MEMORANDUM

To: Executive Committee of CGPS

Copy: Dr. Maureen Reed, Assistant Director, School of Environment and Sustainability

From: Graduate Programs Committee

Date: September 4, 2020

Re: New Master of Sustainability (M.Ss.) degree program with fields of specializations in 1) Regenerative Sustainability and 2) Energy Security to replace the existing Master of Sustainable Environment Management (M.S.E.M.) degree as well as proposals for new graduate certificates in 1) Sustainability Solutions, 2) Governance Foundations for Sustainability, 3) Community Energy Planning & Finance, and 4) Energy Transitions

On June 29, 2020, the Graduate Programs Committee considered a proposal for a new Master of Sustainability (M.Ss.) degree with two fields of specialization. In addition four new graduate certificates are being proposed. Any of the certificate programs could be completed independently as micro credentials. Alternatively, each of the certificates is designed to ladder into one of the degree program options.

All new courses associated with the new programming have been approved through course approval processes as there was anticipated demand for course enrollment in fall 2020 and winter 2021.

The M.Ss in Energy Security is proposed as a project-based program, while the M.Ss. in Regenerative Sustainability is proposed to have project and course-based options.

Each of the proposed degree programs options would require completion of ENVS 886: Building Understanding in the Age of Reconciliation, which supports institutional priorities.

A Social Science Research Lab (SSRL) survey had been conducted to gain a sense of demand. All units on campus are facing financial constraints, so planning must be thoughtful and careful. The proponents were projecting a modest increase in demand, and the enrolment projections should allow the program to be sustainable. It was suggested that the projected breakeven costs seemed conservative. It was suggested that the online delivery would be more attractive to more students compared to in-person and/or combined delivery.
The proposals contain standard CGPS policy language on probationary admission. Specific language on probationary requirements would be more appropriate within individual offers of admission, rather than in the full proposal. With probationary admission, there were probationary terms specific to the student, and once satisfied, the student was no longer on probation.

Options for probationary admission and options to complete certificates were anticipated to open doors and remove barriers providing opportunities for enrolment from prospective students in northern and Indigenous communities.

The Graduate Programs Committee passed the following motions:

Motion: To recommend approval of the Master of Sustainability in Regenerative Sustainability.
Morrison/Tanaka 7 in favour/1 opposed* CARRIED

Motion: To recommend approval of the Master of Sustainability in Energy Security.
Morrison/Tanaka 7 in favour/1 opposed* CARRIED

Motion: To recommend approval of the graduate-level certificate in Sustainability Solutions.
Chibbar/Morrison 7 in favour/1 opposed* CARRIED

Motion: To recommend approval of the graduate-level certificate in Governance Foundations for Sustainability.
Chibbar/Morrison 7 in favour/1 opposed* CARRIED

Motion: To recommend approval of the graduate-level certificate in Community Energy Finance and Planning.
Chibbar/Morrison 7 in favour/1 opposed* CARRIED

Motion: To recommend approval of the graduate-level certificate in Energy Transitions.
Chibbar/Morrison 7 in favour/1 opposed* CARRIED

*It was clarified that opposition was noted on proposed tuition rates only, and not the academic merit of the programs.

Attached please find the full proposal.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca

:kc
Proposals for Academic or Curricular Change

Master of Sustainability (M.Ss): The Revised Master of Sustainable Environmental Management

and

Suite of Graduate Certificates to complement M.Ss program

Submitted 22 June 2020
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PROPOSAL IDENTIFICATION: Master of Sustainability (M.Ss)

Title of proposal: Master of Sustainability (M.Ss): The Revised Master of Sustainable Environmental Management program

Degree(s): Master of Sustainability (M.Ss)

Field(s) of Specialization:
   1) Regenerative Sustainability
   2) Energy Security

Level(s) of Concentration: n/a

Option(s): n/a

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Proposed date of implementation: May 2021

Proposal Document

Academic Justification

a. Describe why the program would be a useful addition to the university, from an academic programming perspective.

The graduate students educated over the next 5 to 10 years will be in leadership positions in industry, governments (including Indigenous governments), philanthropic foundations, civil society organizations, and academia. This will occur just as the full impacts of climate change, resource consumption and exploitation, and population growth threaten global thresholds for planetary health and human well-being. At the same time, rising inequalities within and between nations and countries challenge the capacity of
societies to adapt to global change equitably with full recognition of human rights and dignity. The world needs leaders, innovators, and change-makers against this global backdrop. To become the “university the world needs”, the University of Saskatchewan is uniquely poised to prepare such graduates (USask, 2018).

Strategic gaps exist in the integration of social and natural sciences in addressing sustainability issues in current programming. Our Master of Sustainability program will initially focus on two areas—renewable energy and regenerative sustainability. Energy is a focal area and significant challenge for the coming decades, especially in Western Canada, where we aim to help build the leaders needed to facilitate the coming energy transition. Regenerative sustainability challenges students to think beyond the environment and simply lessening impacts; it focuses on truly transformative options that help regenerate and sustain local and global environments and communities. Through this Master of Sustainability program, we will build capacity in areas of high demand, strongly aligned with the university’s strategic plan and in response to the needs of Canada and the world.

The proposed program is based on a common set of design principles and a core set of courses. We have revised the structure of our current Master of Sustainable Environmental Management (MSEM) (approximately 25–30 students/year) to incorporate two initial fields of study: Regenerative Sustainability and Energy Security—effectively doubling the enrolment capacity within this Master’s program (projected enrolment ~50 students/year)—and renamed the program to a “Master of Sustainability” (henceforth M.Ss.) to rebrand this program.

The President’s Office has indicated that sustainability is one of the University of Saskatchewan’s top priorities, and offering a professional program with a clear and simple name—a Master of Sustainability—will signal the institution’s commitment to this priority, with credible backing from SENS. Ultimately, the program name on a parchment is not a lynchpin for program success. While the M.Ss designation might not be immediately familiar at USask, we note that our other degrees have sustainability in the title—Master of Environment and Sustainability (MES) and Master of Sustainable Environmental Management (MSEM). However, we opted against a project-based MES to more readily distinguish the professional program from the academic program and against retaining the MSEM because the focus is no longer on management.

Furthermore, with an effective marketing strategy, we can enhance the USask and SENS brands and increase our overall presence in the U15. SENS offers fields of study and program content that sets us apart from other sustainability programs domestically and internationally; currently, no other institutions offer programs specifically focused on renewable energy in northern and remote communities or regenerative sustainability. As we extend our sustainability “brand”, we anticipate other fields of study can fall under this degree name (e.g., climate action), further strengthening visibility and recognition for the MSs. We are clearly committed to research that supports Reconciliation, Indigenous sovereignty, and incorporating Indigenous perspectives and ways of knowing, as outlined in our involvement with the CASES project, and incoming Energy Security field of study in the M.Ss. To this end, we propose a marketing campaign that puts the M.Ss front and centre of USask student recruitment plans, building on the brand awareness employed by the United Nations Sustainable Development Goals and promoting the M.Ss as the graduate degree the world needs.

By combining the two fields of study in a single Master’s program, we anticipate increased viability, sustainability, and appeal of the program and heightened recognition of USask as an international contributor to sustainability research and education. We also aim to use this structure as a model from which we can build future fields of study—e.g., Biocultural Conservation and Food Security. Additionally, this structure will more easily allow us to build and deliver some common foundational courses that can serve all M.Ss fields of study, and thus, create some economy of scale.

Additionally, we are proposing a suite of four graduate certificates connected with this M.Ss, that can either be taken as stand-alone certificates or be used to ladder into the M.Ss. See Appendix B for visual map of the
relationship between each certificate and the M.Ss. A proposal for this suite of certificates follows this proposal.

b. **Giving consideration to strategic objectives, specify how the new program fits the university signature areas and/or integrated plan areas, and/or the college/school, and/or department plans.**

Sustainability-related issues and solutions are truly interdisciplinary and transdisciplinary. This program will draw on expertise, subject knowledge, and issues related to five of the University’s six signature areas—Agriculture, Energy and Mineral Resources, Indigenous Peoples, One Health, and Water Security. This revised program also closely aligns with the following institutional priorities as set out in the *University Plan 2025* (USask, 2018):

**Courageous Curiosity**

*Uplift Indigenization* through our core courses and focus on energy security, we will strive to offer graduate programming that has been requested and validated by our Indigenous partners and to provide accessible and flexible programming options to amplify Indigenous student recruitment and retention. In our regenerative sustainability program, we embrace diverse ways of knowing, including Indigenous knowledges, and often work with literature, case studies, and research projects completed in collaboration with, or led by, Indigenous Peoples.

*Embrace Interdisciplinarity,* drawing on our many years of experience and skill in interdisciplinary integration-in-practice. Through a diversity of specialist areas of teaching faculty (presently including biology, economics, education, engineering, geography, history, hydrology, Indigenous studies, political studies, toxicology) we enhance the University’s commitment to Sustainability in its academic programming, by providing an integrated, forward-thinking approach to tackling today’s sustainability issues, challenges, and needs.

*Seek solutions* to “confront humanity’s greatest challenges” by offering a solutions-oriented program that will equip our graduates with the knowledge, skills and human capacities (RBC, 2018) needed to define problems and identify solutions to sustainability-related challenges.

**Boundless Collaboration**

*Embolden Partnerships* by fostering existing and new partnerships with Indigenous and settler communities, non-profit organizations, governments, and industry through delivery of requested programming (i.e., energy security) and students working with partners in project placements.

*Experience Reconciliation* by providing required courses that address the needs expressed by Indigenous partners such as *Building Understanding in an Age of Reconciliation, The Art and Practice of Negotiations, Standpoint, Reflexivity, and Power in Sustainability Problem-solving,* while weaving Indigenous perspectives and ways of knowing into courses. Course delivery and projects, where appropriate. Throughout the program we offer the opportunity to build and maintain respectful relationships among students and partners.

c. **Is there a particular student demographic this program is targeted towards and, if so, what is that target? (e.g. Aboriginal, mature, international, returning)**

Within the M.Ss program, we are aiming at a fairly broad demographic. We want to attract both *mid-career professionals* who already have experience in environmental fields and *returning students* wanting to work in sectors addressing sustainability challenges. Our consultations and market survey have suggested a demand from both cohorts for this kind of programming. Additionally, a mix of these cohorts is often ideal in supporting peer-to-peer learning in an online environment.
However, the target student demographic does differ slightly between streams. The Energy Security stream is aimed at a narrower demographic and is designed to train working professionals who need this training to advance their work in the energy sector. Priority will be given to the recruitment and training of Indigenous students and students from northern and remote communities. Indigenous partner organizations and communities have committed to assisting with Indigenous student recruitment. Indigenous students will have the opportunity to live and study in their own community, ensuring retention and building capacity in local Indigenous communities. The Regenerative Sustainability stream demographic is a bit broader, and we expect it to include a higher proportion of international students than in the energy stream. Like Energy Security though, we aim to attract a mix of mid-career professionals and recent graduates.

The USask strategic plan and core values prioritize Reconciliation and Indigenous contributions to academia. Our Master of Sustainability (particularly the Energy Security field of study) is a demonstrated commitment to supporting the education of Indigenous students and the autonomy of Indigenous communities with regards to the development of sustainable practices and policy solutions to the challenges these communities face. We recognize that Indigenous students face many barriers to attending post-secondary education; the 2-year, online program provides a way for students to achieve their educational goals without having to deal with the financial and emotional burden of leaving their families or uprooting them for a conventional on-campus program.

Similarly, the revised structure, which offers online and blended courses and full-time (1 year) and part-time (2 years) options, also increases accessibility, flexibility, and skills development for working professionals. While we have seen increasing enrolments in the existing MSEM program, relatively few have been working professionals. Unfortunately, the current model for delivery (in-person, weekdays, inflexible, intensive 1-year program) of our MSEM program does not fully accommodate the needs of employed professionals (e.g., the primary or sole income earner often cannot afford to take a year for unpaid study; reducing a double-income household to a single income plus tuition expenses is also challenging; and across industries, there is an inequity of options for paid/unpaid leaves for education, if a leave is even possible at all). We believe these changes will significantly increase accessibility to our professional programs for working (and particularly domestic) professionals by allowing them to study while continuing to work. Results from our market survey indicate that offering flexible program options would increase the likelihood of completing post-secondary education in sustainability for 81% of the prospective student respondents.

d. What are the most similar competing programs in Saskatchewan, and in Canada? How is this program different?

Energy Security: Although governments, utilities, and communities are all seeking to increase the use of renewable energy technology in northern, Indigenous, and remote areas, until now, no educational programs have existed to offer capacity in this niche sector. A few institutions offer graduate programming in energy; however, none focus on professional skills training for northern and remote areas with a target student demographic of Indigenous and northern professionals. This truly sets us apart from all other Canadian and international programs. Furthermore, the M.Ss in Energy Security will impact all stakeholders, improve knowledge and understanding amongst all parties, and thus reduce communication barriers that currently exist in this sector.

Regenerative Sustainability: This field of study will push the envelope beyond generic sustainability programming and is broader than restoration ecology. Rather, Regenerative Sustainability is solutions-oriented and integrates natural and social sciences. The concept of regenerative sustainability is one that “moves beyond sustaining the environment to one that can regenerate its health—as well as our own” (Reed, W. E. 2007) and one that “enables social and ecological systems to maintain a healthy state and to evolve” (Brown et al., 2018).
Our program will offer a Master’s degree with specialization in one of two fields of study. No university is offering the suite of applied, design-thinking, and assessment-oriented courses that we propose, focussed on regeneration by design rather than simply lessening or understanding impacts. Additionally, this program is intended to provide skills development for professionals to take up leadership positions in work situations rather than train academics. The two closest programs offered in Canada are at Royal Roads University (MA/MSc in Environment and Management) and Western University (Master of Environment and Sustainability); however, neither institution’s program offers a focus on Energy or Regenerative Sustainability.

See Appendix C for a list of other sustainability programs across Canada.

Admissions

a. What are the admissions requirements of this program?

1. a four-year undergraduate degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study, OR a three-year first cycle undergraduate degree, in an academic discipline relevant to the proposed field of study, from an institution meeting the criteria set forth in the Bologna Declaration, will be acceptable as the equivalent of an undergraduate degree.

2. a minimum cumulative weighted average of at least a 70% (USask grade system equivalent) in the last two years of study (e.g., 60 credit units)

3. Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. A minimum overall TOEFL score of 86, a minimum overall IELTS score of 6.5, or another approved test as outlined by the College of Graduate and Postdoctoral Studies. [Note: These are minimum language proficiency requirements; however, stronger scores are generally expected for successful entry into the M.Ss program.]

4. Statement of Intent: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to undertake the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program and their chosen field of study. This statement is a key component in adjudicating each applicant's suitability for the program.

5. Letters of reference: Applicants will need to provide three letters of reference—either academic or professional letters.

Probationary Admission: Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on a probationary status to a program. Applicants in this category may be required to take one or more preparatory courses to improve their qualifications. In this case, they will be required to pay additional fees. The student’s status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Program Director or Graduate Chair may recommend to CGPS that the student be considered fully-qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions, agreed to by the student and by the College of Graduate and Postdoctoral Studies.

For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies Academic Policies.
Description of Program

a. What are the curricular objectives, and how are these accomplished?

The Master of Sustainability (M.Ss) is a 30-credit unit program with a common core and two fields of study: Energy Security and Regenerative Sustainability (see Fig. 1, below). All students are required to take 9 credit units of foundational core courses and must specialize in one of the two fields of study. The mission of the Master of Sustainability is to inspire the next generation of leaders to forge robust and collaborative solutions to sustainability challenges.

Curricular Objectives

Common Core: Graduates of the M.Ss will be able to

1. Engage challenging sustainability concepts and practices from multiple perspectives.
2. Recognize the importance of including Indigenous peoples and practices in advancing a sustainability agenda.
3. Demonstrate the skills required to become effective and reflective leaders who can implement sustainability solutions in the private, public, and not-for-profit sectors.

The mission of the Energy Security stream is to empower a network of northern, Indigenous, remote, and career professionals through distance education and purpose-driven practical experience to lead sustainable community energy development. Graduates of the M.Ss in Energy Security will be able to

1. Demonstrate knowledge of renewable energy technology for energy transitions.
2. Employ their skills and crucial tools for managing energy projects.
3. Identify policy and regulatory opportunities and barriers for advancing community renewable energy.
4. Undertake community economic analyses to determine the business case for renewable energy projects.
5. Lead best practices for holistic community energy project development.

The mission of the Regenerative Sustainability stream is to empower our graduates to catalyze positive, transformative, changes in socio-ecological systems by engaging with the latest developments in sustainability thinking and practice. Graduates of the M.Ss in Regenerative Sustainability will be able to

1. Recognize and critically assess root causes of sustainability problems.
2. Reimagine sustainability problems through the lens of systems and design thinking.
3. Demonstrate professional skills as reflective practitioners and change-oriented thinkers.
4. Collaborate to co-produce knowledge and lead best practices for regenerative sustainability.
**Mission Statement:** The mission of the Master of Sustainability is to inspire the next generation of leaders to forge robust and collaborative solutions to sustainability challenges.

*new courses are indicated in blue*

**Common Core** (9 credit units) “Foundational” courses to ensure all students have the necessary foundational knowledge required for success within the program

**Sustainability and Thriving in Uncertainty**
ENVS 818.1 Introduction to Sustainability
ENVS 850.1 Systems Thinking for Sustainability

**Institutions for Governance and Relations**
ENVS 882.2 Foundations of Governance for Sustainability
ENVS 884.1 Fundamentals of Environmental Law and Policy OR ENVS 885.1 Practical Law for Project Development
ENVS 886.2 Building Understanding in the Age of Reconciliation
ENVS 834.2 The Art and Practice of Negotiations

Students must take an additional 21 CU in their chosen field of study, either Energy Security or Regenerative Sustainability.

### Energy Security

**Mission Statement:** The Energy Security stream empowers a network of northern, Indigenous, remote, and career professionals through distance education and purpose-driven practical experience to lead sustainable community energy development.

**Required Courses** (15 cu)
- ENVS 840.3 Renewable Energy & Energy Transitions
- ENVS 841.3 Renewable Energy Systems
- ENVS 842.3 Community Economic Analysis & Renewable Energy
- ENVS 843.3 Energy Project Finance
- ENVS 844.3 Community Energy Planning

**Project** (6 cu)
ENVS 992.6 Project in Environment and Sustainability (project or placement on case-by-case basis)

### Regenerative Sustainability

**Mission Statement:** The Regenerative Sustainability stream empowers our graduates to catalyze positive, transformative, changes in socio-ecological systems by engaging with the latest developments in sustainability thinking and practice.

**Required Courses** (12 cu)
- ENVS 805.3 Data-Driven Solutions for Sustainability
- ENVS 807.3 Sustainability in Theory and Practice
- ENVS 810.1 Standpoint, Reflexivity, and Power in Sustainability Problem-Solving
- ENVS 851.2 Design-Thinking for Sustainability
- ENVS 853.3 Regenerative Sustainability

**Electives** (minimum 3 cu)
To be chosen from the suite of SENS courses in any given year—with the possibility of special permission to take courses outside of SENS. All electives must be pre-approved by the Program Director through the completion of a “program of studies”.

**Project** (6 cu)
ENVS 992.6 Project in Environment and Sustainability (project or placement on case-by-case basis)

or

**Additional Electives** (6 cu)
ENVS 990.0: The purpose of the 990 Seminar Series is to bring students, faculty, and partners together to learn about sustainability challenges, case studies of success, emerging opportunities, professional practice, and skills required by sustainability practitioners, and to help build a cohesive network of scholars and professionals engaged in and connected to activities at USask.

b. Describe the modes of delivery, experiential learning opportunities, and general teaching philosophy relevant to the programming. Where appropriate, include information about whether this program is being delivered in a distributed format.

The impetus behind undertaking a major revision of our MSEM program was to create an exceptional program that 1) meets the current and future demand from industry and community stakeholders for an energy program, 2) aims to build key skills and knowledge for sustainability practitioners to take leadership roles, and 3) increases equity through enhanced accessibility and flexibility of program delivery. The characteristics embedded within this revised program include:

- Case-based learning opportunities
- Clear links to addressing the UN's Sustainable Development Goals
- Current and highly applied solutions-oriented programming
- Experiential learning opportunities (i.e., learning by doing—guided by needs identified by practitioners), such as project placements
- Online and blended courses
- Full- and part-time options: Students can choose to complete the program in 1 year of intensive study or over 2 years of part-time study.
- Certificates (see following proposal) that can be taken as stand-alone certificates or used to ladder into the M.Ss.

Indeed, the results of our market survey support our proposed directions toward accessible programming and flexible options. Specifically, 81% of respondents indicated that they are more likely to pursue graduate educational opportunities if our programs offered flexible options such as online courses and the ability to complete programs part-time. Additionally, the majority of prospective students indicated that they would consider graduate programs that offered combined delivery (a blend of online and on-campus).

Our teaching philosophy is centered around building the skills and approaches students need to tackle deep, complex, and long-lasting sustainability problems. We employ an experiential, solution-focused, interdisciplinary (sometimes transdisciplinary) approach, with an emphasis on professional skill development and deployment. We will engage case-based learning approaches to build crucial links across courses, helping students understand how to apply the new skills and methods they are learning, becoming agents of changes as they mobilize theory into practice to solve multi-faceted, often wicked, problems. We embrace complexity, helping our students understand the linkages across human and natural systems, and consider the importance of complexity and uncertainty, rather than avoid them. Students deepen their respect for a range of perspectives and ways of knowing, and their understanding of themselves and how their training, skills, attributes, and background affect their role as sustainability practitioners.
Provide an overview of the curriculum mapping.
d. Identify where the opportunities for synthesis, analysis, application, critical thinking, problem solving are, and other relevant identifiers.

Our programs and courses are centered on building professional skills and knowledge for problem-solving and application of solutions. We will help students further develop their skills in synthesis and analysis, critical thinking, and problem-solving.

We have deliberately created a set of foundational core courses that will ensure all students build key skills and knowledge to achieve our graduate attributes. These courses are fundamental to ensuring students gain a breadth of knowledge required to fully understand the complexity of sustainability problems and solutions. Students will then delve into courses in their area of focus with further opportunities for application, problem-solving, critical thinking, interdisciplinary collaboration, and synthesis. We will sequence and network these courses appropriately to enhance student success. Some courses will include delivery by experienced practitioners (through either sessional or guest lecturers). Having access to this professional expertise will help students better understand real-world applications and build their professional networks.

All courses within the M.Ss and Graduate Certificates provide learning opportunities for our graduate students to develop and hone their professional skills, including critical and creative-thinking, interdisciplinary and intercultural collaboration, and professionalism. Our curriculum will also expand their potential for reflection, communication, and leadership. We are developing sets of case studies that will be used across courses that enable students to apply different critical “lenses”, and analytical and design approaches. These approaches will equip our graduates with a solutions-oriented skill set well matched to addressing real-world problems. We aspire to not only bring key solutions-oriented practitioners together to become agents of change-build solutions, but ensure they are equipped with the critical interdisciplinary, intersectoral, and intercultural skills required.

These opportunities can be found in:

- **Problem-solving**: specific courses such as 805, 850, 853, 884, 886
- **Synthesis and analysis**: 805, 807, 850, 882
- **Critical thinking**: all of our courses
- **Interdisciplinary collaboration**: everywhere
- **Application**: 805, 807, 834, 841–844, 850, 851, 853, 882, 884, 992 project

e. Explain the comprehensive breadth of the program.

The primary objective of the M.Ss is to empower graduates to become leaders in addressing sustainability-related challenges and to design and implement solutions. This program is designed to meet the needs of working professionals and recent graduates wanting to expand their skills in sustainability-related issues. Sustainability solutions do not belong to a single discipline; rather, the transdisciplinary nature of the program will bring together the vast expertise of our faculty with the educational and work experiences of our student base. This program will not just focus on sustainability concepts, but will also offer opportunities for students to learn how to apply knowledge and gain key skills related to governance, economics, law, finance, planning and regulation, negotiations, and Indigenous relations.

Solving the sustainability challenges of the world will only happen by bringing people together from across disciplines and ensuring development of critical skills for interdisciplinary, intersectoral, and intercultural collaboration. Not only will the program bring people together from across disciplines, but this mingling of the minds in the context of well-designed programming will also allow us to contribute to and advance positive solutions towards the United Nations’ Sustainable Development Goals (SDGs). The following table outlines which of the courses within the program work towards addressing specific SDGs.
|-----|---------------|----------------|-----------------------------|---------------------|------------------|-------------------------|-----------------------------|---------------------------------|----------------------------------|-------------------------------|---------------------------------|---------------------------------|-----------------------------|---------------------------|---------------------------|--------------------------------|-------------------------------|
f. Referring to the university “Learning Charter”, explain how the 5 learning goals are addressed, what degree attributes and skills will be acquired by graduates of the program.

The table below illustrates how the core and required courses in the Master of Sustainability (M.Ss) align with the Five Learning Objectives outlined in the University’s Learning Charter. The course numbers are listed for each learning objective and its sub-objectives. See Figure 1 above (p. 9) for a list of course numbers and titles.

Learning Charter: Five Learning Objectives

<table>
<thead>
<tr>
<th>Description</th>
<th>Core Courses</th>
<th>Energy Security</th>
<th>REGEN Sustainability</th>
<th>Seminars &amp; Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit of Truth and Understanding</td>
<td>Critical thinking</td>
<td>818, 834, 850, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Multiple ways of knowing and learning</td>
<td>818, 834, 850, 882, 884, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>807, 810, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Intellectual flexibility</td>
<td>818, 834, 850, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851, 853</td>
</tr>
<tr>
<td>Pursuit of Knowledges</td>
<td>Depth of understanding in subject area</td>
<td>818, 834, 882, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 835, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Breadth of understanding how subject area intersects with related subject areas</td>
<td>819, 834, 850, 882, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Understanding how one’s subject area impacts communities</td>
<td>818, 834, 882, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851</td>
</tr>
<tr>
<td></td>
<td>Using and applying one’s knowledge with respect to all individuals</td>
<td>818, 834, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851, 853</td>
</tr>
<tr>
<td>Pursuit of Integrity and Respect</td>
<td>Exercising intellectual integrity and ethical behavior</td>
<td>818, 834, 850, 882, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Recognizing and thinking through moral and ethical issues</td>
<td>818, 834, 882, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>807, 810, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Recognizing the limits to one’s knowledge, skills and understanding and acting in accordance with these limits</td>
<td>818, 834, 850, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851</td>
</tr>
<tr>
<td></td>
<td>Appreciate one’s own worldview while showing respect for others’ worldviews</td>
<td>818, 834, 850, 882, 884, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851, 853</td>
</tr>
<tr>
<td>Recognizing and thinking through moral and ethical issues</td>
<td>Develop and apply research, inquiry, knowledge creation and translation skills</td>
<td>818, 834, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 835, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Communicate clearly, substantively and persuasively in different contexts</td>
<td>818, 819, 834, 850, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>807, 810, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Locate, understand, evaluate and use information effectively, ethically, legally and with cultural appropriateness</td>
<td>818, 834, 850, 882, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>805, 807, 810, 851, 853</td>
</tr>
<tr>
<td>Pursuit of Skills and Practices</td>
<td>Commit to positive growth and change for oneself and for local, national and global communities</td>
<td>834, 850, 884, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>807, 810, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Act with confidence and strength of purpose for the good of oneself and different communities</td>
<td>834, 850, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>810, 851</td>
</tr>
<tr>
<td></td>
<td>Embrace responsibilities to oneself and others in ways that are authentic and meaningful</td>
<td>834, 850, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>810, 851, 853</td>
</tr>
<tr>
<td></td>
<td>Sharing knowledges and exercise leadership as acts of individual and community responsibility</td>
<td>818, 834, 885, 886</td>
<td>840, 841, 842, 843, 844</td>
<td>810, 851</td>
</tr>
</tbody>
</table>
g. Describe how students can enter this program from other programs (program transferability).

The Master of Sustainability (and its related suite of certificates) is open to graduate students from all disciplines. There are no barriers. In fact, we encourage cohorts of students from varying disciplines. We have had students as diverse as music, history, engineering, and health sciences enter SENS programs. Additionally, the suite of certificates may serve as stand-alone programs for professionals; however, we also expect that some students may also ladder into the professional M.Ss from the certificates.

h. Specify the criteria that will be used to evaluate whether the program is a success with a timeframe clearly specified by the proponents in the proposal.

We will evaluate the success of the program through the following metrics:

1. **Enrolment**: we project that the M.Ss will meet its enrolment targets for both streams within three years (25 new student enrolments per year in Energy and 30 new student enrolments per year in Regenerative Sustainability)
2. **Demand**: measured by the percentage of high-quality applicants and application numbers (annually)
3. **Student satisfaction**: measured by exit surveys and course evaluations (annually)
4. **Graduate employment and/or advancement**: determined by alumni surveys (3 yearly)
5. **Recognition**: for example, institutional ranking and rating
6. **Satisfaction of program partners**: measure by partner and employer surveys and continued engagement and requests for student projects (3 yearly)

i. If applicable, is accreditation or certificate available, and if so how will the program meet professional standard criteria. Specify in the budget below any costs that may be associated.

Not applicable

Consultation

a. Describe how the program relates to existing programs in the department, in the college or school, and with other colleges. Establish where students from other programs may benefit from courses in the program. Does this proposed program lead into other programs offered at the university or elsewhere?

The Master of Sustainability (M.Ss) is the revised and renamed Master of Sustainable Environmental Management (MSEM) program. This program will continue to be one of our two professional Master’s degrees—alongside our Master of Water Security program. We also have thesis-based Master of Environment and Sustainability (MES) and PhD programs as well as an Undergraduate Certificate in Sustainability. All the courses within the M.Ss will be open to our MES and PhD students as electives that may complement some of their research/thesis-related work.

Graduate students outside of SENS will also benefit from individual course offerings or from the various certificates. We note that there is a paucity of graduate courses on offer across campus; courses related to sustainability and governance may be particularly useful to students in other graduate programs.
b. List units that were consulted formally, and provide a summary of how consultation was conducted and how concerns that were raised in consultations have been addressed. Attach the relevant communication in an appendix.

In developing this Master of Sustainability, we consulted with stakeholders across campus and beyond, including our colleagues in the Colleges of Engineering, Johnson-Shoyama Graduate School of Public Policy, College of Arts and Science, College of Law, College of Education, and College of Agriculture and Bioresources. As a result of COVID-19 and the need for online delivery (which is woven into our new programs), we moved up the timeline for delivery of the program. While this limited the depth of the conversations we could have with other units on the program design, we achieved support of all six units we consulted. Our consultations revealed continued interest in strengthening co-delivery of key components from partners across the University. Engineering, JSGS, and Arts and Science have all expressed interest in pursuing opportunities to collaborate in the delivery of the program, and we are keen to build and enhance our partnerships with these units as we grow and refine the M.Ss.

We have also consulted with current USask students, alumni, associate members, the Saskatchewan Environmental Industry and Managers Association, and our community partners through a survey designed to capture their interest and demand for a professional Master’s and/or certificates. The results of this study are included in Appendix J.

We also consulted with our community and industry partners. Consultations were conducted in a wide-range of formats: Design Lab workshops, in-person meetings, symposia, planning meetings, and a market survey. We consulted with more than 60 practitioners and industry leaders from electrical utilities, Indigenous communities and government, First Nations businesses, and organization, energy developers, governments, and NGOs to co-design this curriculum. The list includes First Nations Power Authority, SaskPower, Gwich’in Tribal Council, Alaska Village Electric Cooperative, Valard, Arctic Energy Alliance, Northwest Company, Alaska Center for Energy and Power, among many others. This represented five provinces, two territories, and five states. We responded with the graduate level training that Indigenous and business leadership said they needed and helped us co-design.

Further, the academic design and learning objectives were workshopped within the Energy, Society, and the Arctic: An Interdisciplinary Workshop, April 25–27, 2019, Arthur L. Irving Institute for Energy and Society. The program was reviewed by leading energy scholars from across the United States, including from institutions such as MIT and Dartmouth. We were commended on our visionary master’s level program that met the needs of Northern, Indigenous and Remote communities. The very positive and constructive feedback was worked into the proposal we submitted. We stand behind the academic rigor of our program.

See Appendix E for a complete summary of consultation activities, stakeholders, and planning activities.

c. Provide evidence of consultation with the University Library to ensure that appropriate library resources are available.

We do not anticipate significant additional library resources. See Appendix G for evidence of consultation with the University Librarian.

d. List other pertinent consultations and evidence of support, if applicable (e.g. professional associations, accreditation bodies, potential employers, etc.)

Energy Security: Leaders in the utility industry and Indigenous communities agree that successful energy transitions require more than engineering and technical solutions; the development of new energy systems and renewable energy projects depend heavily on economics, policy and regulatory regimes, and
community consultation and engagement. A business case for new energy developments requires developing a value proposition that accommodates stakeholders and rights holders that leverages new economic and social opportunities and that is responsive to changing policy and economic environments. This transition, to a stable and secure energy future for remote, northern and Indigenous communities represents a significant opportunity for this generation to achieve reconciliation with Canada’s Indigenous peoples. This is especially true in Saskatchewan. Over an 18-month period, Greg Poelzer, a professor in SENS, engaged with provincial, territorial, and municipal governments, industry (including Valard Group, Artic Energy Alliance, First Nations Power Authority, Northwest Territories Power Corporation, Tli’cho Investment Corporation), and Indigenous communities (Peter Ballantyne Cree Nation, Gwich’in Tribal Council) to co-create the program design, focusing especially on foundational knowledge, renewable energy, community planning, and project management. See Appendix E for a description of the USask Community and Industry Engagement History.

**Regenerative Sustainability:**

In order to better understand the demand and appeal of a professional program, we surveyed a number of people who could be potential by students or employers. The people survey included recent Undergraduate Certificate in Sustainability graduates, USask alumni, SENS community partners, and adjunct faculty. Our survey included questions about likelihood of seeking education in sustainability, preference for master’s degree and certificates, program delivery options, program appeal, etc. The complete results of the survey are included in Appendix J.

**Budget**

a. **How many instructors will participate in teaching, advising and other activities related to core program delivery (not including distribution/breadth requirements or electives)?** (Estimate the percentage time for each person).

We estimate that approximately 13 instructors will participate in delivering the program, including faculty functioning as program directors (0.15 FTE each) and project directors (0.30 FTE each) for each field, and faculty teaching the courses (~0.15 FTE for each 3-cu course). Note: We anticipate that some of our instructors will teach more than one course within the program (this accounts for the difference between the number reported here—13—and the number projected in the budget table below. The number in the table (16) refers to the number of 3-cu equivalent courses to be delivered in the program.

The total number of credit units needed to deliver the program is 51 credit units: 9 cu of shared core courses + 21 cu for Energy Security + 21 cu for Regenerative Sustainability = 51 cu. Having a shared common core that both fields take allows us to institute some economies of scale—as opposed to needing to deliver two full 30 cu programs (totaling 60 cu).

Our long-term plan is to use our experiences from developing and implementing fields of study to inform the development of other fields of study into the Master’s program once the critical resources and infrastructure become available. We anticipate that this revised structure will serve as a model and open the door to co-develop future fields of study with USask partners in biocultural conservation and food security.

b. **What courses or programs are being eliminated in order to provide time to teach the additional courses?**

None; we are revising our current Master of Sustainable Environmental Management to incorporate two fields of study. Some courses will likely be offered less frequently to provide time to teach the additional courses.
c. How are the teaching assignments of each unit and instructor affected by this proposal?

The teaching load of instructors will remain static, with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors’ areas of expertise. Two required courses in the current MSEM program will become electives and will not be taught every year. We hired an APA (effective March 2020) to facilitate program delivery and management of the new Energy Security field of study.

d. Describe budget allocations and how the unit resources are reallocated to accommodate this program. (Unit administrative support; space issues, class room availability, studio/practice rooms, laboratory/clinical or other instructional space requirements).

One-time costs: We secured funds from the University’s Curriculum Innovation Fund as well as the time of a curriculum specialist from the GMCTL to assist with planning and program design. We have used this funding for consultations with external partners and online survey expenses to gather data from prospective students and employers.

Most of the core and required courses will be developed for on-line delivery to enhance flexibility for students who live and work off campus. The University of Saskatchewan Distance Education Unit has committed to provide the instructional design and instructional technology coordination components. See Appendix I.

On-going costs: On-going costs have been absorbed by the Unit. For example, program directors and coordinators are part of our existing faculty complement; administrative support will be provided by existing staff. We anticipate on-going commitments associated with:

- Two Program Directors: one each for Energy Security and Regenerative Sustainability.
- A Placements Coordinator to support program placements for both field of study (0.67 FTE).
- An Academic Programs Manager who oversees all academic programs in SENS (0.15 FTE).
- Salaries of administrative support: Graduate Advisor (0.30 FTE) and Graduate Support Assistant (0.2 FTE).
- Teaching Assistant positions to support faculty with increased class sizes and online delivery (6 TAships per academic year beginning in 2021/2022).
- Writing support for graduate students; the need for this support may increase as the programs and international scope of the student body grows.

As enrolment and revenues increase, we anticipate that these revenues will be reinvested to offset on-going costs.

e. If this program is to be offered in a distributed content, please describe the costs associated with this approach of delivery and how these costs will be covered.

Faculty development and delivery costs of the distributed content will be covered under assignment of duties with the program. Content will be developed in conjunction with the Distance Education Unit (DEU). See Appendix I for a Letter of Support.
f. **If this is an interdisciplinary program, please indicate whether there is a pool of resources available from other colleges involved in the program.**

N/A. All resources and courses will be delivered from within SENS.

g. **What scholarships will students be able to apply for, and how many? What other provisions are being provided for student financial aid and to promote accessibility of the program?**

We anticipate a number of scholarships will be offered by our external partners who are interested in securing graduates. To date, Peter Ballantyne Cree Nation and Valard Group of Companies have committed scholarships through the CASES program to support students in the Energy Security stream. See letters of support Appendix I.

Small scholarships ($1,500/student for six students on an annual basis) will also be available from SENS for M.Ss students in Regenerative Sustainability. Applicants are assessed for scholarship funding based on merit. Additionally, project placement partners are encouraged to provide whatever financial support to students for the projects that is possible and desirable for them, ranging from covering direct expenses to providing full scholarships. However, we cannot require this of all partners as we will not be able to secure enough projects if funding is a requirement.

h. **What is the program tuition? Will the program utilize a special tuition model or standard tuition categories?**

(\textit{The approval authority for tuition is the Board of Governors}).

To accommodate full- and part-time students and 3-, 2-, and 1-cu courses, we propose a special tuition model that charges student tuition based on a single credit unit. Our tuition projections are based on $375 per credit unit for domestic students and $634 for international students (based on the assumed 1.69 differential for all graduate students in fall 2021) in the 2021–2022 academic year.

Therefore, we propose a tuition model where

<table>
<thead>
<tr>
<th>Credit Unit</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cu</td>
<td>$375</td>
<td>$634</td>
</tr>
<tr>
<td>2 cu</td>
<td>$750</td>
<td>$1268</td>
</tr>
<tr>
<td>3 cu</td>
<td>$1125</td>
<td>$1901</td>
</tr>
</tbody>
</table>

In this model, tuition costs for each student will be assessed each semester according to how many credit units the student is taking in that semester (rather than the full program divided equally among 3 terms). This proposed adjustment to the tuition model is necessary to accommodate part-time students who chose to complete the program over 2 years.

Additionally, M.Ss students who are not enrolled in a course in a particular term do not need to register for that term. M.Ss students are permitted to be unregistered for a maximum of three consecutive terms. If not registered after the three consecutive terms, students will be automatically withdrawn from the program and will have to re-apply to the program to continue.

i. **What are the estimated costs of program delivery, based on the total time commitment estimates provided?** (Use TABBS information, as provided by the College/School financial officer).

The following tables provide 5-year budget projections for the delivery of the program. Table 1 indicates the enrolment projections for the program over the next 5 years. Table 2 indicates the expected tuition revenue and costs associated with program delivery. The highlighted column indicates the year (2023/24).
when we anticipate reaching our target enrolment numbers for the M.Ss program in both fields of study. In this year, the estimated total costs of the program are $616,551 while the estimated revenue is $926,515, which would lead to a $309,965 surplus in Year 3. With the exception of Year 1, we project a surplus in every year—$203,248 (Y2), $309,965 (Y3), $369,189 (Y4), and $389,588 (Y5).

Table 1: Enrolment projections for Energy Security and Regenerative Sustainability fields of study
**Table 2:** 5-year budget projections for the M.Ss program for both fields of study from 2021 to 2026 (with highlighted column indicating anticipated year of reaching target enrolments for both streams)

<table>
<thead>
<tr>
<th></th>
<th>2021/22</th>
<th>2022/23</th>
<th>2023/24</th>
<th>2024/25</th>
<th>2025/26</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Security</td>
<td>121,142</td>
<td>282,110</td>
<td>364,980</td>
<td>419,727</td>
<td>434,417</td>
</tr>
<tr>
<td>Regenerative Sustainability</td>
<td>327,625</td>
<td>519,940</td>
<td>561,535</td>
<td>581,189</td>
<td>601,531</td>
</tr>
<tr>
<td></td>
<td>448,767</td>
<td>802,050</td>
<td>926,515</td>
<td>1,000,916</td>
<td>1,035,948</td>
</tr>
<tr>
<td><strong>EXPENDITURES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary &amp; Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.15 FTE 2 Program directors</td>
<td>42,290</td>
<td>43,347</td>
<td>44,430</td>
<td>45,541</td>
<td>46,680</td>
</tr>
<tr>
<td>0.15 FTE Faculty - both streams (per 3 cu course x 16)</td>
<td>362,520</td>
<td>371,583</td>
<td>380,873</td>
<td>390,394</td>
<td>400,154</td>
</tr>
<tr>
<td>1 Sessional lecturer</td>
<td>7,500</td>
<td>7,688</td>
<td>7,880</td>
<td>8,077</td>
<td>8,279</td>
</tr>
<tr>
<td>Administrative staff</td>
<td>104,951</td>
<td>107,575</td>
<td>110,264</td>
<td>113,021</td>
<td>115,847</td>
</tr>
<tr>
<td>0.67 FTE Placement coordinator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.15 FTE Manager - Academic programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.3 FTE Graduate advisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.2 FTE Graduate support assistant</td>
<td>22,321</td>
<td>22,879</td>
<td>23,451</td>
<td>24,038</td>
<td>24,639</td>
</tr>
<tr>
<td>3,720 TAship - 12 hours per week x 13 weeks plus benefits</td>
<td>14,350</td>
<td>17,500</td>
<td>19,250</td>
<td>19,250</td>
<td>19,250</td>
</tr>
<tr>
<td>Total Salary &amp; Benefits</td>
<td>553,932</td>
<td>570,572</td>
<td>586,149</td>
<td>600,321</td>
<td>614,846</td>
</tr>
<tr>
<td>Other Expenditures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Costs - promo &amp; recruitment</td>
<td>5,000</td>
<td>5,100</td>
<td>5,202</td>
<td>5,306</td>
<td>5,412</td>
</tr>
<tr>
<td>Scholarships - 6 x $1,500</td>
<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
</tr>
<tr>
<td>Online delivery $15/mo/student</td>
<td>7,380</td>
<td>14,130</td>
<td>16,200</td>
<td>17,100</td>
<td>17,100</td>
</tr>
<tr>
<td>Total other expenditures</td>
<td>21,380</td>
<td>26,230</td>
<td>30,402</td>
<td>31,406</td>
<td>31,512</td>
</tr>
<tr>
<td>Total Expenditures</td>
<td>575,312</td>
<td>598,802</td>
<td>616,551</td>
<td>631,727</td>
<td>645,360</td>
</tr>
<tr>
<td><strong>REVENUE OVER EXPENDITURES SURPLUS (DEFICIENCY)</strong></td>
<td>(126,545)</td>
<td>203,248</td>
<td>309,965</td>
<td>369,189</td>
<td>389,588</td>
</tr>
</tbody>
</table>

**Assumptions**

**Notes:**
1. Above excludes any maintenance / program fee that may be charged if a student takes longer than 2 years to complete
2. Overall salary escalation of 2.5% forecasted for all employee groups
3. Non-salary expenditures escalate 2% per year
4. Operating costs for promotion of energy security remain at $5K (50% of the $10K already allocated to professional programs)
5. Assumes each student receives 10 hours writing support for duration of their program
6. TABBS overall impact is positive

For a summary of the TABBS implications, see Appendix F.
j. What is the enrolment target for the program? How many years to reach this target? What is the minimum enrolment, given the limitations of the resources allocated to the program?

We anticipate enrolments of 25 students per year within three years (16 in 2021/22, 20 in 2022/23, 25 in 2023/24) in the Energy Security stream, and 30 students per year within two years (25 in 2021/22, 30 in 2022/23) in the Regenerative Sustainability stream. Additionally, we anticipate 50% domestic and 50% international students in the Energy Security, and a 20% domestic and 80% international students in Regenerative Sustainability. See Table 1 above.

These target numbers are derived from two sources: historical numbers from the existing Master of Sustainable Environmental Management (MSEM) program data and knowledge that the environmental workforce in Canada is projected to grow steadily and at a quicker pace (24%, 90,000 workers) than the total labour force (7%). Also, demographic changes will lead to turnover in the existing environmental work force of about 30% (ECO Canada, 2017). The Royal Bank of Canada’s report Humans Wanted describes the increasing need for the kind of human and technical skills that these programs will provide (RBC, 2018).

k. What are the total expected revenues at the target enrolment level, separated into core program delivery and distribution/breadth requirements or electives? What portion of this expected revenue can be thought of as incremental (or new) revenue?

In Table 3, we provide a comparison of the total costs versus the incremental costs of the revised program. We provide the comparison for Year 3 of the program when we anticipate to reach our target enrolments for both fields of study. The incremental costs are based on the addition of the Energy Security stream into the Master’s program. The Regenerative Sustainability stream is the revised and renamed “MSEM”, and all costs associated with this stream are not considered incremental.
Table 3: Comparison of Total Costs and Incremental Costs of the Master of Sustainability program

<table>
<thead>
<tr>
<th></th>
<th>Total cost (2023/24)</th>
<th>Incremental Cost (2023/24)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Security</td>
<td>364,980</td>
<td>364,980</td>
</tr>
<tr>
<td>Regenerative Sustainability</td>
<td>561,535</td>
<td>0</td>
</tr>
<tr>
<td><strong>EXPENDITURES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SALARY &amp; BENEFITS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Directors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 @ 0.15 FTE</td>
<td>44,430</td>
<td>22,215</td>
</tr>
<tr>
<td>Faculty—both streams (per 3-cu course)</td>
<td>380,873</td>
<td>119,023</td>
</tr>
<tr>
<td>Sessional Instructor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7,880</td>
<td>7,880</td>
</tr>
<tr>
<td>Administrative Staff and Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Placements Coordinator</td>
<td>0.67 FTE</td>
<td>0.33 FTE</td>
</tr>
<tr>
<td>Manager, Academic Programs</td>
<td>0.15 FTE</td>
<td></td>
</tr>
<tr>
<td>Graduate Advisor</td>
<td>0.30 FTE</td>
<td>0.15 FTE</td>
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<tr>
<td>Graduate Support Assistant</td>
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</tr>
<tr>
<td>TAships (@$3720/each)</td>
<td>23,451</td>
<td>11,726</td>
</tr>
<tr>
<td>Writing Support</td>
<td>19,250</td>
<td>8,750</td>
</tr>
<tr>
<td><strong>Total Salary &amp; Benefits</strong></td>
<td>586,148</td>
<td>206,809</td>
</tr>
<tr>
<td>OTHER EXPENDITURES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Costs - promo &amp; recruitment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scholarship - 6 x $1,500</td>
<td>9,000</td>
<td>0</td>
</tr>
<tr>
<td>online delivery $15/mo/student</td>
<td>16,200</td>
<td>8,100</td>
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<tr>
<td><strong>Total other expenditures</strong></td>
<td>30,402</td>
<td>8,100</td>
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<tr>
<td><strong>TOTAL EXPENDITURES</strong></td>
<td>616,550</td>
<td>214,909</td>
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<tr>
<td><strong>REVENUE OVER EXPENDITURES</strong></td>
<td>309,965</td>
<td>150,071</td>
</tr>
<tr>
<td><strong>SURPLUS (DEFICIENCY)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I. At what enrolment number will this program be independently sustainable? If this enrolment number is higher than the enrolment target, where will the resources come from to sustain the program, and what commitments define the supply of those resources?

The increase in enrolment that we expect as a result of the redesign will lead to an incremental tuition revenue of $364,980. The program will be financially sustainable and represents an important alternative revenue stream for SENS. To break even on full costs, we require 35 students (20 Regenerative Sustainability students and 15 Energy Security students); however, based on incremental costs, the breakeven is 15 Energy Security students. These numbers are based on the domestic/international enrolment numbers for each stream—20% domestic / 80% international for Regenerative Sustainability and 50% / 50% for Energy Security.
m. Proponents are required to clearly explain the total incremental costs of the program. This is to be expressed as: (i) total cost of resources needed to deliver the program; (ii) existing resources (including in-kind and tagged as such) applied against the total cost; and (iii) a listing of those resource costs that will require additional funding (including new in-kind support).

We expect to reach our target enrolment for both streams of the M.Ss in 2023–2024. In this year, total cost for the program is $616,551 which is less than the projected tuition revenue of $926,515 by $309,965. With the exception of the first year, our budget projections indicate surpluses in Years 2–5. For more detail, see Table 2 above.

n. List all new funding sources and amounts (including in-kind) and the anticipated contribution of each to offsetting increment program costs. Please identify if any indicated funding is contingent on subsequent approval by a funding authority and/or future conditions. Also indicate under what conditions the program is expected to be cost neutral. These proponents should also indicate any anticipated surpluses/deficits associated with the new program.

University of Saskatchewan Provost’s Office

Extensive discussions have taken place with the Provost, who approved two new faculty positions to support the Energy Security field of study with the following funding model:

a. **New Academic Programming Appointment** (start date 1 March 2020)—effective 1 May 2020, 100% salary & benefits is SENS’s responsibility

b. **New Centennial Chair** (estimated start date 1 January 2021)
   - Up to $125K per year to cover off salary & benefits for a 5-year term with possibility to renew for another 5 years.

References


School Statement

Please provide here or attach to the online portal, a statement from the College which contains the following:

- Recommendation from the College regarding the program
- Description of the College process used to arrive at the recommendation
- Summary of issues that the College discussed and how they were resolved

The school statement for the Master of Sustainability and Graduate Certificates is in Appendix A.

Related Documents

At the online portal, attach any related documentation which is relevant to this proposal to the online portal. It is particularly important for Council committees to know if a curriculum changes are being made in response to College Plans and Planning Parameters, review recommendations or accreditation recommendations.

Letters of Support

The following letters of support have been received for this proposal:

Murray Fulton, Director, Johnson-Shoyama Graduate School of Public Policy
Susanne Kresta, Dean, College of Engineering
Martin Phillipson, Dean, College of Law
Mary Buhr, Dean, College of Agriculture and Bioresources
Michelle Prytula, Dean, College of Education
Gordon DesBrisay, Vice-Dean Academic, College of Arts and Science
Chief Peter A. Beatty, Peter Ballantyne Cree Nation
Steve Sousa, Valard Group of Companies
Cheri Spooner, Director, Distance Education Unit

All letters are included in Appendix I.

Consultation Forms

1. Consultation with the Registrar Form - completed by CGPS with Registrar’s Office

2. Complete Catalogue Entry (changes indicated in red)

Catalogue Entry for Master of Sustainability (M.Ss) (renamed MSEM)

Admission Requirements

1. a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study, OR a three-year first cycle undergraduate degree, in an academic discipline relevant to the proposed field of study, from an institution that meets the criteria set forth in the Bologna Declaration, will be acceptable as the equivalent of an undergraduate degree.

2. a minimum cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (e.g. 60 credit units)

Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. A minimum overall TOEFL score of 86, a
minimum overall IELTS score of 6.5, or another approved test as outlined by the College of Graduate and Postdoctoral Studies. [Note: These a minimum language proficiency requirements; however, stronger scores are generally expected for successful entry into the M.Ss program.]

3. **Statement of Intent**: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to join the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program. *This statement is a key component in adjudicating each applicant’s suitability for the program.*

4. **Letters of reference**: Applicants will need to provide three letters of reference—either academic or professional letters.

**Probationary Admission**: Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on a probationary status to a program. Applicants in this category may be required to take certain preparatory courses to improve their qualifications. In this case they will be required to pay additional fees. The student’s status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Program Director or Graduate Chair may recommend to CGPS that the student be considered fully-qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions, agreed to by the student and by the College of Graduate and Postdoctoral Studies.

For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies Academic Policies.

**Degree Requirements**

- **GPS 960.0** Introduction to Ethics and Integrity
- **GPS 961.0** Ethics and Integrity in Human Research, if research involves human subjects
- **GPS 962.0** Ethics and Integrity in Animal Research, if research involves animal subjects

All M.Ss students must complete a total of 30 credit units, including the following: 9 credit units of core courses.

- **ENVS 806.3** Field Skills in Environment and Sustainability
- **ENVS 807.3** Sustainability in Theory and Practice
- **ENVS 808.3** Tools and Applications for Sustainability Problem Solving
- **ENVS 805.3** Data Analysis and Management

**Core (9 credit units)**

**Required courses:**

- **ENVS 818.1** Introduction to Sustainability
- **ENVS 834.2** The Art and Practice of Negotiations
- **ENVS 850.1** Systems Thinking for Sustainability
- **ENVS 882.2** Foundations of Governance for Sustainability
- **ENVS 884.1** Fundamentals of Environmental Law and Policy OR **ENVS 885.1** Practical Law for Project Development
- **ENVS 886.2** Building Understanding in the Age of Reconciliation
- **ENVS 990.0** Seminar in Environment and Sustainability
Student must also declare which field of study they will pursue within the M.Ss—Regenerative Sustainability or Energy Security. Students must complete 21 credit units within their chosen field of study.

**Regenerative Sustainability (21 credit units)**

Students in the Regenerative Sustainability field of study must take

1. 12 credit units of required courses,
2. a minimum of 3 credit units of electives, and
3. either a 6-credit unit project OR an additional 6 credit units of electives.

1) **Required Courses** (12 credit units)
   - ENVS 805.3 *Data-driven Solutions for Sustainability*
   - ENVS 807.3 *Sustainability in Theory and Practice*
   - ENVS 810.1 *Standpoint, Reflexivity, and Power in Sustainability Problem-solving*
   - ENVS 851.2 *Design Thinking for Sustainability*
   - ENVS 853.3 *Regenerative Sustainability*

2) **Electives** (minimum 3 credit units): students must choose a minimum of 3 cu of course work from the available graduate courses offered in at the time of enrolment—with the possibility of special permission to take courses outside of SENS. All electives much be pre-approved by the Program Director through the completion of a “program of studies”.

3) **Project or Additional Electives** (6 credit units)
   - ENVS 992.6 *Project in Environment and Sustainability*
     OR
   - Additional Electives (6 credit units)

**Energy Security (21 credit units)**

Students in the Energy Security field of study must take

1. 15 credit units of required courses and
2. a 6-credit unit project.

1) **Required Courses** (15 credit units)
   - ENVS 840.3 *Renewable Energy and Energy Transitions*
   - ENVS 841.3 *Renewable Energy Systems*
   - ENVS 842.3 *Community Economic Analysis and Renewable Energy*
   - ENVS 843.3 *Energy Project Finance*
   - ENVS 844.3 *Community Energy Planning*

2) **Project** (6 credit units)
   - ENVS 992.6 *Project in Environment and Sustainability*

   - ENVS 990.0 Seminar in Environment and Sustainability
   - ENVS 992.6 Project in Environment and Sustainability
   - a minimum of 12 credit units (as approved by faculty)
PROPOSAL IDENTIFICATION: Graduate Certificates for M.Ss

Title of proposal: *Suite of Graduate Certificates to complement the Master of Sustainability program in SENS*

Degree(s):  
- Graduate Certificate in Sustainability Solutions
- Graduate Certificate in Governance Foundations for Sustainability
- Graduate Certificate in Energy Transitions
- Graduate Certificate in Community Energy Planning and Finance

Field(s) of Specialization: n/a

Level(s) of Concentration: n/a

Option(s): n/a

Degree College: College of Graduate and Postdoctoral Studies/School of Environment and Sustainability

Contact person(s):

**Dr. Martha Smith**  
Associate Dean  
College of Graduate and Postdoctoral Studies (CGPS)  
306-966-2229  
kelly.clement@usask.ca

**Dr. Maureen Reed**  
Assistant Director Academic  
School of Environment and Sustainability (SENS)  
mgr774@mail.usask.ca

Proposed date of implementation: May 2021

Proposal Document

Please provide information which covers the following sub topics. The length and detail should reflect the scale or importance of the program or revision. Documents prepared for your college may be used. Please expand this document as needed to embrace all your information.
Academic justification

a. Describe why the program would be a useful addition to the university, from an academic programming perspective.

These four certificate programs will provide a way for SENS to focus the knowledge we can share with working professionals; these individuals do not require an additional degree, or the placement opportunities that are more valuable to less experienced students or professionals. Instead, these individuals require more specialized training in a particular area, which is why the certificates have been designed to encompass thematic areas or address gaps in particular areas of knowledge.

Growing stressors affect all sectors of the economy, and all aspects of society. Addressing energy and environmental stressors requires integrative thinking, and a suite of professional tools and skills. As indicated by our market survey, more accessible, certificate programs will allow active professionals to broaden and deepen their expertise without the financial or time commitment of a full graduate degree. This is a key motivation behind development of these certificates. These certificate programs represent relatively short, accessible (online), market-oriented micro-credentials that use course offerings from ongoing programs (MSEM/M.Ss). As such they are expected to expand access to our programs, increase visibility of our programs due to broader uptake in professional communities, and add revenues without substantive increases in costs.

These proposed 6-, 7-, and 9-credit unit certificates are a thoughtful repackaging of the M.Ss courses to ensure we offer our graduate students what they need. We have built on advice provided by Dr. Nancy Turner, Director, Gwenna Moss Centre for Teaching and Learning relating to best-practices for building micro-credentials through certificates. The proposed configurations of courses in our micro-credentials are important for

1. Stackability—We propose these certificates to allow students to “stack” the credentials and lead to a degree program, the M.Ss. For example, a student could stack the Energy Transitions certificate (6 cu) and Community Energy Planning and Finance certificate (9 cu) to complete the required courses (15 cu) for the Energy Security stream in the M.Ss. If the 6- and 7-cu certificates were larger, then the number of credit units for the certificates would be more than for the programs they are intended to lead to.

2. Market demand—in our market survey, indicates that there is external interest/demand for “bite-size” credentials. In fact, 65% of survey respondents indicated that smaller certificate programs in a specialized topic would appeal to them as a post-secondary educational option.

When initially developed, our professional Master’s programs (Master of Sustainable Environmental Management and Master of Water Security) were conceived as ways for working professionals to enhance their credentials in sustainability-related fields. The intention was to provide programs that would attract working professionals who were seeking additional educational and skills-building opportunities. While we have seen increasing enrolments, relatively few have been working professionals in these programs. We attribute this to several factors, but the biggest barriers are accessibility, flexibility, and professional skill development. Unfortunately, the current model for delivery (in-person, weekdays, inflexible, intensive 1-year program) of the programs do not account for the needs of employed professionals (e.g., a professional who brings in the sole household income cannot afford to take a year of unpaid study; reducing a double-income household to a single income plus tuition expenses is also challenging; and across industries there is an inequity of options for paid/unpaid leaves for education, if a leave is even possible at all). Professional programs must adapt to the needs of the marketplace because they exist to provide the knowledge and expertise currently demanded in the workforce across various industries.

We intend to offer the courses in these certificates in an online format. We believe offering certificates online will increase accessibility to our professional programs for working professionals by allowing them to
study while continuing to work. The University of New Brunswick, for example, has a similar professional program (Master of Environmental Management), but students do not have the flexibility offered by our proposed certificate program; we believe this will make us more attractive to prospective students who are already working full time or have families, giving us an additional market share.

**Note:** We include this proposal for a suite of certificate as a package with our proposal for major revision of our flagship professional program, the Master of Sustainable Environmental Management (MSEM), which has been re-envisioned to become a Master of Sustainability (M.Ss).

b. **Giving consideration to strategic objectives, specify how the new program fits the university signature areas and/or integrated plan areas, and/or the college/school, and/or department plans.**

Canada is undergoing a period of profound economic, social, and technological change that needs a “mobile, skilled workforce, constantly learning, training, and upgrading to meet the demands of a changing world” (RBC, 2018). A mobile workforce needs opportunities to transition between and upgrade within jobs. Increasing access and flexibility of educational opportunities for energy security and regenerative sustainability is a major motivator.

Energy Security—with a focus on renewable energy—is a critical field of study area that can advance the USask’s dedication to and global impact on planetary health and human well-being. Within a global context, USask is uniquely positioned to deliver educational opportunities with a strong commitment to Indigenization, reconciliation, and decolonization. This commitment sets us apart from programs of similar format elsewhere and will attract students from Canada and the global north and south, and given the expected strong focus on indigenization and reconciliation, Indigenous peoples from across the world. The University of Saskatchewan’s strategic plan and core values prioritize Reconciliation and Indigenous contributions to academia. Our proposed certificates in energy security help fulfil our commitment to supporting the education of Indigenous students and the autonomy of Indigenous communities with regards to the development of sustainable practices and policy solutions to the challenges these underserved communities face. We know that Indigenous students face many barriers to attending post-secondary education; the online certificate program options provide a way for students to achieve their educational goals without having to deal with the financial and emotional burden of leaving their families or uprooting them altogether for a 1-year program.

While all certificates enhance the University’s commitment to sustainability, certificates related to regenerative sustainability will build on our current success in the professional Master’s program and be very visible contributions to this strategic priority. We anticipate that such visibility will enhance our reputation across a range of prestige indicators including leading initiatives within the Sustainable Development Solutions Network, and increasing our rating in the STARS rankings undertaken by the Association for the Advancement of Sustainability in Higher Education and the Times Higher Education (THE) World Impact Rankings in which USask participated for the first time this year.

These certificates will also address the issue of accessibility of graduate programs to allow all types of students (including working professionals and students with family commitments) opportunities for further education and skills building. The addition of the graduate certificates in Energy Security and Regenerative Sustainability align with SENS’s strategic plan and are fully consistent with the overall vision of the University of Saskatchewan being “the University the world needs,” “growing in recruitment of students,” and ensuring “our university is viewed as an accessible, go-to resource by partners and stakeholders.” (University Plan 2025)
c. **Is there a particular student demographic this program is targeted towards and, if so, what is that target? (e.g., Aboriginal, mature, international, returning)**

For our certificates, we are aiming at a fairly broad demographic. We want to attract both **mid-career professionals** (who already have experience in the environmental field) and **returning students** wanting to work in sectors addressing sustainability challenges. A mix of these cohorts is often ideal in supporting peer-to-peer learning in an online environment. We anticipate many students will see the certificates as an achievable goal while working full time. Although some will ladder to the full degree program, many will simply seek one or two certificates as they advance through their careers.

However, the target student demographic does look slightly different between the energy security certificates and the regenerative sustainability certificates. The energy security certificates are aimed at a narrower, defined demographic. These certificates are intended to train working professionals who need additional skills to advance their work in energy. **Priority will be given to recruitment and training of Indigenous students.** Indigenous partner organizations and communities are already assisting with Indigenous student recruitment. Indigenous students will have the opportunity to live and research in their own community after completing program residency requirements, ensuring retention and building capacity in local Indigenous communities. The regenerative sustainability certificates demographic is a bit broader, and we expect to include a higher proportion of **international students** than in the energy stream. Like the energy security stream though, we aim to attract a mix of mid-career professionals and recent graduates.

d. **What are the most similar competing programs in Saskatchewan, and in Canada? How is this program different?**

The intention of our certificates is to provide skills development for professionals in work situations rather than train academics. An environmental scan shows few sustainability graduate certificates exist across Canada. Given the dearth of micro-credential options, we believe these certificates will be attractive to many types of prospective students. The RBC Humans Wanted report (2018) indicates that students are not always looking for full degree programs; certificates help them gain the credentials they need in packages that are affordable in time and money. Also, we may attract strong international students who can benefit from this credential and/or who may ladder certificates into a degree without having to leaving their country.

See Appendix D for a list of other sustainability certificates.

**Admissions**

a. **What are the admissions requirements of this program?**

As one or more certificates may be used to ladder into the Master of Sustainability program, the admission requirements are the same for the certificates as they are for the Master’s program.

1. a four-year undergraduate degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study, OR a three-year first cycle undergraduate degree, in an academic discipline relevant to the proposed field of study, from an institution meeting the criteria set forth in the [Bologna Declaration](#), will be acceptable as the equivalent of an undergraduate degree.

2. a minimum cumulative weighted average of **at least** a 70% (USask grade system equivalent) in the last two years of study (e.g., 60 credit units)
3. **Language Proficiency Requirements:** Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. A minimum overall TOEFL score of 86, a minimum overall IELTS score of 6.5, or another approved test as outlined by the College of Graduate and Postdoctoral Studies. [Note: These are minimum language proficiency requirements; however, stronger scores are generally expected for successful entry into the program.]

4. **Statement of Intent:** Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to undertake the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program and their chosen field of study. *This statement is a key component in adjudicating each applicant’s suitability for the program.*

5. **Letters of reference:** Applicants will need to provide three letters of reference—either academic or professional letters.

*Probationary Admission:* Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on a probationary status to a program. Applicants in this category may be required to take certain preparatory courses to improve their qualifications. In this case they will be required to pay additional fees. The student’s status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Program Director or Graduate Chair may recommend to CGPS that the student be considered fully-qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions, agreed to by the student and by the College of Graduate and Postdoctoral Studies.

For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies [Academic Policies](#).

### Description of the program

a. **What are the curricular objectives, and how are these accomplished?**

   **Graduate Certificate in Sustainability Solutions** (minimum 9 credit units)

   *The Graduate Certificate in Sustainability Solutions* teaches new strategies to design and implement solutions to sustainability challenges. Courses build competencies towards regenerative design and sustainability alternatives to common sustainability problems by teaching key concepts and practical tools. New professionals and longstanding professionals will become more effective practitioners by learning about sustainability innovations and how to apply them. Graduates of this certificate will be able to:

   **Curricular Objectives:**
   1. Bridge social and natural sciences to advance an agenda for regenerative sustainability.
   2. Employ skills in organizing, analyzing, and interpreting empirical data.
   3. Demonstrate how systems function and apply design thinking tools to advance sustainability solutions.

   **Graduate Certificate in Governance Foundations for Sustainability** (minimum 7 credit units)

   *The Graduate Certificate in Governance Foundations for Sustainability* will help professionals who work with (or within) government agencies to better understand the basic structures of governance, actor groups and policy communities who influence governance, and the present-day imperatives of working with Indigenous peoples. Courses related to reconciliation and negotiation will also provide students with practical tools to
become more effective practitioners when planning and implementing sustainability innovations. Graduates of this certificate will be able to:

Curricular Objectives:
1. Apply governance concepts and tools to confront super-wicked problems.
2. Recognize the importance of respectful relationships with Indigenous peoples for sustainable governance arrangements.

**Graduate Certificate in Community Energy Planning and Finance** (minimum 9 credit units)
*The Graduate Certificate in Community Energy Planning and Finance* provides tools for planning and financing community renewable energy projects. Graduates of this certificate will be able to:

Curricular Objectives:
1. Demonstrate skills and crucial tools for managing energy projects.
2. Undertake community economic analyses to determine the business case for renewable energy projects.
3. Develop best practices for holistic community energy project development.

**Graduate Certificate in Energy Transitions** (minimum 6 credit units)
*The Graduate Certificate in Energy Transitions* is designed for professionals who seek to better understand how to navigate policy processes for transitioning to renewable energy. Graduates of this certificate will be able to:

Curricular Objectives:
1. Demonstrate knowledge of renewable energy technology for energy transitions.
2. Identify policy and regulatory opportunities and barriers for advancing community renewable energy.
3. Apply tools to assess generation, site-specific applications, and project development.

b. Describe the modes of delivery, experiential learning opportunities, and general teaching philosophy relevant to the programming. Where appropriate, include information about whether this program is being delivered in a distributed format.

Each certificate may be taken as a stand-alone certificate or used to ladder into the M.S.s. The impetus behind bundling our M.S.s courses into micro-credentials is to further increase accessibility to and flexibility of our graduate programs, allowing students options to find opportunities that meet their needs. The characteristics embedded within the certificates include:

- Case-based learning opportunities
- Clear links to addressing the Sustainable Development Goals
- Highly applied, solutions-oriented programming
- Experiential learning opportunities (i.e., learning by doing—guided by needs identified by practitioners)
- Online and blended courses

Our teaching philosophy is centered around building the skills and approaches students need to tackle deep, complex, and long-lasting sustainability problems. We employ an experiential, solution-focused,
interdisciplinary (sometimes transdisciplinary) approach, with an emphasis on professional skill development and deployment. We will engage case-based learning approaches to build crucial links across courses, helping students understand how to apply the new skills and methods they are learning, becoming agents of changes as they mobilize theory into practice to solve multi-faceted, often wicked problems. We embrace complexity, helping our students understand the linkages across human and natural systems, and consider the importance of complexity and uncertainty, rather than avoid them. Students deepen their respect for a range of perspectives and ways of knowing, and their understanding of themselves and how their training, skills, attributes and background affect their role as sustainability practitioners.
Provide an overview of the curriculum mapping.
d. Identify where the opportunities for synthesis, analysis, application, critical thinking, problem solving are, and other relevant identifiers.

A mentioned in our M.Ss proposal above, our programs and courses are centered on building professional skills and knowledge for problem solving and application of solutions. We will help students further develop their skills in synthesis and analysis, critical thinking, and problem solving.

We have deliberately created a set of foundational core courses that will ensure all students build key skills and knowledge to achieve our graduate attributes. These courses are fundamental to ensuring students gain a breadth of knowledge required to fully understand the complexity of sustainability problems and solutions. Students will then delve into courses in their area of focus with further opportunities for application, problem solving, critical thinking, interdisciplinary collaboration, and synthesis. We will sequence and network these courses appropriately to enhance student success. Some courses will include delivery by experienced practitioners. Having access to this professional expertise will help students better understand real-world applications and build their professional networks.

All courses within the M.Ss and Graduate Certificates provide learning opportunities for our graduate students to develop and hone their professional skills, including critical and creative-thinking, interdisciplinary and intercultural collaboration, and professionalism. Our curriculum will also expand their potential for reflection, communication, and leadership. We are developing sets of case studies that will be used across courses that enable students to apply different critical “lenses”, and analytical and design approaches. These approaches will equip our graduates with a solutions-oriented skill set well matched to addressing real-world problems. We aspire to not only bring key solutions-oriented practitioners together to become agents of change-build solutions, but also to ensure they are equipped with the critical interdisciplinary, intersectoral, and intercultural skills required.

These opportunities can be found in:

- **Problem-solving**: specific courses such as 805, 850, 853, 884, 886
- **Synthesis and analysis**: 805, 850, 882
- **Critical thinking**: all of our courses
- **Interdisciplinary collaboration**: everywhere
- **Application**: 805, 834, 841–844, 850, 851, 853, 882, 884


e. Explain the comprehensive breadth of the program.

The primary objective of the certificates is to provide accessible and flexible graduate learning opportunities. The courses from the M.Ss have been bundled into micro-credentials to meet the needs of working professionals and recent graduates wanting to expand their skills in sustainability-related issues. These certificates will not just focus on sustainability concepts, but also offer opportunities for students to learn how to apply knowledge and gain key skills related to governance, economics, law, finance, planning and regulation, negotiations, and Indigenous relations. For more detail, please refer to the M.Ss proposal.

f. Referring to the university “Learning Charter”, explain how the 5 learning goals are addressed, and what degree attributes and skills will be acquired by graduates of the program.

The table below illustrates how required courses for each of the proposed certificates align with the Five Learning Objectives outlined in the University’s Learning Charter. The course numbers are listed for each learning objective and its sub-objectives.
### Learning Charter: Five Learning Objectives

<table>
<thead>
<tr>
<th>Description</th>
<th>Governance Foundations</th>
<th>Sustainability Solutions</th>
<th>Energy Transitions</th>
<th>Community EN Planning</th>
</tr>
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<tbody>
<tr>
<td>Pursuit of Truth and Understanding</td>
<td>834, 884, 886</td>
<td>805, 850, 851, 853</td>
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<tr>
<td>Critical thinking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple ways of knowing and learning</td>
<td>834, 884, 886</td>
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<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Intellectual flexibility</td>
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<td>850, 805, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Pursuit of Knowledges</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth of understanding in subject area</td>
<td>834, 882, 886</td>
<td>805, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Breadth of understanding how subject area intersects with related subject areas</td>
<td>834, 882, 884, 886</td>
<td>805, 850, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Understanding how one's subject area impacts communities</td>
<td>834, 882, 884, 886</td>
<td>805, 851</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Using and applying one's knowledge with respect to all individuals</td>
<td>834, 884, 886</td>
<td>805, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Pursuit of Integrity and Respect</td>
<td>834, 882, 884, 886</td>
<td>805, 805, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Exercising intellectual integrity and ethical behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognizing and thinking through moral and ethical issues</td>
<td>834, 882, 884, 886</td>
<td>851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Recognizing the limits to one's knowledge, skills and understanding and acting in accordance with these limits</td>
<td>834, 884, 885, 886</td>
<td>850, 805, 851</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Appreciate one's own worldview while showing respect for others' worldviews</td>
<td>834, 882, 884, 886</td>
<td>850, 805, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Recognizing and thinking through moral and ethical issues</td>
<td>834, 884, 886</td>
<td>805, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Develop and apply research, inquiry, knowledge creation and translation skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicate clearly, substantively and persuasively in different contexts</td>
<td>834, 884, 886</td>
<td>850, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Locate, understand, evaluate and use information effectively, ethically, legally and with cultural appropriateness</td>
<td>834, 882, 884, 886</td>
<td>805, 850, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Pursuit of Skills and Practices</td>
<td>834, 884, 886</td>
<td>850, 805, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Commit to positive growth and change for oneself and for local, national and global communities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act with confidence and strength of purpose for the good of oneself and different communities</td>
<td>834, 886</td>
<td>810, 850, 851</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Embrace responsibilities to oneself and others in ways that are authentic and meaningful</td>
<td>834, 886</td>
<td>850, 851, 853</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
<tr>
<td>Sharing knowledges and exercise leadership as acts of individual and community responsibility</td>
<td>834, 886</td>
<td>851</td>
<td>840, 841</td>
<td>842, 843, 844</td>
</tr>
</tbody>
</table>

**g. Describe how students can enter this program from other programs (program transferability).**

This suite of certificates is open to graduate students from all disciplines. There are no barriers. In fact, we encourage cohorts of students from varying disciplines. We have had students as diverse as music, history, engineering, and health sciences enter SENS programs. These certificates may serve as stand-alone programs for professionals; however, we also expect that some certificate students may also ladder into the professional M.Ss (or possibly the thesis-based Master of Environmental Sustainability (MES) program) from the certificates.
h. **Specify the criteria that will be used to evaluate whether the program is a success within a timeframe clearly specified by the proponents in the proposal.**

The two key benefits of offering these certificates are: 1) training highly qualified professionals in Saskatchewan, Canada, and internationally and 2) increasing enrolment numbers in the areas of Energy Security and Regenerative Sustainability. Enrolment success can be measured through the number of student applicants, enrolment and completion; program success can be reviewed by the number and quality of external partnerships; and professional success of our graduates can be tracked by employer and alumni surveys.

Additionally, now is the time for investing in sustainability programming. Climate change, water security, energy security, and other sustainability issues are currently of great significance and working professionals need to “upskill” in these areas to meet these challenges. With our community and industry partners, we are well positioned to attract new students once we increase access to and flexibility of our learning opportunities.

We will evaluate the success of the certificates through several metrics:

- **Enrolment:** we project that we will meet our enrolment targets for all certificates within in three years.
- **Demand:** measured by the percentage of high-quality applicants and application numbers.
- **Student satisfaction:** measured by exit surveys and course evaluations.
- **Graduate employment and/or advancement:** determined by alumni surveys.
- **Recognition:** for example, through institutional rankings and ratings.

i. **If applicable, is accreditation or certification available, and if so how will the program meet professional standard criteria. Specify in the budget below any costs that may be associated.**

Not applicable

**Consultation**

a. **Describe how the program relates to existing programs in the department, in the college or school, and with other colleges. Establish where students from other programs may benefit from courses in this program. Does the proposed program lead into other programs offered at the university or elsewhere?**

We are in the midst of revising our flagship professional Master’s program, and we are building the certificates in tandem with the new program. The proposed certificates will be consistent with our professional Master’s programs, requiring no changes or additions to program courses, but will allow part-time students (e.g., working professionals) or students not sure about committing to a 1-or 2-year program to take one or more certificates. Students may take them as stand-alone certificates or use them to ladder into the Master’s program. As we are not proposing any new courses and these certificates are tied directly to the M.S.s, we do not anticipate that they will lead into other programs on or off campus.

b. **List units that were consulted formally, and provide a summary of how consultation was conducted and how concerns that were raised in consultations have been addressed. Attach the relevant communication in an appendix.**

We did not consult other units on the certificates specifically since no new courses are being proposed and no courses are being deleted. However, we consulted with the senior leadership in Engineering, Law, Education, JSGS, Agriculture and Bioresources, and Arts and Science regarding the Master of Sustainability
program plan, structure, and courses and secured their support (See Appendix I for their Letters of Support.). Consultation also occurred with all SENS Faculty for the suite of certificates. See Appendix E for a list of consultation activities.

c. **Proposals that involve courses or other resources from colleges outside the sponsoring unit should include evidence of consultation and approval.** Please give special consideration to pre- and co-requisite requires when including courses from other colleges.

Not applicable

d. **Provide evidence of consultation with the University Library to ensure that appropriate library resources are available.**

We have consulted with our University Librarian (Virginia Wilson) with respect to the M.Ss. See Appendix G for the Budget Consultation Form. As the certificate courses will exist within the M.Ss program, we do not anticipate any other demand on library resources from the addition of the certificates over and above the resources needed for the M.Ss.

e. **List other pertinent consultations and evidence of support, if applicable (e.g., professional associations, accreditation bodies, potential employers, etc.)**

Along with the market survey for the M.Ss, we included survey questions to understand possible demand and appeal for micro-credentials. The people surveyed included recent Undergraduate Certificate in Sustainability graduates, USask alumni, SENS community partners, and adjunct faculty. Our survey included questions about likelihood of seeking education in sustainability, preference for master’s degree and certificates, program delivery options, program appeal, etc. The complete results of the survey are included in Appendix J.

**Budget**

a. **How many instructors will participate in teaching, advising and other activities related to core program delivery (not including distribution/ breadth requirements or electives)? (estimate the percentage time for each person).**

All courses in these four certificates are required courses in the Master of Sustainability (M.Ss) program. Certificate students will enroll in the same courses and sections as their Master’s counterparts. This will boost enrolment within these courses and help ensure that they are fully subscribed, while also providing an economical use of faculty time.

b. **What courses or programs are being eliminated in order to provide time to teach the additional courses?**

No programs will be eliminated. We propose to bundle some of our courses into smaller micro-credentials that will be offered alongside our professional M.Ss as either stand-alone certificates or as a way to ladder into the M.Ss.
c. **How are the teaching assignments of each unit and instructor affected by this proposal?**

Because all the courses will exist as part of the M.Ss program, the addition of these certificates will not affect teaching assignments. No new courses will be added.

d. **Describe budget allocations and how the unit resources are reallocated to accommodate this proposal.**

(Unit administrative support, space issues, class room availability, studio/practice rooms laboratory/clinical or other instructional space requirements).

Because all the courses will exist as part of the M.Ss program, the addition of these certificates will not affect teaching assignments. No new courses will be added. We see the certificates as a way to help increase accessibility and enrolment for what are currently high-quality offerings. We have a large cohort of sustainability-related faculty on campus and need to develop successful and well-subscribed graduate programming in this area.

e. **If this program is to be offered in a distributed context, please describe the costs associated with this approach of delivery and how these costs will be covered.**

As the courses will be developed and delivered as part of the M.Ss program, we do not anticipate any other costs associated with the online development and delivery.

f. **If this is an interdisciplinary program, please indicate whether there is a pool of resources available from other colleges involved in the program.**

Not applicable

g. **What scholarships will students be able to apply for, and how many? What other provisions are being provided for student financial aid and to promote accessibility of the program?**

Students enrolled in certificate programs will not be eligible for financial support.

h. **What is the program tuition? Will the program utilize a special tuition model or standard tuition categories? (The approval authority for tuition is the Board of Governors).**

To accommodate our 3-, 2-, and 1-cu course offerings, we propose a special tuition model that charges student tuition based on a single credit unit. Our tuition projections are based $375 per credit unit:

In this model, tuition costs for each student will be assessed each semester according to how many credit units the student is taking in that semester.

For 2021–2022, we anticipate the tuition for each certificate will be

<table>
<thead>
<tr>
<th>Graduate Certificate</th>
<th>cu</th>
<th>Domestic</th>
<th>International (based on anticipated 1.69 differential)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability Solutions</td>
<td>9 cu</td>
<td>$3375</td>
<td>$5704</td>
</tr>
<tr>
<td>Governance Foundations for Sustainability</td>
<td>7 cu</td>
<td>$2625</td>
<td>$4436</td>
</tr>
<tr>
<td>Energy Transitions</td>
<td>6 cu</td>
<td>$2250</td>
<td>$3803</td>
</tr>
<tr>
<td>Community Energy Planning &amp; Finance</td>
<td>9 cu</td>
<td>$3750</td>
<td>$5704</td>
</tr>
</tbody>
</table>
Additionally, M.Ss students who are not enrolled in a course in a particular term do not need to register for that term. M.Ss students are permitted to be unregistered for a maximum of three consecutive terms. If not registered after the three consecutive terms, students will be automatically withdrawn from the program and will have to re-apply to the program to continue.

i. **What are the estimated costs of program delivery, based on the total time commitment estimates provided? (Use TABBS information, as provided by the College/School financial officer)**

Because all the certificate courses will be existing SENS courses offered through the M.Ss program, we do not anticipate any significant additional costs of program delivery. In fact, packaging many of the M.Ss courses into micro-credentials to increase accessibility and flexibility will ensure that our courses are more fully subscribed. We believe that by combining resources and drawing on increased tuition revenues from 20–40 new students per year, we will have more than sufficient resources to deliver these certificates. However, if we see a significant demand for certificates from students, we may need to hire additional TAships to manage increased class sizes.

j. **What is the enrolment target for the program? How many years to reach this target? What is the minimum enrolment, below which the program ceases to be feasible? What is the maximum enrolment, given the limitations of the resources allocated to the program?**

We expect that, within three years, each certificate will attract an additional 5–10 students per year (approximately 20–40 additional students a year across all certificates). This number would be over and above the anticipated demand for Master of Sustainability (50–55 students/year). Because the courses for the certificates will be part of the M.Ss, there is no minimum enrolment number for the certificates. Students will come from undergraduate programs and from employers in public, private, and civic sectors, with diverse academic and career backgrounds. We anticipate that they will seek out these certificate programs to build and enhance their professional competencies and knowledge in the program areas.

k. **What are the total expected revenues at the target enrolment level, separated into core program delivery and distribution/breadth requirements or electives? What portion of this expected revenue can be thought of as incremental (or new) revenue?**

We anticipate that all revenue generated from the addition of these certificates to be incremental revenue. The table below provides estimates for the next two academic years for our projected minimum number of students (5 per certificate) and our maximum number of students (10 per certificate)—based on domestic tuition.

<table>
<thead>
<tr>
<th>Certificate</th>
<th># of cu</th>
<th># of students</th>
<th>Academic Year (2021–2022)</th>
<th>$375/cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Transitions</td>
<td>6</td>
<td>5</td>
<td>$11,250</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>$22,500</td>
<td></td>
</tr>
<tr>
<td>Community planning</td>
<td>9</td>
<td>5</td>
<td>$16,875</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>$33,750</td>
<td></td>
</tr>
<tr>
<td>Governance</td>
<td>7</td>
<td>5</td>
<td>$13,125</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>$26,250</td>
<td></td>
</tr>
<tr>
<td>Sustainability Solutions</td>
<td>9</td>
<td>5</td>
<td>$16,875</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>$33,750</td>
<td></td>
</tr>
<tr>
<td>Anticipated incremental revenue (5 students/cert.)</td>
<td></td>
<td></td>
<td>$58,125</td>
<td></td>
</tr>
<tr>
<td>Anticipated incremental revenue (10 students/cert.)</td>
<td></td>
<td></td>
<td>$116,250</td>
<td></td>
</tr>
</tbody>
</table>
I. At what enrolment number will this program be independently sustainable? If this enrolment number is higher than the enrolment target, where will the resources come from to sustain the program, and what commitments define the supply of those resources?

It is not the intention for this suite of certificates to be independently sustainable. Rather, these certificates will complement the M.Ss program and offer students options for accessibility and flexibility. They may be taken as stand-alone certificates or used to ladder into the M.Ss. However, their sustainability is connected to the sustainability of the M.Ss itself.

m. Proponents are required to clearly explain the total incremental costs of the program. This is to be expressed as: (i) total cost of resources needed to deliver the program: (ii) existing resources (including in-kind and tagged as such) applied against the total cost: and (iii) a listing of those resource costs that will require additional funding (including new in-kind support).

Because the courses within the proposed certificates are required for the M.Ss, we do not anticipate any addition incremental costs, except the possibility of needing additional TAships to support increased class-size. At most, we anticipate hiring an additional 1 or 2 TAs, equaling between $3720–$7440 in incremental costs where we have large class sizes.

n. List all new funding sources and amounts (including in-kind) and the anticipated contribution of each to offsetting increment program costs. Please identify if any indicated funding is contingent on subsequent approval by a funding authority and/or future conditions. Also indicate under what conditions the program is expected to be cost neutral. The proponents should also indicate any anticipated surpluses/deficits associated with the new program.

No new courses are being added, so we do not anticipate any incremental costs. If we assume our minimum projected enrolment numbers for each certificate (5 people/certificate x 4 certificates = 20 certificate students), this would result in an additional $58,125 of revenue for the 2021–2022 academic year. (See table above.)

School Statement

Please provide here or attach to the online portal, a statement from the College which contains the following:

- Recommendation from the College regarding the program
- Description of the College process used to arrive at that recommendation
- Summary of issues that the College discussed and how they were resolved

See Appendix A for the School Statement.

Related Documentation

At the online portal, attach any related documentation which is relevant to this proposal to the online portal, such as:

- Excerpts from the College Plan and Planning Parameters (in proposal)
- SPR recommendations (none)
• Relevant sections of the College plan (in proposal)
• Accreditation review recommendations (n/a)
• Letters of support (Appendix I)
• Memos of consultation (none)

It is particularly important for Council committees to know if a curriculum changes are being made in response to College Plans and Planning Parameters, review recommendations or accreditation recommendations.

Consultation Forms

At the online portal, attach the following forms, as required

Required for all submissions:
1. Consultation with the Registrar form
2. Complete Catalogue entry, if proposing a new program, or excerpt of existing of existing program with proposed changes marked in red.

Catalogue Entry for Graduate Certificate in Sustainability Solutions

The Graduate Certificate in Sustainability Solutions teaches new strategies to design and implement solutions to sustainability challenges. Courses build competencies towards regenerative design and sustainability alternatives to common sustainability problems by teaching key concepts and practical tools. New professionals and longstanding professionals will become more effective practitioners by learning about sustainability innovations and how to apply them.

Admission Requirements

1. a four-year undergraduate degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study, OR a three-year first cycle undergraduate degree, in an academic discipline relevant to the proposed field of study, from an institution meeting the criteria set forth in the Bologna Declaration, will be acceptable as the equivalent of an undergraduate degree.
2. a minimum cumulative weighted average of at least a 70% (USask grade system equivalent) in the last two years of study (e.g., 60 credit units)
3. Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. A minimum overall TOEFL score of 86, a minimum overall IELTS score of 6.5, or another approved test as outlined by the College of Graduate and Postdoctoral Studies. [Note: These are minimum language proficiency requirements; however, stronger scores are generally expected for successful entry into the program.]
4. Statement of Intent: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to undertake the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program and their chosen field of study. This statement is a key component in adjudicating each applicant’s suitability for the program.
5. Letters of reference: Applicants will need to provide three letters of reference—either academic or professional letters.
Probationary Admission: Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on a probationary status to a program. Applicants in this category may be required to take certain preparatory courses to improve their qualifications. In this case they will be required to pay additional fees. The student’s status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Program Director or Graduate Chair may recommend to CGPS that the student be considered fully-qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions, agreed to by the student and by the College of Graduate and Postdoctoral Studies.

For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies Academic Policies.

Certificate Requirements

The certificate can be taken as a stand-alone program and/or the certificates can be applied to the completion of the Master of Sustainability (M.Ss).

- ENVS 818.1 Introduction to Sustainability (This course is required for all the graduate certificates. Students that have successfully completed this course previously will not be required to repeat it.)

A minimum of 9 credit units including:

- ENVS 850.1 Systems Thinking for Sustainability
- ENVS 851.2 Design Thinking for Sustainability
- ENVS 853.3 Regenerative Sustainability
- ENVS 805.3 Data-driven Solutions for Sustainability

Catalogue Entry for Graduate Certificate in Governance Foundations for Sustainability

The Graduate Certificate in Governance Foundations for Sustainability will help professionals who work with (or within) government agencies to better understand the basic structures of governance, actor groups and policy communities who influence governance, and the present-day imperatives of working with Indigenous peoples. Courses related to reconciliation and negotiation will also provide practical tools to become more effective practitioners when planning and implementing sustainability innovations.

Admission Requirements

1. a four-year undergraduate degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study, OR a three-year first cycle undergraduate degree, in an academic discipline relevant to the proposed field of study, from an institution meeting the criteria set forth in the Bologna Declaration, will be acceptable as the equivalent of an undergraduate degree.

2. a minimum cumulative weighted average of at least a 70% (USask grade system equivalent) in the last two years of study (e.g., 60 credit units)
3. **Language Proficiency Requirements**: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. A minimum overall TOEFL score of 86, a minimum overall IELTS score of 6.5, or another approved test as outlined by the College of Graduate and Postdoctoral Studies. [Note: These are minimum language proficiency requirements; however, stronger scores are generally expected for successful entry into the program.]

4. **Statement of Intent**: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to undertake the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program and their chosen field of study. This statement is a key component in adjudicating each applicant’s suitability for the program.

5. **Letters of reference**: Applicants will need to provide three letters of reference—either academic or professional letters.

**Probationary Admission**: Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on a probationary status to a program. Applicants in this category may be required to take certain preparatory courses to improve their qualifications. In this case they will be required to pay additional fees. The student’s status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Program Director or Graduate Chair may recommend to CGPS that the student be considered fully-qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions, agreed to by the student and by the College of Graduate and Postdoctoral Studies.

For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies Academic Policies.

**Certificate Requirements**

The certificate can be taken as a stand-alone program and/or the certificate can be applied to the completion of the Master of Sustainability (M.Ss).

- **ENVS 818.1 Introduction to Sustainability** (This course is required for all the graduate certificates. Students that have successfully completed this course previously will not be required to repeat it.)

A minimum of 7 credit units including:

- **ENVS 882.2 Foundations of Governance for Sustainability**
- **ENVS 884.1 Fundamentals of Environmental Law and Policy**
- **ENVS 886.2 Building Understanding in the Age of Reconciliation**
- **ENVS 834.2 The Art and Practice of Negotiations**

**Catalogue Entry for Graduate Certificate in Community Energy Planning and Finance**

The Graduate Certificate in Community Energy Planning and Finance provides tools for planning and financing community renewable energy projects.
Admission Requirements

1. a four-year undergraduate degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study, OR a three-year first cycle undergraduate degree, in an academic discipline relevant to the proposed field of study, from an institution meeting the criteria set forth in the Bologna Declaration, will be acceptable as the equivalent of an undergraduate degree.

2. a minimum cumulative weighted average of at least a 70% (USask grade system equivalent) in the last two years of study (e.g., 60 credit units)

3. Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. A minimum overall TOEFL score of 86, a minimum overall IELTS score of 6.5, or another approved test as outlined by the College of Graduate and Postdoctoral Studies. [Note: These are minimum language proficiency requirements; however, stronger scores are generally expected for successful entry into the program.]

4. Statement of Intent: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to undertake the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program and their chosen field of study. This statement is a key component in adjudicating each applicant’s suitability for the program.

5. Letters of reference: Applicants will need to provide three letters of reference—either academic or professional letters.

Probationary Admission: Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on a probationary status to a program. Applicants in this category may be required to take certain preparatory courses to improve their qualifications. In this case they will be required to pay additional fees. The student’s status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Program Director or Graduate Chair may recommend to CGPS that the student be considered fully-qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions, agreed to by the student and by the College of Graduate and Postdoctoral Studies.

For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies Academic Policies.

Certificate Requirements

The certificate can be taken as a stand-alone program and/or the certificate can be applied to the completion of the Master of Sustainability (M.Ss).

- **ENVS 818.1**  *Introduction to Sustainability* (This course is required for all the graduate certificates. Students that have successfully completed this course previously will not be required to repeat it.)

A minimum of 9 credit units including

- **ENVS 842.3**  *Renewable Energy and Community Economic Analysis*
- **ENVS 843.3**  *Energy Project Finance*
- **ENVS 844.3**  *Community Energy Planning*
Catalogue Entry for Graduate Certificate in Energy Transitions

The Graduate Certificate in Energy Transitions is designed for professionals who seek to better understand how to navigate policy processes for transitioning to renewable energy.

Admission Requirements

1. a four-year undergraduate degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study, OR a three-year first cycle undergraduate degree, in an academic discipline relevant to the proposed field of study, from an institution meeting the criteria set forth in the Bologna Declaration, will be acceptable as the equivalent of an undergraduate degree.

2. a minimum cumulative weighted average of at least 70% (USask grade system equivalent) in the last two years of study (e.g., 60 credit units)

3. Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. A minimum overall TOEFL score of 86, a minimum overall IELTS score of 6.5, or another approved test as outlined by the College of Graduate and Postdoctoral Studies. [Note: These are minimum language proficiency requirements; however, stronger scores are generally expected for successful entry into the program.]

4. Statement of Intent: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to undertake the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program and their chosen field of study. This statement is a key component in adjudicating each applicant’s suitability for the program.

5. Letters of reference: Applicants will need to provide three letters of reference—either academic or professional letters.

Probationary Admission: Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on a probationary status to a program. Applicants in this category may be required to take certain preparatory courses to improve their qualifications. In this case they will be required to pay additional fees. The student’s status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Program Director or Graduate Chair may recommend to CGPS that the student be considered fully-qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions, agreed to by the student and by the College of Graduate and Postdoctoral Studies.

For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies Academic Policies.

Certificate Requirements

The certificate can be taken as a stand-alone program and/or the certificate can be applied to the completion of the Master of Sustainability (M.Ss).

- ENVS 818.1 Introduction to Sustainability (This course is required for all the graduate certificates. Students that have successfully completed this course previously will not be required to repeat it.)
A minimum of 6 credit units including:

- ENVS 840.3  Renewable Energy and Energy Transitions
- ENVS 841.3  Renewable Energy Systems

**Required for all new courses:**

- New Course Proposal forms (none)
- Calendar-draft list of new and revised courses (none)

**Required if resources needed:** (none)
- Information Technology Requirements form
- Library Requirements form
- Physical Resource Requirements form
- Budget Consultation form
Appendices

Appendix A: School Statement

MEMORANDUM

To: College of Graduate and Postdoctoral Studies
    University Council

From: Karsten Liber, Executive Director (Interim)

Subject: School Statement: Master of Sustainability (M.Ss.) and Graduate Certificates

Date: June 8, 2020

CC:

Colleagues,

I am pleased to offer this proposal from the School of Environment and Sustainability (SENS). On 5 June 2020, the faculty of SENS unanimously voted in favour of pursuing this revised professional program, the Master of Sustainability (M.Ss.), and the associated suite of Graduate Certificates that can be taken as either stand-alone programs or used to ladder into the M.Ss.

SENS has undertaken several steps to get this point. In 2017, we received a Curriculum Innovation Grant for $20,000 from the Gwenna Moss Centre for Teaching and Learning (GMCTL) to assist us with the revisioning. Beginning in fall, 2017, faculty attended a “Change Academy” sponsored by the GMCTL. At this point, faculty began to discuss how best to strengthen the professional offerings within our present “MSEM” program. Initial discussions were followed by a design workshop (May 2018) involving faculty from across campus. Simultaneously, community and industry consultations with Indigenous partners took place from September 2017 to May 2019, while individual meetings were held with Deans and other stakeholders throughout 2019. To further understand what employers and professionals look for in graduates, we also undertook a market survey of prospective employers and students to identify critical programmatic characteristics that these people are looking for (See Appendix J for the survey results.).

As the program became refined, SENS held multiple workshops and then established small working groups to craft individual syllabi and to review and discuss syllabi as they were drafted. Members of the Academic Programs Committee of SENS also reviewed syllabi and refined the overall program structure. The program structure was submitted to faculty council and approved by formal electronic vote on 27 April 2020.
After several rounds of collaborative work and revision, the proposed syllabi were submitted to University Course Challenge in 2020 (22 in total). The process to arrive at the recommendation for the structure of the program and the individual courses was an iterative one, with extensive faculty involvement prior to a faculty vote. Remarkably, faculty did not restrict their participation to their subject expertise, so that all faculty have become familiar with and responsive to the suite of offerings across the program proposals.

Key issues that were identified and addressed in revisioning our professional Master’s program are listed in the table below.

<table>
<thead>
<tr>
<th>Key issues</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target audience</td>
<td>Target audience for the Energy stream is practitioners and early- to mid-career professionals in northern, Indigenous and remote communities.</td>
</tr>
<tr>
<td></td>
<td>Target audience for the Regenerative Sustainability stream is: 1) Mid-career professionals and 2) More recent graduates with some work or life experience that catalyzes their interest.</td>
</tr>
<tr>
<td>Mode of delivery</td>
<td>Both streams will be delivered online in a multi-modal format (synchronous, asynchronous, and in-person when it becomes available).</td>
</tr>
<tr>
<td>Accessibility and flexibility</td>
<td>Courses have also been bundled into more accessible certificate program options that will allow active professionals to broaden and deepen their expertise without the financial or time commitment of pursuing a full post-graduate degree.</td>
</tr>
<tr>
<td>Professional skills v. academic offerings</td>
<td>Courses are oriented to supporting professional skill development to address common sustainability issues.</td>
</tr>
<tr>
<td>Maintaining a SENS brand</td>
<td>All students in the proposed programs (M.Ss. and graduate certificates) must take ENVS 818.1, <em>Introduction to Sustainability</em>.</td>
</tr>
</tbody>
</table>

We are very excited about these new directions and believe that these programmatic changes and additions are critical for moving SENS and the University of Saskatchewan forward to become the “University the World Needs.”

Thank you for reviewing this proposal. Please let me know if you require any additional information.

Sincerely,

KARSTEN LIBER, PH.D.
Executive Director (Interim) and Distinguished Professor
School of Environment and Sustainability
karsten.liber@usask.ca

KEL/Jlm
Appendix B: Visual Map of M.Ss and Graduate Certificates

- Graduation Certificate in Energy Transitions
- Energy Security
- Regenerative Sustainability
- Community Energy Planning and Finance
- Graduate Certificate in Governance Foundations for Sustainability
- Master of Sustainability
- Foundational Core
- Graduate Certificate in Sustainability Solutions
<table>
<thead>
<tr>
<th>Institution</th>
<th>Program</th>
<th>Description (+ credit units and courses)</th>
<th>Delivery</th>
<th>Tuition (domestic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brock University</td>
<td>Master of Sustainability</td>
<td>- Two streams: co-op and thesis</td>
<td>onsite</td>
<td>~$10,328/year</td>
</tr>
<tr>
<td>Concordia University</td>
<td>Master of Environment: Environmental Assessment</td>
<td>- Comprehensive background in scoping, data collection and analysis, and Geographical Information Systems (GIS), and policy development</td>
<td>onsite</td>
<td>~$11,908</td>
</tr>
<tr>
<td>Royal Roads University</td>
<td>MA/Sc in Environment and Management</td>
<td>- Designed for professionals who are deeply interested and involved in practical environmental issues</td>
<td>Blended (onsite &amp; online)</td>
<td>~$23,860</td>
</tr>
<tr>
<td>Trent University</td>
<td>Master of Bioenvironmental Monitoring &amp; Assessment</td>
<td>- 1-year course-based program with a placement &amp; capstone</td>
<td>online</td>
<td>$1170/course + other fees $9360 for courses</td>
</tr>
<tr>
<td>Dalhousie University</td>
<td>Master of Resource and Environmental Management</td>
<td>- Designed to provide skills and knowledge needed to pursue a career in natural resource and environmental management</td>
<td>onsite</td>
<td>~$10,328/year</td>
</tr>
<tr>
<td>Queen's University</td>
<td>Master in Environmental Studies</td>
<td>- 3-5 semesters + library research project</td>
<td>onsite</td>
<td>$5,772.99/term + $3,727.50/term + $1170/course + other fees</td>
</tr>
</tbody>
</table>

**Language Proficiency:**
- TOEFL minimum 88 & IELTS minimum 6.5
- IELTS minimum 6.5
- TOEFL minimum 90 & IELTS minimum 6.5
- TOEFL minimum 100 & IELTS minimum 7.5

**Tuition:**
- $2725/term + program fees (4 terms) = $10,900
- $2977/term + program fees (4 terms) = $11,908
- $25,810
- $23,860
- $1170/course + other fees $9360 for courses
- ~$10,328/year
- ~$10,328/year
- $5,772.99/term + $3,727.50/term + $1170/course + other fees

**Notes:**
- U15 comparators are shaded in green.

Appendix C: Professional and course-based Master’s Comparator Programs
<table>
<thead>
<tr>
<th>University</th>
<th>Program Name</th>
<th>Type</th>
<th>Duration</th>
<th>Tuition Costs</th>
<th>Language Requirement</th>
<th>Sustainability Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simon Fraser University</td>
<td>Master of Resource and Environmental</td>
<td>Part-time option (11 courses + research project == 57 units)</td>
<td>2-year program (6 terms)</td>
<td>$1871.33/term</td>
<td>TOEFL minimum 90 &amp; IELTS minimum 7.0</td>
<td>Designed for professional development and sustainability focus</td>
</tr>
<tr>
<td>University of New Brunswick</td>
<td>Master of Environmental Management</td>
<td>16-month program (4 semesters)</td>
<td>Professional program that provides practical skills and experience needed to work as an environmental or natural resource manager</td>
<td>$857/course + other fees == $9427</td>
<td>TOEFL minimum not listed &amp; IELTS minimum 7.0</td>
<td>Sustainable and Environmentally inspired</td>
</tr>
<tr>
<td>University of Toronto</td>
<td>Master of Environmental Science</td>
<td>12-month course-based professional program—development of well-trained professionals</td>
<td>3 terms (1-year program)</td>
<td>$12,310 for program</td>
<td>TOEFL minimum 100 &amp; IELTS minimum 7.0</td>
<td>Research or training options that provide the skills they need to create effective policy solutions to today’s complex environmental sustainability problems</td>
</tr>
<tr>
<td>University of Ottawa</td>
<td>MSc in Environmental Sustainability</td>
<td>Capstone (1 year) option</td>
<td>9 courses + research paper (31.5 cu)</td>
<td>$2,465.71/term + other fees == $7,397.13 (1 year)</td>
<td>TOEFL minimum 88 &amp; IELTS minimum 6.5</td>
<td>Development of well-trained professionals in environmental science</td>
</tr>
<tr>
<td>Western University</td>
<td>Master of Environment and Sustainability</td>
<td>3 terms (1-year program)</td>
<td>5 required courses + project</td>
<td>$16,246 (total)</td>
<td>TOEFL minimum 94 &amp; IELTS minimum 7.0</td>
<td>Designed for professional development and sustainability focus</td>
</tr>
<tr>
<td>University of Calgary</td>
<td>MSc in Sustainable Energy Development</td>
<td>Interdisciplinary</td>
<td>13 courses + research project</td>
<td>$764.82/3 cu course == $12237.12</td>
<td>TOEFL minimum 86 &amp; IELTS minimum 6.5</td>
<td>Designed for professionals who want to help shape the future of sustainable energy</td>
</tr>
<tr>
<td>Johns Hopkins University</td>
<td>MA in Sustainable Energy</td>
<td>Online option</td>
<td>9 courses + courses focused on renewable energy and sustainability in science, engineering, business, and related fields</td>
<td>$37,482/3 cu course == $118,122</td>
<td>TOEFL minimum 90 &amp; IELTS minimum 7.0</td>
<td>Designed for recent graduates and for individuals with experience in renewable energy</td>
</tr>
<tr>
<td>Oregon State University</td>
<td>Master of Science and Technology</td>
<td>Online program</td>
<td>9 courses + research and project</td>
<td>$17,280/3 cu course == $51,840 (1-year program)</td>
<td>TOEFL minimum 90 &amp; IELTS minimum 7.0</td>
<td>Designed for recent graduates and for individuals with experience in renewable energy</td>
</tr>
</tbody>
</table>
# Appendix D: Graduate Certificate Comparator Programs

<table>
<thead>
<tr>
<th>Institution</th>
<th>Program</th>
<th>Description (+ credit units and courses)</th>
<th>delivery</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ryerson University</td>
<td>Sustainability Management and Enterprise Process Excellence</td>
<td>- Maximize impact by deploying and executing sustainability principles and using Lean Six Sigma continuous improvement tools and techniques - 6 courses (total 18 cu)</td>
<td>Blended (online + onsite)</td>
<td>$917.90/course = $5507.4</td>
</tr>
<tr>
<td>Royal Roads University</td>
<td>Graduate Certificate in Science of Policy of Climate Change</td>
<td>- the critical knowledge, interdisciplinary education, and practical skills to identify climate challenges and solutions and act on them - 1-year program: 3 courses (total 9 cu) - Partnership with ECO Canada</td>
<td>online</td>
<td>$6530</td>
</tr>
<tr>
<td></td>
<td>Graduate Certificate in Sustainable Community Development</td>
<td>- Designed for working professionals—builds leadership, knowledge, and practical experience - 6-month program</td>
<td>blended</td>
<td>$6530</td>
</tr>
<tr>
<td>Kwantlen Polytechnic University</td>
<td>Graduate Certificate in Sustainable Food Systems and Security</td>
<td>- Certificate for practicing professionals - 1-year program - 18 credit units - Connected with Royal Roads University’s Master of Arts—Integrated Studies</td>
<td>online</td>
<td>not listed</td>
</tr>
<tr>
<td>Harvard</td>
<td>Sustainability Certificate</td>
<td>- 5 courses (typically takes 2 years to complete—max. 3 years) - Certificates can be used as credit toward a graduate degree - Professional graduate certificate to deepen knowledge and expertise in sustainability</td>
<td>onsite &amp; online courses</td>
<td>$14,200 (USD)</td>
</tr>
<tr>
<td>Columbia University</td>
<td>Certificate in Sustainability Analytics</td>
<td>- 4 courses (12 cu) - trains professionals to develop skills in analytic methods and quantitative analysis that enable practitioners to measure, report, and communicate the sustainability of organizations, products, and services</td>
<td>online</td>
<td>$2,182/1 cu = $26,172 (USD)</td>
</tr>
</tbody>
</table>
Appendix E: Consultations and Program Planning Activities

May 2017 Workshop

The Following Attendees RSVP’d and participated for all or part of the day to develop the initial suite of programs. Some have been consulted with since about the proposed new format (indicated with an asterisk).

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike</td>
<td>Nickerson</td>
<td>AgBio</td>
</tr>
<tr>
<td>Christopher</td>
<td>Eskiew</td>
<td>AgBio</td>
</tr>
<tr>
<td>Supratim</td>
<td>Ghosh</td>
<td>AgBio</td>
</tr>
<tr>
<td>John</td>
<td>Moffatt</td>
<td>Engineering</td>
</tr>
<tr>
<td>Jafar</td>
<td>Soltan</td>
<td>Engineering</td>
</tr>
<tr>
<td>Noreen</td>
<td>Mahoney</td>
<td>ESB</td>
</tr>
<tr>
<td>Vicky</td>
<td>Parohl</td>
<td>ESB</td>
</tr>
<tr>
<td>Susan</td>
<td>Bens</td>
<td>GMCTL</td>
</tr>
<tr>
<td>Sheryl</td>
<td>Mills</td>
<td>GMCTL</td>
</tr>
<tr>
<td>Haizhen</td>
<td>Mou</td>
<td>JSGS</td>
</tr>
<tr>
<td>*Murray</td>
<td>Fulton</td>
<td>JSGS</td>
</tr>
<tr>
<td>*Jason</td>
<td>MacLean</td>
<td>Law</td>
</tr>
<tr>
<td>*Doug</td>
<td>Clark</td>
<td>SENS</td>
</tr>
<tr>
<td>David</td>
<td>Schneider</td>
<td>SENS</td>
</tr>
<tr>
<td>Phil</td>
<td>Loring</td>
<td>SENS</td>
</tr>
<tr>
<td>*Colin</td>
<td>Whitfield</td>
<td>SENS</td>
</tr>
<tr>
<td>Yanping</td>
<td>Li</td>
<td>SENS</td>
</tr>
<tr>
<td>*Maureen</td>
<td>Reed</td>
<td>SENS</td>
</tr>
<tr>
<td>Vladimir</td>
<td>Kricsfalus</td>
<td>SENS</td>
</tr>
<tr>
<td>*Karl</td>
<td>Lindenschmidt</td>
<td>SENS</td>
</tr>
<tr>
<td>*MJ</td>
<td>Barrett</td>
<td>SENS</td>
</tr>
<tr>
<td>Anthony</td>
<td>Johnston</td>
<td>SENS Indg Mentor</td>
</tr>
<tr>
<td>Michelle</td>
<td>Watson</td>
<td>w Anthony</td>
</tr>
<tr>
<td>Andrea</td>
<td>Eccleston</td>
<td>SENS</td>
</tr>
<tr>
<td>*Tim</td>
<td>Jardine</td>
<td>SENS</td>
</tr>
<tr>
<td>Trever</td>
<td>Crowe</td>
<td>CGPS</td>
</tr>
<tr>
<td>*Paul</td>
<td>Jones</td>
<td>SENS</td>
</tr>
<tr>
<td>*Graham</td>
<td>Strickert</td>
<td>SENS</td>
</tr>
<tr>
<td>Nancy</td>
<td>Turner</td>
<td>GMCTL</td>
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<tr>
<td>*Greg</td>
<td>Poelzer</td>
<td>SENS</td>
</tr>
<tr>
<td>Stuart</td>
<td>Smyth</td>
<td>AgBio</td>
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<tr>
<td>Takuji</td>
<td>Tanaka</td>
<td>AgBio</td>
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<tr>
<td>Cherie</td>
<td>Westbrook</td>
<td>Arts &amp; Science</td>
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<tr>
<td>*Kelly</td>
<td>Clement</td>
<td>CGPS</td>
</tr>
<tr>
<td>*Karsten</td>
<td>Liber</td>
<td>Toxicology Centre</td>
</tr>
<tr>
<td>*Jim</td>
<td>Robson</td>
<td>SENS</td>
</tr>
</tbody>
</table>
October 2017 Change Academy

U of S Change Academy
School of Environment and Sustainability (SENS)
Project Summary
October 2017

Project Title: SENS Curriculum Redesign of Professional Degree Programs

Team Members:
Douglas Clark – Centennial Chair and Associate Professor, SENS and Team Lead, SENS Change Academy Team
Helen Baulch – Centennial Chair and Assistant Professor, SENS
Felicitas Egunyu – Research Associate, SENS
Greg Poelzer – Professor, SENS
Vladimir Kricsfalussy – Associate Professor AP, MSEM Program Coordinator
Brady Highway – Current MES Student
Andrea Eccleston – Graduate Programs Coordinator
Maureen Reed - Professor and Assistant Director, Academic

SENS seeks to redesign the curriculum for our professional master’s degree programs. There are three main reasons we want to make this change, all of which fundamentally relate to challenges we have faced so far meeting student satisfaction and recruitment goals for our professional programs (including overall numbers, applicant quality, proportion of domestic students). These reasons are:

1. SENS faculty has concluded that the MSEM in particular doesn’t adequately focus on management, and we want to increase that focus.
2. We want to increase enrolment of mid-career professionals.
3. We want to meet our enrolment target for our professional programs because that will increasingly be an important piece of SENS’ overall financial health.

In short, the two key areas we would like to focus on in the curriculum redesign are, first, what are the core competencies we would like our students to develop while in program and how do we achieve that? Second, how can we design the programs to be more flexibly-delivered in a flipped and blended format to increase the programs’ reach and marketability?

Major outcomes and design decisions from the Change Academy were that our professional master’s need to be offered in a flexibly-delivered, flipped and blended format, and that the professionally-oriented graduate degree programs will be designed to:

1. Prepare students to be effective environmental managers in the public, private, and not-for-profit sectors
2. Attract top-quality students from Canada and internationally who seek to advance careers in environment and sustainability practice, as distinct from academic careers
3. Attract, as students, mid-career environmental and sustainability professionals from the public, private, and not-for-profit sectors
4. Engage all of SENS’s faculty because it enhances their own scholarship
5. Be the equal of our thesis-based programs in quality, drawing power, and renown
6. Contribute to SENS’s brand recognition and competitiveness across Canada and globally
7. Produce graduates who lead and excel in their chosen careers.
<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>USask Community and Industry Engagement History for Energy Security</td>
<td>May 2019</td>
</tr>
<tr>
<td>Hosted by Office in Tribal Council, USask and The College of Arts &amp; Sciences; Ten Gwich'in Youth (age 15-27) from NWT traveled to USask for 5 days to experience life on University Campus.</td>
<td></td>
</tr>
<tr>
<td>Arctic Investment Corporation (Yellowknife), Natural Forces (Saskatoon)</td>
<td>March 2019</td>
</tr>
<tr>
<td>Artic Energy Alliance (Yellowknife), Northwest Territories Power Corporation (Yellowknife)</td>
<td></td>
</tr>
<tr>
<td>Canadian Museum of Human Rights (Winnipeg)</td>
<td>February 2019</td>
</tr>
<tr>
<td>North West Company (Winnipeg)</td>
<td>February 2019</td>
</tr>
<tr>
<td>Saskatchewan Association of Rural Municipalities (Regina)</td>
<td>February 2019</td>
</tr>
<tr>
<td>Saskatchewan Power Authority (Regina)</td>
<td>December 2018</td>
</tr>
<tr>
<td>Northwest Company (Winnipeg)</td>
<td>December 2018</td>
</tr>
<tr>
<td>First Nations Power Authority (Regina)</td>
<td>November 2018</td>
</tr>
<tr>
<td>Saskatchewan Power Authority (Regina)</td>
<td>August 2018</td>
</tr>
<tr>
<td>Saskatchewan Polychron</td>
<td>May 2018</td>
</tr>
<tr>
<td>First Nations Power Authority (Saskatchewan Polychron)</td>
<td></td>
</tr>
<tr>
<td>28 people in attendance: Industry (14), Government (7), Researchers (6)</td>
<td>September 2017</td>
</tr>
<tr>
<td>USask Community (27), People in attendance: Industry (32), Government (20), Indigenous (12), Researchers (18)</td>
<td>September 2017</td>
</tr>
<tr>
<td>Renewable Energy Symposium: Yellowknife</td>
<td>September 2017</td>
</tr>
<tr>
<td>Renewable Energy Symposium: Saskatoon</td>
<td>September 2017</td>
</tr>
</tbody>
</table>
### Phase 2 NRCan Proposal Engagement: Energy Security

<table>
<thead>
<tr>
<th>Institution</th>
<th>Meeting Date</th>
<th>Title</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yukon College</td>
<td>June 19, 2019</td>
<td>Director, Catalyst 20/20 Program</td>
<td>Cheri Spooner</td>
</tr>
<tr>
<td>USask</td>
<td>July 26, 2019</td>
<td>VICE-Dean of Engineering and Reconciliation First Nations Initiatives &amp; Associate Vice-President Indigenous Initiatives</td>
<td>Noel Voykin</td>
</tr>
<tr>
<td>SaskPower</td>
<td>July 22, 2019</td>
<td>VP, Asset Management</td>
<td>Tim Eccle</td>
</tr>
<tr>
<td>USask</td>
<td>July 24, 2019</td>
<td>Dean, Deputy Vice Chief</td>
<td>Jordan Peterson</td>
</tr>
<tr>
<td>Arctic Energy Alliance</td>
<td>July 23, 2019</td>
<td>President</td>
<td>Mark Heverk</td>
</tr>
<tr>
<td>The Rockies Institute</td>
<td>July 23, 2019</td>
<td>President</td>
<td>Laura Lyons</td>
</tr>
<tr>
<td>Indigenous Clean Energy Network</td>
<td>July 19, 2019</td>
<td>Director, Catalyst 20/20 Program</td>
<td>Eryn Stewart</td>
</tr>
<tr>
<td>Indigenous Clean Energy Network</td>
<td>July 19, 2019</td>
<td>Director, Catalyst 20/20 Program</td>
<td>Eryn Stewart</td>
</tr>
<tr>
<td>First Nations Power Authority</td>
<td>July 16, 2019</td>
<td>CEO</td>
<td>Guy Lonardson</td>
</tr>
<tr>
<td>USask</td>
<td>July 11, 2019</td>
<td>Director Distance Learning Education</td>
<td>Terry Fossard &amp; Carey Simmons</td>
</tr>
<tr>
<td>USask</td>
<td>July 10, 2019</td>
<td>Dean of Art &amp; Science</td>
<td>Jack Gray</td>
</tr>
<tr>
<td>USask</td>
<td>July 8, 2019</td>
<td>Dean of Law</td>
<td>Martin Philpsson</td>
</tr>
<tr>
<td>USask</td>
<td>July 4, 2019</td>
<td>Dean College of Engineering &amp; Technology</td>
<td>Suzanne Reesaa</td>
</tr>
<tr>
<td>USask</td>
<td>June 21, 2019</td>
<td>Director Johnson-Shooping Graduate School</td>
<td>Murray Fulton</td>
</tr>
<tr>
<td>USask</td>
<td>June 18, 2019</td>
<td>Dean College of Agriculture &amp; Food Science</td>
<td>Mary Burk</td>
</tr>
<tr>
<td>Date</td>
<td>Attendees</td>
<td>Discussion/Decisions/Outcomes</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>1 November 2019</td>
<td>Greg Poelzer, Doug Clark, Helen Baulch, Graham Strickert, Markus Brinkmann</td>
<td>Breakout sessions to discuss critical aspects of delivery of program (face-to-face vs. online vs. blended).</td>
<td></td>
</tr>
<tr>
<td>10 February 2020</td>
<td>Maureen Reid, Graham Strickert, Markus Brinkmann, Colin Whitfield, Andrew Jones, Paul Jones, Colin Langton, Karen Aunger, Jill Bartlett, Hugo Bichard, Graham Strickert, Jim Hobson, Markus Brinkmann, Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>Revised Name of new program as Master of Sustainability.</td>
<td></td>
</tr>
<tr>
<td>20 December 2019</td>
<td>Greg Poelzer, Jim Hobson, Maureen Reid, Graham Strickert, Markus Brinkmann,</td>
<td>The Field Skills course will become an elective (with an enrollment cap).</td>
<td></td>
</tr>
<tr>
<td>26 November 2020</td>
<td>Colin Whitfield, Maureen Reid, Graham Strickert, Markus Brinkmann, Andrew Jones, Paul Jones, Colin Langton, Karen Aunger, Jill Bartlett, Hugo Bichard, Graham Strickert, Jim Hobson, Markus Brinkmann, Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>Compile all learning objectives from SENS courses and review Garrett’s curriculum map.</td>
<td></td>
</tr>
<tr>
<td>1 November 2019</td>
<td>Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>Tentative Name of new program is Master of Sustainability.</td>
<td></td>
</tr>
<tr>
<td>20 December 2019</td>
<td>Greg Poelzer, Doug Clark, Jim Hobson, Maureen Reid, Markus Brinkmann,</td>
<td>Project Management will be removed from the Common Core and “economics into the core.”</td>
<td></td>
</tr>
<tr>
<td>10 February 2020</td>
<td>Maureen Reid, Graham Strickert, Markus Brinkmann, Colin Whitfield, Andrew Jones, Paul Jones, Colin Langton, Karen Aunger, Jill Bartlett, Hugo Bichard, Graham Strickert, Jim Hobson, Markus Brinkmann, Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>The Common Core will be 9 credit units.</td>
<td></td>
</tr>
<tr>
<td>26 November 2020</td>
<td>Colin Whitfield, Maureen Reid, Graham Strickert, Markus Brinkmann, Andrew Jones, Paul Jones, Colin Langton, Karen Aunger, Jill Bartlett, Hugo Bichard, Graham Strickert, Jim Hobson, Markus Brinkmann, Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>The “classic” MSEM will move away from the terminology of “management” and consider this field of study to be one focused on “sustainability” or “regenerative sustainability.”</td>
<td></td>
</tr>
<tr>
<td>1 November 2019</td>
<td>Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>This new field of study will have 9 cu of required courses, 6 cu of elective courses, and a 6-6 cu project/placement.</td>
<td></td>
</tr>
<tr>
<td>20 December 2019</td>
<td>Greg Poelzer, Doug Clark, Helen Baulch, Jim Robson, Maureen Reid, Graham Strickert</td>
<td>Systems Thinking will be the primer in the core with “teaser” for design thinking: “building blocks.”</td>
<td></td>
</tr>
<tr>
<td>26 November 2020</td>
<td>Colin Whitfield, Maureen Reid, Graham Strickert, Markus Brinkmann, Andrew Jones, Paul Jones, Colin Langton, Karen Aunger, Jill Bartlett, Hugo Bichard, Graham Strickert, Jim Hobson, Markus Brinkmann, Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>The Common Core will be 9 credit units.</td>
<td></td>
</tr>
<tr>
<td>1 November 2019</td>
<td>Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>Commissioners will be designed to accommodate professionals (people with jobs and/or families)</td>
<td></td>
</tr>
<tr>
<td>20 December 2019</td>
<td>Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>Full-time on campus courses are also considered vital to the success of this program.</td>
<td></td>
</tr>
<tr>
<td>26 November 2020</td>
<td>Colin Whitfield, Maureen Reid, Graham Strickert, Markus Brinkmann, Andrew Jones, Paul Jones, Colin Langton, Karen Aunger, Jill Bartlett, Hugo Bichard, Graham Strickert, Jim Hobson, Markus Brinkmann, Greg Poelzer, Doug Clark, Helen Baulch, Jim Hobson, Markus Brinkmann,</td>
<td>Program Planning Meetings with SENS Faculty</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
<td>Faculty Council Vote and Approval of Program Proposal for Submission to CGPS and University Council</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>5 June 2020</td>
<td>The program needs a course (or content) on environmental psychology—&quot;behavioural change and collective action&quot;? Still need to decide on a name/title for the other field of study: Regenerative Sustainability? Sustainability Transformations? Will then need an operational definition for second field of study—e.g., Regenerative Sustainability.</td>
<td>Faculty Council vote and approval of program proposal for submission to CGPS and University Council</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Maureen Reed, Andrea Ireson, Christy Morressy, Colin Kuley, Irene Schiavoni, Jim Jardine, Tom Bremner, Paul Jueun, Jim Knoe, Mal Bartos, PUshpa Dhillon, Saman Bazian, Yehia El-Rabdani, Liz Kuley, Megan Evans.</td>
<td>Faculty Council vote and approval of program proposal for submission to CGPS and University Council</td>
<td></td>
</tr>
<tr>
<td>6 June 2020</td>
<td>Discussed and decided on outstanding programmatic structure questions. Faculty provided feedback on first drafts of all new syllabi for the revised program.</td>
<td>Faculty Council vote and approval of program proposal for submission to CGPS and University Council</td>
<td></td>
</tr>
<tr>
<td>5 June 2020</td>
<td>Proposed M.S.s v8.0 for submission to Faculty Council for vote; Proposed Admission requirements, including mid-career option and increased language proficiency IELTS and TOEFL scores.</td>
<td>Faculty Council vote and approval of program proposal for submission to CGPS and University Council</td>
<td></td>
</tr>
<tr>
<td>26 May 2020</td>
<td>Proposed structure of 990 SENS Research and Exploration: Field of Study For both fields of study.</td>
<td>Faculty Council vote and approval of program proposal for submission to CGPS and University Council</td>
<td></td>
</tr>
<tr>
<td>26 May 2020</td>
<td>Proposed Study Development to Faculty Groups (15 syllabus) Sustaining and Water Security (facilitated by Liz Kelly and Megan Evans). Workshop Mission Statements and Student Personas, resulting in draft mission.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 May 2020</td>
<td>Revised Syllabus Development to Faculty Groups (15 syllabus) Sustaining and Water Security (facilitated by Lizo Kelly and Megan Evans). Workshop Mission Statements and Student Personas, resulting in draft mission.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 March 2020</td>
<td>Program Planning Meeting.</td>
<td>Faculty Council vote and approval of program proposal for submission to CGPS and University Council</td>
<td></td>
</tr>
<tr>
<td>2 March 2020</td>
<td>Revised Syllabus Development to Faculty Groups (15 syllabus) Sustaining and Water Security (facilitated by Lizo Kelly and Megan Evans). Workshop Mission Statements and Student Personas, resulting in draft mission.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 March 2020</td>
<td>Revised Syllabus Development to Faculty Groups (15 syllabus) Sustaining and Water Security (facilitated by Lizo Kelly and Megan Evans). Workshop Mission Statements and Student Personas, resulting in draft mission.</td>
<td>Faculty Council vote and approval of program proposal for submission to CGPS and University Council</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F: Summary or TABBS Implications for M.Ss over first 5 years of the program

University of Saskatchewan  
School of Environment & Sustainability  
Masters of Sustainability degree program (revised MSEM)  
TABBS Implications as of April 23, 2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Grant</th>
<th>Indirect costs</th>
<th>NET TABBS IMPACT, excluding tuition</th>
<th>Incremental Tuition year over year</th>
<th>NET TABBS IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student headcount - Energy</td>
<td>Student headcount - Regen</td>
<td>New faculty - assume both are Active researchers</td>
<td>Qualifications awarded - M.Ss</td>
<td>Operating Grant</td>
</tr>
<tr>
<td>Yr. 1</td>
<td>Yr. 2</td>
<td>Yr. 3</td>
<td>Yr. 4</td>
<td>Yr. 5</td>
<td>Yr. 1</td>
</tr>
<tr>
<td>80,958</td>
<td>101,171</td>
<td>45,559</td>
<td>25,317</td>
<td>0</td>
<td>(48,302)</td>
</tr>
<tr>
<td>0</td>
<td>92,894</td>
<td>13,283</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>101,728</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>(75,061)</td>
</tr>
<tr>
<td>(58,113)</td>
<td>144,119</td>
<td>30,219</td>
<td>23,245</td>
<td>0</td>
<td>(123,363)</td>
</tr>
<tr>
<td>124,574</td>
<td>338,184</td>
<td>89,061</td>
<td>48,562</td>
<td>0</td>
<td>1,211</td>
</tr>
<tr>
<td>Incremental Tuition year over year (see below)</td>
<td>(75,033)</td>
<td>334,950</td>
<td>105,490</td>
<td>54,762</td>
<td>14,706</td>
</tr>
<tr>
<td>NET TABBS IMPACT</td>
<td>(73,823)</td>
<td>559,959</td>
<td>159,806</td>
<td>88,213</td>
<td>14,706</td>
</tr>
</tbody>
</table>

Impacts resource allocation...

<table>
<thead>
<tr>
<th>Year</th>
<th>Incremental Tuition year over year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2021/22</td>
</tr>
<tr>
<td>tuition</td>
<td>tuition</td>
</tr>
<tr>
<td>(121,142)</td>
<td>(282,110)</td>
</tr>
<tr>
<td>Regenerative Sustainability</td>
<td>Regenerative Sustainability</td>
</tr>
<tr>
<td>327,625</td>
<td>519,940</td>
</tr>
<tr>
<td>448,767</td>
<td>802,050</td>
</tr>
<tr>
<td>MSEM - 30 students</td>
<td>MSEM - 30 students</td>
</tr>
<tr>
<td>1.69</td>
<td>1.69</td>
</tr>
<tr>
<td>375 x 30 x 30 credits</td>
<td>375 x 30 x 30 credits</td>
</tr>
<tr>
<td>0.80%</td>
<td>0.80%</td>
</tr>
<tr>
<td>456,300</td>
<td>472,271</td>
</tr>
<tr>
<td>20.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>67,500</td>
<td>69,863</td>
</tr>
<tr>
<td>523,800</td>
<td>542,133</td>
</tr>
<tr>
<td>Tuition increase</td>
<td>Tuition increase</td>
</tr>
<tr>
<td>(75,033)</td>
<td>(75,033)</td>
</tr>
<tr>
<td>259,917</td>
<td>365,408</td>
</tr>
<tr>
<td>Incremental change year over year</td>
<td>Incremental change year over year</td>
</tr>
<tr>
<td>(75,033)</td>
<td>(75,033)</td>
</tr>
<tr>
<td>384,950</td>
<td>105,490</td>
</tr>
</tbody>
</table>
Appendix G: Consultation Form from University Library

LIBRARY REQUIREMENTS FOR NEW PROGRAMS AND MAJOR REVISIONS

This form is to be completed by the faculty member responsible for the program proposal in consultation with the Liaison Librarian from the University Library, University of Saskatchewan. Contact the appropriate Liaison Librarian for assistance.

Attach the completed form to the program proposal prior to submission to the Academic Programs Committee. Additional comments may also be attached if required.

1. Proposal Identification

Full name of program: Master of Sustainability
Short form (degree abbreviation): M.Ss

Sponsoring Department/College: College of Graduate and Postdoctoral Studies

Degree Level: Graduate:

2. Library Resources

2.1 Resources are/will be located mainly in the Library

Because this new program is very interdisciplinary, physical library resources can be found across the University Library’s 7 branches. The Library has a large collection of electronic resources including journals, databases, ebooks, etc. that will particularly suit the online nature of this program. These resources are accessible to the USask community online from anywhere there is internet access.

2.2 Comment on the adequacy of the current level of Library acquisitions in support of this discipline.

The Library supports current SENS offerings and believes that collections can support the M.Ss. For emerging subject areas such as regenerative sustainability, the liaison librarian will focus on allocating monograph funding to purchase relevant books (ideally ebooks) as they are published to support this area. Faculty and graduate students are encouraged to submit requests for monographs, which is another way to enhance the collection for this program. As scholarly journals publish articles on this topic, they will be indexed in the databases that we have that support SENS (i.e. general databases such as Web of Science Core Collection and Scopus, and more specific databases such as BioOne Complete).

2.3 Specify serial titles that are core to this program.
Given the interdisciplinarity of this program, it is unlikely that there are “core serial titles” that will expressively cover the entirety of the program. Titles that relate to subjects/topics from within the program which are accessible from the Library electronically are *Journal of Cleaner Production*, *Sustainability*, *Annual Review of Environment and Resources*, *Journal of Energy*, and *Natural Resources & Environmental Law, Society and Natural Resources*, for example.

2.4 What access is required to resources held elsewhere? (Identify additional costs for access—e.g. networking of databases, consortial access to databases, document delivery options).

All University Library resources are provided through the University Library. There are no additional costs to access what we offer through the Library. If scholarly items are not available in/through our Library, the interlibrary loan service will seek and find the items from other academic libraries for faculty, staff, and students at no cost to them.

2.5 Will any resource re-allocation within the broad discipline be necessary to support this new program?

Funds already in place will continue to be used to support the program from a variety of areas in the Library.

2.6 What are the human resource requirements to support this program? (Does the Library have the subject expertise amongst its staff? Are more staff required to develop collections, provide user education, develop and promote web access to resources, etc.).

SENS has a liaison librarian who will support the program, faculty, students, and staff.

3. Additional Library Resources Required

3.1 What new subject areas of acquisition are needed to meet program requirements?

None

3.2 What new electronic resources/databases are required?

None

3.3 Are there new/additional library technology requirements necessary to support this program?

No.

3.4 Are there distance education service needs and costs?

Not pertaining to the library.

3.5 Provide an estimated budget required for library resources to support this program annually.

N/A
4. Statement of Assessment of Library requirements (Indicate Library capacity to support new program)

The Library has robust collections in many academic disciplines. Given the interdisciplinary nature of SENS and of the proposed new program, Library collections will support this new endeavor. There are already databases, journals, and monographs (ebook and physical books) that have been targeted to SENS and its multiplicity. Fields such as environment and sustainability, public policy, law, health, natural sciences, Indigenous studies, education, economics, and more are covered by the Library system. Our capacity to serve faculty, staff, and students with online research support, collection inquiries, document delivery, etc. continues with more innovations in these areas all the time. The dedicated SENS liaison librarian serves as a conduit between researchers and learners and the various subject areas they may need to interact with, as well as providing specialized services pertaining to environment and sustainability issues.

Date: May 11, 2020

Liaison Librarian’s Signature:

Library Dean’s Signature

Faculty member (for the sponsoring college/dept)
Appendix H: Budget Requirements Form

This form is to be completed with the assistance of the Financial Analyst that is assigned to your College by the Financial Services Division. The Financial Analyst should be contacted early in the process and will assist you in completing a budget template that is appropriate for your proposal.

This form identifies the relevant financial issues that should be summarized in your proposal and is to be completed for all new programs and major revisions regardless of whether new budgetary resources or budget reallocations are required from outside the sponsoring unit.

In particular, as well as summarizing capital and start-up, and permanent or ongoing resource requirements, this form facilitates a summary of the impact of the proposal on the university’s tuition and fee revenue. In addition, all relevant funding sources must be identified, with appropriate letters of support from each funding source.

The information provided herein must be consistent with the financial information required on all other forms that are submitted with the program proposal. In that regard, this form should be finalized after all other required forms are competed and attached to the proposal.

This form is to be completed by the faculty member responsible for the program proposal in consultation with the Financial Services Division. As noted above, contact the Financial Analyst responsible for your College for assistance. (Dial #8303 if you have questions regarding Financial Analyst assignments.)

1. Proposal Identification

Full name of program:  Masters of Sustainability
Short form (degree abbreviation): M.Ss.
Sponsoring Dept/College:  School of Environment and Sustainability

2. Full costing of resource requirements – refer to Table 1 below
The resource requirements summarized in this section are to be consistent with the information required in all other forms attached to the proposal.

a) Capital and Start-up Costs:
Examples of capital and start-up costs include new space, renovations, equipment, computer hardware and software, media and technology, and faculty costs for course development. Specifically, the resource requirements should agree to the Library, Information Technology, and Physical Resource requirement forms. If any of the capital and/or start-up costs also permanent operating cost implications, the permanent resource requirements should be summarized below.
b) Permanent Operating Costs:
Examples of permanent operating costs include costs for faculty, administrative, technical and other support staff, materials and supplies, and media and technology costs. While salary and benefit requirements for faculty and support staff are significant items, the resource requirements noted in the Registrar’s, Library and/or Information Technology forms and ongoing operating or maintenance costs noted in the Physical Resources form, must also be summarized in this section.

3. Sources of funding – 100% tuition – see 4 below
For the total amount of resources required for both capital and start-up costs, and for permanent operating costs, identify the amount required from each funding source and provide documentation from the funding source to support the amount.

The sources of funding could include the sponsoring college/departments base operating budget, other college/department sources of internal funding, special internal funding allocations such as priority determination, central university funds, and external sources as appropriate. Where the source of funding includes one or more colleges/departments, each individual college/department should be reported separately.

4. Enrolment (tuition revenue) – see Table 2 below
The enrolment data summarized in this section is to be consistent with the information required in the New Courses form. Where enrolment growth is projected, the amount and the related time period should be identified and explained.

The enrolment data should be provided in a manner that can be easily used to calculate tuition revenue. For example, enrolment data for degree courses should be presented as either 3-cu or 6-cu equivalents. The information presented should clearly differentiate between actual enrolment levels before the change and expected enrolment levels following the change, including growth as noted above.

a) Sponsoring college/department
The enrolment increases and decreases in courses in the sponsoring college/department must be provided in sufficient detail for a tuition revenue calculation. If enrolment levels are expected to increase significantly, documentation supporting the increase must be provided.

The anticipated increase in enrolments in the Master of Sustainability (formerly the Master of Sustainable Environmental Management (MSEM)) is due to the addition of an Energy Security field of study within the M.Ss program.

b) Other college/department:
The enrolment increases and decreases in courses in the other colleges/departments must be provided in sufficient detail for a tuition revenue calculation. If enrolment levels are expected to increase significantly, documentation supporting the increase must be provided.

If enrolments will increase or decrease in other colleges/departments, the change in resources requirements, if any, resulting from the increase or decrease should be included in section 2.

5. Additional Comments
Please provide and additional comments to support the program budget.
Date: 27 May 2020

Financial Analyst (assisting in form preparation on behalf of the Financial Services Division): Ms. Tracey McHardy, Strategic Business Advisor (Finance), People and Resources

Faculty member (for the sponsoring college/dept): Dr. Maureen Reed, Assistant Director, Academic, School of Environment and Sustainability

Table 1: 5-year Budget Projections

<table>
<thead>
<tr>
<th>University of Saskatchewan</th>
<th>2021/22</th>
<th>2022/23</th>
<th>2023/24</th>
<th>2024/25</th>
<th>2025/26</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Environment &amp; Sustainability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters of Sustainability degree program (revised MSEM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projected revenue and expenditures based on enrolment projections (above) and assumptions listed in the notes below as of April 24, 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**REVENUE**

<table>
<thead>
<tr>
<th></th>
<th>2021/22</th>
<th>2022/23</th>
<th>2023/24</th>
<th>2024/25</th>
<th>2025/26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>121,142</td>
<td>282,110</td>
<td>364,980</td>
<td>419,727</td>
<td>434,417</td>
</tr>
<tr>
<td>Energy Security</td>
<td>327,625</td>
<td>519,940</td>
<td>561,535</td>
<td>561,189</td>
<td>601,551</td>
</tr>
<tr>
<td>Regenerative Sustainability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>448,767</td>
<td>802,050</td>
<td>926,515</td>
<td>1,000,916</td>
<td>1,035,968</td>
</tr>
</tbody>
</table>

**EXPENDITURES**

<table>
<thead>
<tr>
<th></th>
<th>2021/22</th>
<th>2022/23</th>
<th>2023/24</th>
<th>2024/25</th>
<th>2025/26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary &amp; Benefits</td>
<td>2.5%</td>
<td>2.5%</td>
<td>2.5%</td>
<td>2.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td>0.15 FTE</td>
<td>42,790</td>
<td>43,347</td>
<td>44,430</td>
<td>45,541</td>
<td>46,680</td>
</tr>
<tr>
<td>Program directors</td>
<td>562,520</td>
<td>371,583</td>
<td>580,873</td>
<td>390,394</td>
<td>400,154</td>
</tr>
<tr>
<td>0.15 FTE Faculty - both streams (per 3 cu course x 16)</td>
<td>7,500</td>
<td>7,688</td>
<td>7,880</td>
<td>8,077</td>
<td>8,279</td>
</tr>
<tr>
<td>1 Sessional lecturer</td>
<td>104,951</td>
<td>107,575</td>
<td>110,284</td>
<td>113,021</td>
<td>115,847</td>
</tr>
<tr>
<td>Administrative staff</td>
<td>3,720</td>
<td>22,321</td>
<td>22,879</td>
<td>23,451</td>
<td>24,038</td>
</tr>
<tr>
<td>Graduate support assistant</td>
<td>14,350</td>
<td>17,500</td>
<td>19,250</td>
<td>19,250</td>
<td>19,250</td>
</tr>
<tr>
<td>Total Salary &amp; Benefits</td>
<td>559,532</td>
<td>570,572</td>
<td>586,149</td>
<td>600,321</td>
<td>614,846</td>
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<tr>
<td>Other Expenditures</td>
<td>2.0%</td>
<td>2.0%</td>
<td>2.0%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Operating Costs - promo &amp; recruitment</td>
<td>5,000</td>
<td>5,100</td>
<td>5,202</td>
<td>5,306</td>
<td>5,412</td>
</tr>
<tr>
<td>Scholarships - 6 x $1,500</td>
<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
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<td><strong>Revenue Over Expenditures Surplus (Deficiency)</strong></td>
<td>(126,545)</td>
<td>203,248</td>
<td>309,965</td>
<td>369,189</td>
<td>383,588</td>
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</table>

**Assumptions**

1. Above excludes any maintenance / program fee that may be charged if a student takes longer than 2 years to complete.
2. Overall salary escalation of 2% forecasted for all employee groups.
3. Non-salary expenditures escalate 2% per year.
4. Operating costs for promotion of energy security remain at $5K (50% of the $10K already allocated to professional programs).
5. Assumes each student receives 10 hours writing support for duration of their program.
6. TABBS overall impact is positive.

Notes:

**Ending fund balance**

- 0 (126,545) 76,703 386,668 755,856 1,145,444
### Table 2 - M.Ss Tuition & Enrolment

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<td>% of students that complete in two years</td>
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<td>50.0%</td>
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Appendix I: Letters of Support

The following letters of support have been received for this proposal.

Murray Fulton, Director, Johnson-Shoyama Graduate School of Public Policy
Susanne Kresta, Dean, College of Engineering
Martin Phillipson, Dean, College of Law
Mary Buhr, Dean, College of Agriculture and Bioresources
Michelle Prytula, Dean, College of Education
Gordon DesBrisay, Vice-Dean Academic, College of Arts and Science
Chief Peter A. Beatty, Peter Ballantyne Cree Nation
Steve Sousa, Valard Group of Companies
Cheri Spooner, Director, Distance Education Unit
To: College of Graduate and Postdoctoral Studies
   University Council
From: Murray Fulton, Director, JSGS Saskatoon Campus
Date: June 16, 2020
Subject: Letter of Support for Master of Sustainability (M.Ss) program

I am pleased to write this letter of support on behalf of the Johnson Shoyama Graduate School of Public Policy (JSGS) to express our support for the proposed revisions to the Master of Sustainable Environmental Management (MSEM) program from the School of Environment and Sustainability. We have been consulted about the plans for revising and rebranding this program into a Master of Sustainability. The development of a single professional Master’s program with multiple fields of study is a logical, cost-effective model.

We look forward to this new program and see in it several opportunities for collaboration between JSGS and SENS that we think would be useful to explore. For instance, we have a strong set of online courses that could enhance the program and provide students with extra flexibility.

We foresee no major negative impact on student enrolment in our programs. By attracting new students to the University of Saskatchewan, the revised program will strengthen the university’s position as a leader in the sustainability area, thereby benefitting all programs.

Yours truly,

Murray Fulton
Director and Professor, Johnson Shoyama Graduate School of Public Policy
Saskatoon Campus
University of Saskatchewan
To: College of Graduate and Postdoctoral Studies  
University Council  

From: Suzanne Kresta, Dean of Engineering  

Date: June 10, 2020  

Subject: Letter of Support for Master of Sustainability (M.Ss.) program  

To the College of Graduate and Postdoctoral Studies and University Council,

The College of Engineering supports for the proposed revisions to the Master of Sustainable Environmental Management (MSEM) program from the School of Environment and Sustainability. We were consulted during the initial stages of planning for revisions to this program and rebranding into a Master of Sustainability. A single professional Master’s program with multiple fields of study is a logical, cost-effective way forward. This newly envisioned Master of Sustainability aligns with SENS’s strategic plan and is fully consistent with the overall vision of the University of Saskatchewan being “the University the world needs.”

While the initial model foresaw increased involvement of engineering instructors in SENS graduate programming, this model uses a single APA to deliver all of the engineering content. While additional instructional resources are always welcome and were certainly needed to make the program sustainable, we are reaching out to SENS to explore ways we might return to a more integrated model, and hope that this leads to continually increasing collaborations between the College of Engineering and SENS.

We foresee no major negative impact on student enrolment in other similar or related programs in our units. By contrast, we hope that by attracting new students to the University, we will raise the University’s profile more generally, and the College can benefit from enhanced enrollments over time.

Please let me know if you require further information. Thank you.

Sincerely,

Suzanne Kresta  
Dean and Professor  
College of Engineering
To: College of Graduate and Postdoctoral Studies
   University Council

From: Dean Martin Phillipson, College of Law

Date: June 2, 2020

Subject: Letter of Support for Master of Sustainability (M.Ss) program

To the College of Graduate and Postdoctoral Studies and University Council,

I am pleased to write this letter of support on behalf of the College of Law to express our support for the proposed revisions to the Master of Sustainable Environmental Management (MSEM) program from the School of Environment and Sustainability. We have been consulted about the plans for revising this program and rebranding into a Master of Sustainability, and we see developing a single professional Master’s program with multiple fields of study as a logical, cost-effective way forward that can serve as a model for establishing fields of study. This newly envisioned Master of Sustainability aligns with SENS’s strategic plan and is fully consistent with the overall vision of the University of Saskatchewan being “the University the world needs.”

We look forward to this new program. We foresee no major negative impact on student enrolment in other similar or related programs in our units. By contrast, we hope that by attracting new students to the University, we will raise the University’s profile more generally, and the College can benefit from enhanced enrollments over time.

Please let me know if you require further information. Thank you.

Sincerely,

Martin Phillipson
Dean of Law
College of Law
To: College of Graduate and Postdoctoral Studies
   University Council
From: College of Agriculture and Bioresources
Date: May 26, 2020
Subject: Letter of Support for Master of Sustainability (M.Ss) program

To the College of Graduate and Postdoctoral Studies and University Council:

I am pleased to write this letter of support on behalf of the College of Agriculture and Bioresources to express our support for the proposed revisions to the Master of Sustainable Environmental Management (MSEM) program from the School of Environment and Sustainability. We have seen previous drafts of a proposed program, and we see developing a single professional Master’s program with multiple fields of study as a logical, cost-effective way forward that can serve as a model for establishing new fields of study. This newly envisioned Master of Sustainability aligns with SENS’s strategic plan and is fully consistent with the overall vision of the University of Saskatchewan being “the University the world needs.”

We look forward to working with SENS and other pertinent Colleges to develop a carefully-planned program to ensure that the proposed professional Master’s and its associated fields of study are distinct, so that there are no negative impacts on student enrolment in other similar or related programs in our units. We hope that by attracting new students to the University to a distinct SENS program, we will raise the University’s profile more generally, and the College and School can benefit from enhanced enrollments over time.

Please let me know if you require further information. Thank you.

Sincerely,

Mary M. Buhr, PhD
Dean and Professor
College of Agriculture and Bioresources
June 3, 2020

To Whom it May Concern;

I am pleased to write this letter on behalf of the College of Education in support for the proposed revisions to the Master of Sustainable Environmental Management (MSEM) program from the School of Environment and Sustainability (SENS).

In conversations with Dr. Liber and through the program overview, I understand the benefits of the program revisions and rebranding, and the implications that this programming has in terms of meeting the unit’s goals and meeting the larger mission of the University of Saskatchewan.

The College of Education also recognizes alignment in the proposed complementary certificate work and the College’s own newly developed strategic goals for climate change and education programming. As these certificates develop, the College of Education sees itself as one of the many units expected to collaboratively work toward the development of interdisciplinary programming, or other new certificate programming as envisioned through this proposal or through the President’s Sustainability Council in the future.

We wish SENS great success with this initiative, and look forward to future work together.

Please let me know if you require further information.

Sincerely,

Michelle Prytula
Dean, College of Education
June 19, 2020

From: Dr. Gordon DesBrisay, Vice-Dean Academic, College of Arts and Science
Attn: College of Graduate and Postdoctoral Studies; University Council
Re: Letter of Support for Master of Sustainability (M.Ss.) Program

Dear Colleagues,

I write on behalf of the College of Arts and Science to express our support for the proposed revisions to the Master of Sustainable Environmental Management (MSEM) program from the School of Environment and Sustainability. There is much to admire in the final draft proposal, not just for the programs and program revisions immediately proposed, but also in terms of a platform for future interdisciplinary degrees and certificates attuned to the needs of professionals in the field. We agree with the proponents that this constitutes a logical, cost-effective way forward that can serve as a model for emerging fields of study.

Consultation appears substantive across much of the university, which is to be commended, but it was a little thinner than ideal with regard to our college. Evidence of substantive consultation at the relevant departmental and unit level would be appreciated regarding future initiatives. That said, we have seen the impressive final draft of the proposal and are pleased to signal our support.

Gordon DesBrisay
Vice-Dean Academic
College of Arts and Science
July 28, 2019

Professor Greg Poelzer
School of Environment and Sustainability
University of Saskatchewan
Room 337, Kirk Hall, 117 Science Place
Saskatoon, SK S7N 5C8

Re: Master's of Energy Security, University of Saskatchewan

Dr. Poelzer,

The Peter Ballantyne Cree Nation (PBCN) is pleased to offer this letter of support for the Master's of Energy Security being led by Dr. Greg Poelzer from the University of Saskatchewan.

The PBCN believes that this new program will help train our future leaders who will develop new capacity for energy transition in northern communities. By bringing this opportunity to Indigenous communities in the North, this program seeks to create the knowledge and tools needed to increase capacity in our communities. This type of community capacity will be necessary to ensure sustainable energy solutions are implemented and will continue to help the PBCN bring economic and social opportunity and stability to its members.

We fully support this timely and essential program that will help make strides in enhancing the quality of life for Canada’s Northern and Indigenous communities. We offer our representation and expertise to the working group. As a partner of the CASES research initiative co-led by Dr. Poelzer, we extend the following commitments to the 24-month Master’s in Energy Security by making contributions of:

- Elected official/staff time as a member of the Governance Committee equivalent to approximately 15 days valued at $15,000 of in-kind contributions.
- Indigenous student bursaries/scholarships (upon implementation of the degree program) valued at $100,000.
- Use of facilities and resources to support local meetings, workshops and training valued at $2,000 of in-kind contributions.

Sincerely,

Chief Peter A. Beatty
Peter Ballantyne Cree Nation
July 30, 2019

Professor Greg Poelzer  
School of Environment and Sustainability  
University of Saskatchewan  
Room 337, Kirk Hall, 117 Science Place  
Saskatoon, SK S7N 5C8

Re: NRCan Clean Energy for Rural and Remote Communities (CERRC)  
Capacity Building Stream Grant

Professor Poelzer:

Please accept this letter of support, on behalf of The Valard Group, for the Clean Energy for Rural and Remote Communities (CERRC) Capacity Building Stream grant application.

Valard is Canada’s premier utility contractor, providing comprehensive EPC+ (engineering, procurement and construction) and maintenance services to utilities, independent power producers, mining, oil and gas industries, and rural electric associations throughout Canada. **As a company, Valard is committed to building mutually beneficially, sustainable and collaborative relationships and partnerships with Indigenous communities and has a proven track record of collaborating on successful projects with First Nations groups across the country.** These partnerships allow Valard to further develop and extend these collaborations as well as to take a pause and think about growing a legacy through better community engagement to build sustainable community capacity.

Valard is committed to overcoming transactional business models and really engaging with communities on community-focused strategies, which is why Valard is greatly interested in participating in the CERRC partnership. This partnership takes a community-directed approach to understanding, identifying and executing energy sustainability. This partnership will allow Valard to continue to build and maintain strong relationships with the Indigenous communities that Valard works with and for.

As a partner of the Renewable Energy in Northern, Remote and Indigenous Communities Flagship Program at the School of Environment and Sustainability at the University of Saskatchewan, Valard has committed their support through:

- A $100,000 cash commitment (out of our $500,000 previous commitment to the Flagship program) to fund student bursaries/scholarship.
- Elected official/staff time as a member of the Governance Committee equivalent to approximately fifteen (15) days valued at $15,000 of in-kind contributions.

These funds will be used to help build the capacity of northern, remote and Indigenous communities and fund participation in the Master’s program.

**On behalf of the Valard Group, I enthusiastically endorse this program that will build key professional competencies energy security in northern and Indigenous communities across Canada.**

Sincerely,

Steve Sousa  
Chief Commercial Officer  
Valard Group of Companies
June 1, 2020

Dr. Karsten Liber  
School of Environment and Sustainability  
University of Saskatchewan

Dear Dr. Liber:

I am pleased to support the proposed Master of Sustainability (MSs) curriculum development project.

As you know, the University of Saskatchewan has a long history in providing learning opportunities to students studying at a distance from the main campus. This program builds on that commitment, allowing learners to learn where they live and at a pace that can accommodate students with busy work, home and community commitments.

University of Saskatchewan success in distance education has been built on a foundation of pairing subject matter expertise with professionals in instructional design and instructional technologies to build quality learning experiences. This is the service that my unit provides, and we have agreed to support the development and delivery of 17 courses, comprising 37 credit units, for distance delivery.

I look forward to collaborating with you and your team on this exciting project, and wish you the best of luck on your proposal.

Yours truly,

Cheri Spooner  
Director, Distance Education Unit  
cheri.spooner@usask.ca
Appendix J: Survey Results
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Introduction

The purpose of this project was to identify enrollment barriers and program needs for the School of Environment and Sustainability’s (SENS) Master’s of Sustainability, specialization in regenerative sustainability program. To understand unique and divergent perspectives, survey feedback was obtained from both prospective students and employment partners.

Methodology

The SSRL and the service recipient collected survey data between April 23 and May 13, 2020. A hybrid email invitation and snowball recruitment method was used to maximize the number of potential respondents. In total, responses were collected from 73 individuals (26 prospective students, and 47 potential employers). Findings from the survey are summarized and results are presented in tables and graphs as appropriate throughout this report.

Information about the Social Sciences Research Laboratories, University of Saskatchewan, is located in Appendix A.
Prospective Student Findings

Overview

A total of 26 participants completed the survey as prospective students. These respondents provided their feedback on a range of questions below.

Interest and Barriers

**Likelihood of Post-Secondary Entrance in Education in Sustainability**

*How likely or unlikely are you to seek additional post-secondary education in sustainability in the next 5 years?*

Overall, respondents who completed the survey were more likely than not to enter post-secondary education in sustainability in the next five years (Extremely unlikely: 3.8%, n = 1; Unlikely: 7.7%, n = 2; Slightly unlikely: 0.0%, n = 0; Slightly likely: 42.3%, n = 11; Likely: 30.8%, n = 8; Extremely likely: 15.4%, n = 4). The results are displayed in Figure 1.

![Figure 1: Likelihood of Post-Secondary Entrance in Education in Sustainability](image)

**Reasons for Non-Entry**

*Why are you unlikely to seek additional post-secondary education/training in sustainability in the next 5 years?*

Of the three respondents who were unlikely to enter post-secondary education in sustainability, lack of requirement for career advancement was the most common reason (100%; n = 3), followed by anticipated time demands (66.7%; n = 2). Anticipated program costs (33.3%; n = 1) and disinterest in content (33.3%; n = 1) were additionally cited. The results are displayed in Figure 2. However, due to small sample size, the findings should be interpreted with extreme caution.
**Reasons for Entry**

*Why are you likely to seek additional post-secondary education in sustainability in the next 5 years?*

Of the 23 respondents who were likely to enter post-secondary education in sustainability, general interest was the most commonly cited reason (56.5%; n = 13) followed by seeking career entry (47.9%; n = 11), seeking career advancement (43.5%; n = 10), and seeking career transition (30.4%; n = 7). A small portion of respondents cited other reasons (4.3%; n = 1). The results are displayed in Figure 3. Open ended responses are displayed in Table 1.
Likelihood of Post-Secondary Entrance in General

How likely are you to seek any additional post-secondary education in the next 5 years?

Of the three respondents who were unlikely to enter post-secondary education in sustainability, most were extremely likely to enter post-secondary education in general (66.7%; n = 2); the remaining respondent was slightly likely to continue (33.3%; n = 1). The results are displayed in Figure 4.

Note that those who indicated that they were slightly unlikely to extremely unlikely were screened out of the survey and are not included in this report.

![Figure 4: Likelihood of Post-Secondary Entrance in General](image)

Branding

Program Name Preference

Based on name alone, please indicate how appealing each of the following program names are to you:

Overall, prospective students evaluated the three program names somewhat similarly. When binning responses of “slightly appealing” to “completely appealing” for each program name option, Regenerative sustainability (73.1%; n = 19) was found appealing more frequently than Transformative sustainability (65.4%; n = 17) and Sustainability transitions (61.5; n = 16). The results are displayed in Table 2 and Figure 5.

<table>
<thead>
<tr>
<th></th>
<th>Slightly to Completely Appealing (%)</th>
</tr>
</thead>
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<tr>
<td>Regenerative sustainability</td>
<td>73.1</td>
</tr>
<tr>
<td>Transformative sustainability</td>
<td>65.4</td>
</tr>
<tr>
<td>Sustainability transitions</td>
<td>61.5</td>
</tr>
</tbody>
</table>

Table 2: Program Name Preference – Slightly to Completely Appealing
Future Education Considerations

Program Options

*If you were considering more post-secondary education, which program options would appeal to you?*

The majority of prospective students would consider a professional Master’s Degree (76.9%; n = 20) followed by a Graduate Certificate (65.4%; n = 17). Some respondents prefer another option (11.5%; n = 3). The results are displayed in Figure 6; verbatim other responses are displayed in Table 3.
**Program Delivery**

*Which program delivery options would you consider given your current circumstances? Select all that apply.*

The majority of prospective students would combination programs (Full-Time Combination: 57.7%; n = 15; Part-Time Combination: 46.2%; n = 12). After this, students would consider full time on-campus (42.3%; n = 11), followed by part-time online (38.5%; n = 7), and part-time on-campus (26.9%; n = 7). One respondent would not consider any options for their current circumstances (3.8%; n = 1). The results are displayed in Figure 7.

![Program Delivery](image)

**Flexible Program Option**

SENS’s Sustainable Environmental Management program does not currently allow students to enroll through a flexible program option. A flexible program options allows students to complete the program part time, remotely, and/or on their own time. *To what extent would a flexible program option increase your likelihood of completing post-secondary education in sustainability?*

When considering the flexible program option, the majority of respondents experience a considerable or extreme increase in enrollment likelihood (57.7%; n = 15), followed by a moderate increase (23.1%; n = 6) or no or mild increase (19.2%; n = 5). The results are displayed in Figures 8 and 9.
Figure 8: Flexible Program Option (Binned)

Figure 9: Flexible Program Option (Granular)

Certificate Programs

If you had an option to obtain a 9-credit unit online certificate in a field related to sustainability, which of the following certificate programs would most interest you? Select up to five certificate programs that would most interest you.

The most popular certificate programs were Sustainability Solutions (50.0%; n = 13) followed by Climate Change Assessments and Communications (46.2%; n = 12), Government Foundations for Sustainability (46.2%; n = 12), Renewable Energy (42.3%; n = 11), Advanced Governance for Environment and Sustainability (38.5%; n = 10), and others. The results are displayed in Figure 10. Verbatim elaborative responses are displayed in Table 3.
Certificate Programs

<table>
<thead>
<tr>
<th>Certificate Programs (Other)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food security and impact of agricultural production on the environment</td>
<td>46.2</td>
</tr>
<tr>
<td>Rangeland management</td>
<td>46.2</td>
</tr>
<tr>
<td>Regenerative agriculture</td>
<td>42.3</td>
</tr>
<tr>
<td>Advanced Governance for Environment and Sustainability</td>
<td>38.5</td>
</tr>
<tr>
<td>Biocultural Diversity and Social Values</td>
<td>38.5</td>
</tr>
<tr>
<td>Water Management</td>
<td>34.6</td>
</tr>
<tr>
<td>Community Energy Planning and Finance</td>
<td>34.6</td>
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<tr>
<td>Energy Transitions</td>
<td>30.8</td>
</tr>
<tr>
<td>Toolbox for Environmental Practice</td>
<td>23.1</td>
</tr>
<tr>
<td>Hydrology</td>
<td>23.1</td>
</tr>
<tr>
<td>Water Science</td>
<td>11.5</td>
</tr>
<tr>
<td>Other</td>
<td>11.5</td>
</tr>
</tbody>
</table>

Table 3: Certificate Programs (Other)

Educational Program Preferences

**Weekly Commitment**

Approximately how many hours per week could you potentially commit to educational work (including class time and assignments) in a program of interest?
Interestingly, there appears to be a bimodal distribution potentially reflecting two groups of respondents: (1) those who can spend approximately 6-8 hours per week (38.5%; n = 10), and those who can approximately spend 12 or more hours per week (38.5%; n = 10). An exploratory analysis of demographical information does not reveal any trends to account for this difference. However, those with more time to commit more frequently consider on-campus opportunities regardless of whether those opportunities occur full- or part-time. The results are displayed in Figure 11 and Table 4.

### Table 4: Program Delivery by Weekly Commitment

<table>
<thead>
<tr>
<th>Weekly Commitment</th>
<th>Full-time on-campus</th>
<th>Full-time online</th>
<th>Full-time combination</th>
<th>Part-time on-campus</th>
<th>Part-time online</th>
<th>Part-time combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 10 hours/week</td>
<td>18%</td>
<td>50%</td>
<td>40%</td>
<td>14%</td>
<td>60%</td>
<td>42%</td>
</tr>
<tr>
<td>10+ hours/week</td>
<td>82%</td>
<td>50%</td>
<td>60%</td>
<td>86%</td>
<td>40%</td>
<td>58%</td>
</tr>
<tr>
<td>Total in Group (N = …)</td>
<td>11</td>
<td>10</td>
<td>15</td>
<td>7</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

### Figure 11: Weekly Commitment

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**Intensity and Duration**

Currently, SENS’s Sustainable Environmental Management program is designed as a 1-year intensive program. Would you prefer to enroll in a program that was...

The majority of respondents prefer a longer and less intensive program (73.1%; n = 19). The remainder prefer to enroll in a program that is unchanged (26.9%; n = 7). The results are displayed in Figure 12.

### Figure 12: Intensity and Duration
Work Environment

Employment Status

Are you currently employed?

The majority of respondents are employed full-time (50.0%; n = 13). The remainder are employed part-time (19.2%; n = 5), self-employed (3.8%; n = 1) or are unemployed (26.9%; n = 7). The results are displayed in Figure 13.

![Figure 13: Employment Status](image)

Support for Continuing Education

To the best of your knowledge, does your employer currently offer support for continuing education while employed?

Of those who are employed either full-time or part-time (N = 18), the majority of respondents do not know whether they have support for continuing education through their workplace (44.4%; n = 7). Most knowledgeable respondents do have support (38.9%; n = 7); the rest do not (16.6%; n = 3). The results are displayed in Figure 14.

![Figure 14: Support for Continuing Education](image)

Types of Support for Continuing Education

What kind of continuing education support(s) are available to you? Select all that apply.

Of the respondents have educational support through their workplace and are aware of it (N = 7), an equal mix of flexible work hours (71.4%; n = 5) and educational leave (71.4%; n = 5) are available. Some respondents indicated other available supports (42.9%; n = 3). The results are displayed in Figure 15, and verbatim responses are displayed in Table 5.
Types Support for Continuing Education (Other)

- Payment for courses taken online that relate directly to the job
- Possible project research at work if applicable.
- Tuition support

Table 5: Types of Support for Continuing Education (Other)

Demographics

Current Status

Which best describes your current status?

The majority of prospective student respondents are working professionals (46.2%; n = 12). The remaining respondents are graduate students (26.9%; n = 7), undergraduate students (19.2%; n = 5), and other (7.7%; n = 2). The results are displayed in Figure 16, and verbatim responses are displayed in Table 6.
**Graduation Year of Working Professionals**

*In which year did you graduate from your most recent program?*

Of the 12 working professionals who completed this survey, the majority had graduated in 2019 (58.3%; n = 7). The remaining respondents graduated in 2017 or earlier (41.8%; n = 5). The results are displayed in Figure 17.

![Figure 17: Graduation Year of Working Professionals](image)

**Type of Working Professional (Degree)**

*Did you most recently graduate from a...?*

Of the 12 working professionals who completed this survey, half most recently completed a university undergraduate degree (50%; n = 6), and half completed a university graduate degree (50%; n = 6). The results are displayed in Figure 18.

![Figure 18: Type of Working Professional (Degree)](image)

**Type of Working Professional (Experience)**

*Do you consider yourself to be a...?*

Of the 12 working professionals who completed this survey, one quarter identified as new graduates (25.0%; n = 3), one quarter identified as early-career professionals (25.0%; n = 3), and half identified as mid-career professionals (50.0%; n = 6). The results are displayed in Figure 19.
Figure 19: Type of Working Professional (Experience)

Gender

Which gender do you prefer to identify with?

The majority of prospective students who completed the survey were female (65.4%; n = 17). The remainder were male (30.8%; n = 8) or preferred not to say (3.8%; n = 1). The results are displayed in Figure 20.

Figure 20: Gender

Age

How old are you (in years)?

The majority of prospective students were 21-25 years of age (38.5%; n = 10). The remainder were 26-30 (19.2%; n = 5); 31-35 (15.4%; n = 4), or 36+ (11.5%; n = 3). Some respondents preferred not to specify (15.4%; n = 4). The results are displayed in Figure 21.
**Members in Household**

*Including you, how many people live in your household?*

Respondents most frequently live in households with two or three members (1 Person: 11.5%, n = 3; 2 People: 23.1%, n = 6; 3 People: 23.1%, n = 6; 4 or More People: 15.4%; n = 4). Many respondents preferred not to specify (26.9%; n = 7). The results are displayed in Figure 22.

**Children in Household**

*How many children (under 18 years of age) live in your household?*

The vast majority of respondents did not have any children in their household (61.5%; n = 16). The remaining respondents had either one (7.7%; n = 2), two (7.7%; n = 2) or three (3.8%; n = 1) children. Many respondents preferred not to specify (19.2%; n = 5). The results are displayed in Figure 23.
**Figure 23: Children in Household**

**Household Income**

*For comparison purposes only, which of the following best describes your annual household income before taxes?*

Many respondents currently have a household income below $25,000 (19.2%; n = 5). Outside of this group, most respondents have a household income of $50,000 to $74,999 (26.9%; n = 7), in alignment with the median household income reported in the 2016 Canadian census.¹ Many respondents preferred not to specify their household income (23.1%; n = 6). The results are displayed in Figure 24.

**Figure 24: Household Income**

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Employment Partner Findings

Overview

A total of 47 participants completed the survey as an employer. These respondents provided their feedback on a range of questions below.

Program Value

Value for Current Employee

How valuable do you think this program would be to a current employee in your workplace if offered as a:

Overall, employers perceive the program as more valuable for current employees when offered as a Professional Master’s Degree (46.8%; n = 22) relative to a Graduate Certificate (38.3%; n = 18). The results are displayed in Figure 25 and Table 7.

![Figure 25: Value for Current Employee](image)

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Professional Master’s Degree</th>
<th>Graduate Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not valuable at all</td>
<td>8.5</td>
<td>12.8</td>
</tr>
<tr>
<td>Slightly valuable</td>
<td>29.8</td>
<td>31.9</td>
</tr>
<tr>
<td>Moderately valuable</td>
<td>31.9</td>
<td>27.7</td>
</tr>
<tr>
<td>Very valuable</td>
<td>38.3</td>
<td>29.8</td>
</tr>
<tr>
<td>Extremely valuable</td>
<td>8.5</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Table 7: Value for Current Employee (binned responses)

Value for Future Employee

How valuable do you think this program would be to a prospective future employee in your workplace if offered as a:

Overall, employers perceive the program as more valuable for prospective future employees when offered as a Professional Master’s Degree (44.7%; n = 21) relative to a Graduate Certificate (36.2%; n = 17). The results are displayed in Figure 26 and Table 8.
Program Name Preference

If you required an employee with a Master’s degree in “environment and sustainability,” would you consider hiring someone with a specialization in...

Employers differentiate very minimally between different the program names proposed. Employers would consider hiring graduates from any of the three programs equally often (48.9%; n = 23). The results are displayed in Figure 27.
**Degree Title Importance**

*How important is a degree title (e.g., Diploma, BA, BSc, MA, MSc, PhD, etc.) to you when considering a job candidate for employment?*

Employers appear to vary normally in their perceptions of degree title importance with most employers considering a title moderately important (44.7%; n = 21). The results are displayed in Figure 28.

![Degree Title Importance](image)

**Figure 28: Degree Title Importance**

**Work Environment**

**Support for Continuing Education**

*To the best of your knowledge, does your company/organization currently offer support for continuing education for employees?*

Most employers indicate that support for continuing education is available (68.1%; n = 32). The remaining employers do not provide support (12.8%; n = 6) or do not know (19.1%; n = 9). The results are displayed in Figure 29.

![Support for Continuing Education](image)

**Figure 29: Support for Continuing Education**
Types of Support for Continuing Education

What kind of continuing education support(s) are offered by your company/organization? Select all that apply.

Of the 32 employers whose workplace does provide educational support, the vast majority report providing flexible work hours (87.5%; n = 28) and educational leave (78.1%; n = 25). Many indicate that other supports are provided (21.9%; n = 7). The results are displayed in Figure 30. Verbatim responses are displayed in Table 9.

![Types of Support for Continuing Education](image)

<table>
<thead>
<tr>
<th>Types of Support for Continuing Education (Other)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Funding</td>
</tr>
<tr>
<td>Financial support</td>
</tr>
<tr>
<td>Funding</td>
</tr>
<tr>
<td>Funding in some circumstances</td>
</tr>
<tr>
<td>Opportunity to learn on the job and takes necessary education to further skills</td>
</tr>
<tr>
<td>Some discretionary funding</td>
</tr>
<tr>
<td>Some funding support</td>
</tr>
</tbody>
</table>

Table 9: Types of Support for Continuing Education (Other)
Comparative Findings

Graduate Expectations

Expected Roles

Which of the following roles do you hope a graduate with a Master’s of Sustainability in Regenerative Sustainability to occupy? Select all that apply.

Whereas students and employers mostly agree on expected roles, they appear to differ on the roles of collaborator (Employer: 74.5%; n = 35; Student: 57.7%; n = 15), innovator (Employer: 59.6%; n = 28; Student: 69.2%; n = 18) and change-maker (Employer 44.7%; n = 21; Student: 57.7%; n = 15). The results are displayed in Figure 31. Verbatim responses are included in Table 10.
Expected Roles (Employers - Other)

Project/Program Manager; Coordinator; Planner; Instigator

teacher

That is a rather interesting list, arguably more reflective of a stereotypical academic-based perspective. Employees fill specific positions, and therefore roles, in organizational structure and function. The core criteria for these include being technically sound critical thinkers that display appropriate due diligence in their work, find professional enjoyment (passion) in their work, who work well in team environments, and who have strong communication skills (esp. writing). I believe these are core skills for successfully fulfilling their roles. Every individual brings other secondary aspects that can strengthen the team and be developed/fostered e.g. some are more innovative, some are more entrepreneurial, some show greater leadership potential, etc. Diversity of such characteristics increases the strength of the organization.

Expected Roles (Students - Other)

Field worker

Not familiar with the term "Regenerative Sustainability" - would a potential employer understand?

Table 10: Expected Roles (Other)

Expected Skills

Which of the following skills do you want a graduate with a Master’s of Sustainability in Regenerative Sustainability to have? Select all that apply.

While employers and students expect many of the same skills, responses appear to differ by written communication (Employer: 87.2%; n = 41; Student: 65.4%; n = 17), verbal communication (Employer: 85.1%; n = 40; Student: 65.4%; n = 17), sound judgement (Employer: 66.0%; n = 31; Student: 46.2%; n = 12) and field skills (Employer: 63.8%; n = 30; Student: 46.2%; n = 12). The results are displayed in Figure 32. Verbatim responses are included in Table 11.

Note: Collaboration was inadvertently included twice in this list. The responses between these two presentations do not agree. Accordingly, it is unclear how respondents evaluated this item.
Figure 32: Expected Skills for Potential Employers and Prospective Students
Table 11: Expected Skills (Other)

<table>
<thead>
<tr>
<th>Expected Skills (Employers - Other)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder and group facilitation skills</td>
</tr>
<tr>
<td>The ability to edit a survey document accurately and notice that collaboration appears twice to maintain and project the &quot;quality&quot; image of the institution/organization.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expected Skills (Students - Other)</th>
</tr>
</thead>
<tbody>
<tr>
<td>See my answer to previous question. Unclear subject.</td>
</tr>
</tbody>
</table>

Expected Knowledge Areas

Which of the following knowledge areas do you want a graduate with a Master's of Sustainability in Regenerative Sustainability to have? Select all that apply.

Employers and students have much disagreement about which knowledge areas they want of a Master’s of Sustainability in Regenerative Sustainability. Perhaps most notable, desires diverge in terms of reconciliation with Indigenous peoples (Employer: 72.3%; n = 34; Student: 46.2%; n = 12) and governance systems (Employer: 66.0%; n = 31; Student: 38.5%; n = 10). The results are displayed in Figure 33. Verbatim responses are included in Table 12.
Figure 33: Expected Knowledge Areas for Potential Employers and Prospective Students
Expected Knowledge Areas (Employers - Other)

Not sure what that is

sociology/psychology

The MAsters course is going to be what, 8, 10, 12 courses? Unless subset specialties are being created it is quite unlikely that such limited contact hours can be spread across such wide "knowledge" areas. And what is the difference between food & energy "systems" and "security" and water "quality" and "security"?

This is hard to answer, because required knowledge areas are completely dependent on the job - some will require knowledge of energy systems, others food, or water, or green buildings, renewable energy, biodiversity, etc. - Helpful knowledge to have: -Environmental legislation, bylaws, policies. -Sustainability and climate related strategies and planning documents. -Solutions - what have other places done or tried? What's been successful and what needs to be improved upon? Tangible actions and examples. -An understanding of greenhouse gas accounting. -An understanding of budgeting, cost analysis, and economic paybacks. -An understanding of co-benefits and multi-solving - i.e. the relationship between environmental action and health, community well-being, business improvements, agriculture, etc.

Vegetation

Water Management Hydrology

Expected Knowledge Areas (Students - Other)

Economy and business

Plant communities, plant Id

Please define "regenerative sustainability" otherwise a pointless question.

Table 12: Expected Knowledge Areas (Other)

Survey Source

Survey Source

How did you first learn about this survey?

The most successful recruitment method for both employers and students was through email invitations (Employers: 83.0%; n = 39; Students: 65.4%; n = 17). However, snowball recruitment for student respondents via their employers was marginally successful (19.2%; n = 17). The results are displayed in Figure 34. Verbatim responses are displayed in Table 13.

![Survey Source](image_url)
<table>
<thead>
<tr>
<th>Source (Employers - Other)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing relationship with SENS program</td>
<td></td>
</tr>
<tr>
<td>Survey would have benefited from providing proposed program information about what would constitute the actual aspects/differences of Transformative sustainability, Regenerative sustainability, and Sustainability transitions. Without context it was difficult to infer what these mean and how such specializations apply to the real world. If that particular question is asking whether parsing sustainability specialization into fine-level academic categories within course-based graduate degrees has any advantages for prospective employees, I would suggest that it does not.</td>
<td></td>
</tr>
</tbody>
</table>

UofS MSENS

Table 13: Source (Other)
Appendix A: SSRL Information

Founded in 2011, the Social Sciences Research Laboratories (SSRL) represents a major investment in social science research infrastructure and research supports at the University of Saskatchewan, and across Canada. Comprised of ten research laboratories (Community-Based Observation Laboratory; Computational Research Laboratory; Experimental Decision Laboratory; EEG Hyperscanning Laboratory; Mixed Methods Research Laboratory; Qualitative Research Laboratory; Spatial Laboratory; Survey and Group Analysis Laboratory; Social Network Laboratory; and Video Therapy Analysis Laboratory), the SSRL has three objectives:

1. To provide researchers access to shared research infrastructure, as well as technical and administrative support.
2. To enable hands-on research training opportunities for undergraduate and graduate students in the social sciences.
3. To enable and support investigator-driven and community-engaged research.

Uniquely developed as a ‘public utility,’ the SSRL provides access to specialized research infrastructure (computers, equipment and software) and research space (specific and multi-purpose research space that facilitates mixed-methods research). Additionally, the SSRL provides access to research supports in the form of methodologists/specialists (SSRL operations staff) with backgrounds and training in specific social science research methodologies (e.g., quantitative/survey research; qualitative research; experimental research; mixed methods; mapping, GIS and spatial analyses). The SSRL and its component laboratories are available on a fee-for-service model to faculty, staff and students at the University of Saskatchewan, other academic institutions, and community partners outside of the university setting.

As a unit, the SSRL benefits from what is described as a ‘collective capacity,’ i.e., shared infrastructure, shared space and shared operational and administrative support provided across eight diverse, yet related research laboratories. The benefits of this collective capacity are substantial, allowing for shared theoretical and methodological explorations through mixed-methods research; facilitating community-engaged scholarship with individuals and organizations outside of the University of Saskatchewan; and providing student opportunities for experiential learning through practical, hands-on research and employment opportunities.

For More Information about the SSRL
To learn more about the SSRL, please contact us or visit our website:

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