the area of assessment of EGs.

5. If a cycle of continuous improvement is desired, there needs to be a review of the current timelines and policies to ensure assessment is undertaken regularly. It is important also that the university consider policy changes that would allow non-departmentalized programs to be included in the EG endeavor, even though they are not part of the usual external review cycles.

6. We should cultivate faculty advocates within Faculties. Local expertise is essential because of disciplinary differences in how learning and teaching are approached and assessed. These individuals must be recognized for their efforts by TPCs, and because there will be a large quantity of data generated that needs to be analyzed, they will likely need course release or some other form of compensation that provides them with the time to do the work.

7. SFU needs to commit to improvements in language support for students for whom English is an additional language. It will be challenging to impossible to assess student knowledge, skills, and attitudes if students have difficulty communicating in English.

8. In some cases, units rely on Teaching Assistants to collect data for use in program assessment. The university would need to support these efforts by providing adequate base units to complete the work.
9. The university should explore computer programs/systems that help to collect data for assessment. We reviewed the opportunities in Canvas; currently it is organized to allow course-level LOs to be assessed, but not program-level LOs. For instance, it is not possible to enter Educational Goals for the program that would be different (more over-arching) than the specific course-based LOs, and any entered LOs would be visible to students as would be their assessment for those LOs. For the assessment of programs, we would need software that would allow pulling course-based information into a program-level assessment. The University of Guelph worked with a company called Desire2Learn (D2L) to develop such software and found the online learning-outcomes assessment tool was effective (see link under Outcome 3). Curriculum mapping software exists and should be explored; however, in many cases a simple spreadsheet like Excel or a relational database like Access could be adequate.
APPENDIX A. TERMS OF REFERENCE.

Educational Goals/Learning Outcomes Working Group

Preamble

SFU is committed to improving the student experience at SFU and learning is a major part of their experience here. To support our continuous improvement of student learning, the development and use of educational goals and their assessment should be established across courses, programs and at the institutional level.

The benefits of this to students include:

- communicating to students clear expectations about what is important in a degree program or course
- informing students that they will be evaluated in a consistent and transparent way
- allowing students to make better decisions about programs based on outcomes results
- being able to anticipate and articulate their learning experiences over the course of their degree, aggregating their learning across academic programs and co-curricular activities
- assisting graduating students in articulating their learning to future employers

The benefits to faculty include:

- determining what is working and what is not working in their courses or programs
- facilitating valuable interdisciplinary and intercampus discussions
- providing evidence to justify needed resources to maintain or improve programs that will generally increase the accountability of the program
- providing reassurance that all faculty teaching a particular course agree to address certain core curricula content
- allowing faculty to make curricula improvements based on data and not on anecdotal evidence only

Assessment of Educational Goals will also assist SFU in demonstrating an institutional commitment to continually improve its academic programs as required in the recent Quality Assurance Process Audit conducted by the Ministry of Advanced Education. Assessments could also be used to demonstrate accountability to SFU’s major funder – the BC government – and will assist with our accreditation efforts.

Purpose of Working Group

To develop workable strategies to further integrate undergraduate educational goals (EGs) in the fabric of SFU’s teaching and learning environment by incorporating the ongoing process of educational goal assessment and curricular review into current SFU structures and processes.

The Working Group should:

1. Determine the state of play within SFU with regard to the definition and assessment of EGs at the course and program level
2. Further the identification, definition and assessment of institutional EGs
3. Provide examples of mechanisms to develop and assess EGs at all levels
4. Consider the **resources** required to ensure the **sustainability** of this important initiative in support of student learning at the university. The resulting report should include the identification of lead and participating individuals/structures (both academic and administrative) for further development and implementation of strategies.

5. Consider the **ownership and collection, storage and consolidation** of assessment data at the department, school, faculty and institutional level as well as the possible **adoption of an application/tool** to support departments, Faculties and the institution to undertake the definition and assessment of learning outcomes.

**Timeline**

Items 1, 2, and 4 should be completed before the end of 2017. The remainder should be the priority of the working group in 2018.

Implementation of proposed strategies will fall to the Associate Vice President, Teaching and Learning on his/her appointment. This working group may be asked to support the implementation, and to provide a timeline for implementation.

**Membership**

Chair: Associate Vice President, Teaching and Learning (interim Chair appointed by VPA)
Director, University Curriculum and Institutional Liaison
Director, TLC
Director, Academic Planning and Quality Assurance
Chair, Senate Committee on Undergraduate Teaching and Learning
At least four additional faculty members
At least two students
APPENDIX B. POLL OF PROGRESS ON EDUCATIONAL GOALS, INCLUDING OPINIONS ABOUT SUPPORT FOR THE INITIATIVE.

This poll was completed as a web survey sent to the Chairs and Directors email list, with a request that the appropriate responsible person fill it out. We used the poll to summarize the progress to date in setting goals for programs and courses, asked whether assessment had begun, and asked the opinion of the respondents regarding various supports provided by SFU for the setting of program goals, and supports they would like to have to develop assessment plans.

We present summary information for most questions, and provide all comments (removing names when necessary).

Respondents:
Archaeology Health Sciences
Beedie School of Business History
Biological Sciences Humanities
Chemistry Linguistics
Communication Philosophy
Computing Science Physics
Criminology Psychology
Earth Sciences SIAT
Education Sociology and Anthropology
English World Literature
Gerontology

Current status of undergraduate program goals:
Complete: 12
Partially complete: 5
Not yet begun: 4

Has your department developed course-level learning outcomes?
Yes, all courses: 1
Ye, most courses: 6
Yes, required courses: 3
Some instructors have done this: 7
We have not done this: 2
No response: 2

What is the current status of assessment of program goals?
We have not yet started assessment: 14
We have a plan but have not implemented: 1
We have begun to implement assessment plan: 3
We are already assessing our program goals: 2
No response: 1
Let us know if you utilized any of the following resources for EG development and how useful they were to you:

<table>
<thead>
<tr>
<th>Resource</th>
<th>Very helpful</th>
<th>Somewhat helpful</th>
<th>Not at all helpful</th>
<th>Did not use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Consultants</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>TLC Webpage</td>
<td>0</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Workshops</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>VPA office</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Other SFU depts.</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Resources external to SFU</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

How likely would you use the following to assist in developing assessment plan?

<table>
<thead>
<tr>
<th>Resource</th>
<th>Very likely</th>
<th>Somewhat likely</th>
<th>Neutral</th>
<th>Somewhat unlikely</th>
<th>Very Unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-on-one meetings with EC’s</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Seminars/workshops by external experts</td>
<td>1</td>
<td>9</td>
<td>6</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Half-day TLC workshops</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Group meetings to actively work on plans</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

Were there supports for the development of program goals that were not available from SFU, but would have benefited your process?

More personnel to track down and spend time on various models of developing program goals and evaluation criteria. It becomes nearly a full time job to deal with ongoing developing, planning, reporting, revising, etc.

[Three departments] co-hired a consultant to help develop our program goals (as part of a bigger project mapping out potential overlap and opportunities among our Depts). This level of support and expertise was not available at SFU.

Mentorship. Help in the nitty-gritty of implementation. Relevant exemplars. Most of the proffered "help" is of the "play the flute by blowing in one end and moving your fingers over the holes until beautiful music comes out" variety. Every department should have a case worker whose job it is to facilitate the process and to provide guidance. The current expectation appears to be that we will all invent the process anew, which is not an efficient use of resources, and means that the process is constantly being reinvented.

An appropriate time-frame and staff resources. The educational goals document had to be completed within two semesters for an external review, and all of the literature and the external experts conducting workshops at SFU suggested that at least two years is needed and that all teaching faculty must be involved.

Consultant assigned specifically to our unit

Support in the form of templates or examples would have been useful, e.g. examples of best practices. Also, clear definition of what an "Educational Goal" is would have been useful.

What supports would be helpful for the development of assessment plans?

No one seems interested.

We would probably benefit from having models/examples from programs structured like our own. We will need clarity and firm commitments from administration on where the time/labour, and
expertise for assessment is to come from so we can develop a plan that, realistically, we have the
capacity to carry out. We will probably need more staff support in order to collect and organize the
evidence required for assessment.

coordination with SETC

Faculty time to commit to process as well as time to evaluate.

Data! It would be helpful to have someone analyze and present data (from IRP) to identify factors that
correlate with student success. E.g., Do first year grades predict student success? Do pre-requisite
grades predict student success?

1) We need help from real educators who have taught university level courses, and who have gone
through the process. TLC workshops can be useful if they follow a model of bringing in people of this
sort. TLC-led workshops that instead relied on arm-chair educators who spout edu-babble were not
useful. I’m not sure what an "Educational Consultant" is, but I fear it is the latter. 2) Facilitators.
People who can help us create a framework to move forward. This means someone who has
strategies, knows what works, can translate what the vague university instructions mean, and can
work with departmental designates to create a meaningful process.

If the time and resources (release time, staff support) are available over the long-term assessment
would be very likely to occur, but if not, it is very unlikely.

Templates and samples would be useful. Clear direction on the purpose of assessment: is it for
department use, internal (SFU) use, or external use?

Templates or examples of discipline specific assessment plans.

If your department was interested in developing course-level goals, what resources would you need?

No one seems interested.

It is unlikely we would develop course-level learning outcomes. (1) We do not subscribe to the
reductionist pedagogical and administrative philosophy of LEARNING OUTCOMES; (2) the content of
courses with the same number varies from semester-to-semester. Our curriculum efficiency depends
on keeping our courses flexible.

Information on best practices regarding educational goals in similar departments across North
America

We would appreciate clearer guidance about a) what types of assessment of educational goals will be
permitted; and b) how to craft our course-level educational goals in light of (a).

Adapting the current course-level learning outcomes which instructors create on an individual basis to
align with our program-level learning outcomes

We would like to have a half-day workshop from TLC or with an educational consultant to ensure that
all instructors understand how to develop the learning outcomes and link them meaningfully to
course design and evaluation and also to help us to collectively align our course-level outcomes with
program-level goals.

I think our faculty have all the resources they need to develop educational goals.

We'll cross that bridge when we come to it.

What would have/might still be helpful is individuals to facilitate development of learning outcomes
for multi-instructor courses.

Again, mentorship, and a template for the process. We have a strong sense of what is taught in the
courses, but we understand this to be only part of what is being asked of us. In other words, we have
thoroughly mapped out (as an outgrowth of accreditation) what hard-skills are expected as outcomes
in our core courses, but mapping of soft skills is still in progress. We have received little to no formal
guidance from the university as to what is wanted or needed, or the best way to go about this. There has been no formal follow up since we went through the external review exercise, when we formulated out program wide goals. Colleagues like [names] have provided much useful help, but this has been informal; a more formalized process would help.

<table>
<thead>
<tr>
<th>We have no plans to develop course-level learning outcomes. However, should it be mandated, we would require dedicated, long-term support (time, people) as it would require an iterative process over several years.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Again some consultation and examples would help</td>
</tr>
</tbody>
</table>

Any other comments?

<table>
<thead>
<tr>
<th>We are concerned about the extra labour and time involved to meet these requirements. As a multi-disciplinary department, we have 3 majors, two minors, and 4 graduate degree programs within our department.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have been aware of this initiative for some years now but am still unsure as to what my Faculty’s official stance on it, what the Faculty wants to accomplish with it, and to what extent it is required of programs/departments.</td>
</tr>
<tr>
<td>While the Department appreciates the fact that at SFU educational goals are not being articulated for us, top-down, many faculty nevertheless were and remain opposed to these goals in principle and in practice. We worry that, as with other humanities programs, what students learn in our program is difficult to quantify, and we worry that this fact could hurt the department if these goals are used by administration as an assessment tool for the purposes of funding and other decisions. That said, the department is prepared to write and implement program-level educational goals when required to do so.</td>
</tr>
<tr>
<td>Until someone articulates the difference between &quot;outcomes&quot; and &quot;goals&quot;, we're not lifting a finger on this.</td>
</tr>
<tr>
<td>More formal concrete guidance in the implementation of learning outcomes is needed. I neither want nor intend to treat this as a cynical exercise in paperwork and placating the administration. As a department, we see the value in learning outcomes, but have not been given appropriate support (mentorship, not money) to do the job well.</td>
</tr>
<tr>
<td>Faculty buy-in is uneven. Some embrace the process, others are not really interested in it.</td>
</tr>
</tbody>
</table>
APPENDIX C. PARALLELS WITH THE LEAP LEARNING OUTCOMES

The Liberal Education and America’s Promise (LEAP) Essential Learning Outcomes are as follows: (https://www.aacu.org/leap/essential-learning-outcomes)

Knowledge of Human Cultures and the Physical and Natural World
• Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

Focused by engagement with big questions, both contemporary and enduring

Intellectual and Practical Skills, Including
• Inquiry and analysis
• Critical and creative thinking
• Written and oral communication
• Quantitative literacy
• Information literacy
• Teamwork and problem solving

Practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

Personal and Social Responsibility, Including
• Civic knowledge and engagement—local and global
• Intercultural knowledge and competence
• Ethical reasoning and action
• Foundations and skills for lifelong learning

Anchored through active involvement with diverse communities and real-world challenges

Integrative and Applied Learning, Including
• Synthesis and advanced accomplishment across general and specialized studies

Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

We produced a list of which of the 21 academic units that have undergone external review since the Educational Goals initiative was introduced had program goals that were either explicitly stated or could be reasonably interpreted as being parallel to the LEAP goals. These are provided for each of the eleven bullet points in the LEAP list above, starting on the next page.
Inquiry and analysis
Math
Political Science
French
Humanities
SIAT
Beedie
Environmental Science
Psychology
Education
Gerontology
Chemistry
Criminology
Linguistics
International Studies
Engineering Science
Mechatronic Systems Engineering
Resource & Environmental Mgmt
Philosophy
First Nations Studies
Gender, Sexuality & Women’s Studies
History

Critical and creative thinking
Math
Political Science
French
Humanities
SIAT
Beedie
Environmental Science
Psychology
Education
Gerontology
Chemistry
Criminology
Linguistics
International Studies
Engineering Science
Mechatronic Systems Engineering
Resource & Environmental Mgmt
Philosophy
First Nations Studies
Gender, Sexuality & Women’s Studies
History

Written and oral communication
Math
Political Science
French
Humanities
SIAT
Beedie
Environmental Science
Psychology
Education
Gerontology
Chemistry
Criminology
Linguistics
International Studies
Engineering Science
Mechatronic Systems Engineering
Resource & Environmental Mgmt
Philosophy
First Nations Studies
Gender, Sexuality & Women’s Studies
History

Quantitative literacy
Math
(SIAT)
Beedie
Environmental Science
Psychology
Chemistry
Criminology
Linguistics
International Studies
Engineering Science
Mechatronic Systems Engineering
Resource & Environmental Mgmt

Information literacy
Math
Political Science
French
Humanities
SIAT
Beedie
Environmental Science
Psychology
Education
Gerontology
Chemistry
Criminology
Linguistics
International Studies
Engineering Science
Mechatronic Systems Engineering
Resource & Environmental Mgmt

Teamwork and problem solving
Math
Political Science
SIAT
Beedie
Psychology
Education
Chemistry
Criminology
International Studies
Engineering Science
Mechatronic Systems Engineering
Resource & Environmental Mgmt
Gender, Sexuality & Women’s Studies
History
Civic knowledge and engagement—local and global
Political Science
French
Beedie
Environmental Science
Education
Gerontology
Criminology
International Studies
Engineering Science
Mechatronic Systems Engineering
First Nations Studies
Gender, Sexuality & Women's Studies
History

Intercultural knowledge and competence
(Political Science)
French
Humanities
SIAT
Psychology
Education
Linguistics
International Studies
Resource & Environmental Mgmt
First Nations Studies
Gender, Sexuality & Women's Studies
History

Ethical reasoning and action
SIAT
Beedie
Psychology
Education
Criminology
Linguistics
Engineering Science
Mechatronic Systems Engineering
Philosophy
First Nations Studies
Gender, Sexuality & Women's Studies

Foundations and skills for lifelong learning
Math
Political Science
French
Humanities
SIAT
Beedie
Environmental Science
Psychology
Education
Gerontology
Chemistry
Criminology
International Studies
Engineering Science
Mechatronic Systems Engineering
Philosophy
First Nations Studies
Gender, Sexuality & Women's Studies
History

Synthesis and advanced accomplishment across general and specialized studies
Math
Political Science
French
Humanities
SIAT
Beedie
Environmental Science
Psychology
Education
Gerontology
Chemistry
Criminology
International Studies
Engineering Science
Mechatronic Systems Engineering
Philosophy
First Nations Studies
Gender, Sexuality & Women's Studies
History
APPENDIX D. GUIDES AND EXAMPLES FOR DEVELOPING ASSESSMENT PLANS.

University of Guelph: [https://www.uoguelph.ca/vpacademic/avpa/outcomes/](https://www.uoguelph.ca/vpacademic/avpa/outcomes/)
Document is under “Guide” in the top bar.
Kenny, N. and Desmarais, S. No year. A guide to developing and Assessing Learning Outcomes at the University of Guelph.


University of Massachusetts at Amherst: [https://www.umass.edu/oapa/](https://www.umass.edu/oapa/)
Document under “Tools and Services”

Document under “Our Research / Additional Research”

Under “Our Priorities / Learning Outcomes” there is a resource room with many useful documents. One that we consulted was:
APPENDIX E: USEFUL WEBSITES

Higher Education Quality Council of Ontario
http://www.heqco.ca/en-ca/OurPriorities/LearningOutcomes/Pages/Home.aspx

University of Toronto:
https://sites.google.com/site/uoftlearningoutcomesproject/home/rubrics

Association of American Colleges and Universities:
https://www.aacu.org/value/rubrics

The National Institute of Learning Outcomes Assessment in the US:
http://www.learningoutcomesassessment.org/TFComponentSLOS.htm

From the UK, an online support tool:
http://jiscdesignstudio.pbworks.com/w/page/62440742/Tools%20to%20support%20implementation

Carnegie Mellon University:
http://www.cmu.edu/teaching/assessment/index.html