AGENDA

2:30 p.m. Thursday, January 16, 2020
Neatby-Timlin Theatre – Arts 241

In 1995, the **University of Saskatchewan Act** established a representative Council for the University of Saskatchewan, conferring on Council responsibility and authority "for overseeing and directing the university's academic affairs." The 2019/20 academic year marks the 25th year of the representative Council.

As Council gathers, we acknowledge that we are on Treaty 6 Territory and the Homeland of the Métis. We pay our respect to the First Nations and Métis ancestors of our gathering place and reaffirm our relationship with one another.

niyanān onīkānēwak kā māmawi apiyāhk, nikiskēhtiyinān ōma nikotwāsik kihci tipahamātowin askiy ēkwa mīna ēta āpihtowikosānak kā wīkicik. nikihcēyimānānak kahkiyaw iyiniwak ēkwa āpihtawikosānak osci ōta askīhk ēkwa kāwi ta kiskēhtamahk kiwahkohtowiniwa.

Kaa maashakoonitoochik li koonsay, ni kishkayhtaynaan aen ayaahk sur li tayrayn di li traytii sis pi iita kaa wiikichik lii Michif. Li rispay ni miiyaanaanik lii Praamyayr Naasyoon pi ni waahkoomaakanuk lii Michif iita kaa maashakoonitooyaahk pi ni shoohkamoonihtaanaan ka ishi waakoohtooyaahk.

1. **Call to Order**
2. **Tributes**
   - 2.1 Tribute to Professor Otto (Don) Rogers, Department of Art and Art History, presented by Jon Bath
3. **Adoption of the Agenda**
4. **Opening remarks**
5. **Approval of Minutes of the meeting of December 19, 2019**
6. **Business Arising from the Minutes**
7. **Report of the President**
8. **Report of the Provost**
9. **Student Societies**
   - 9.1 Report from the USSU
   - 9.2 Report from the GSA
10. **Academic Programs Committee**
    - 10.1 Request for Decision: Admissions Qualifications change – Master of Water Security (MWS) Program

      It is recommended that Council approve the proposed changes to the admissions qualifications for the Master of Water Security (MWS) program, effective the 2021-22 admissions cycle
    - 10.2 Report for Information: Changes to graduate programs in the Biomedical Science programs
    - 10.3 Report for Information: Change to the Bachelor of Science in Engineering (B.E.) program in Engineering Physics – credit unit reduction

11. Nominations Committee

11.1 Request for Decision: Nomination to the Scholarship and Awards Committee

It is recommended that Council approve the nomination of Hyunjung Shin, Department of Curriculum Studies to serve as member of the scholarship and awards committee of Council effective immediately to June 2022.

11.2 Request for Decision: Nominations to search committees

It is recommended that Council approve the nomination of the following individuals to serve as members of the deans' search committees below effective immediately:

- *Dr. Terry Fonstad, associate dean research and partnerships in the College of Engineering will serve on the Dean's search committee for Nursing;*
- *Dr. Angela Bedard Haughn, associate dean research and graduate studies, College of Agriculture & Bioresources will serve on the executive director's search committee for the School of Environment and Sustainability.*

11.3 Request for Decision: Nominations to deans' review committees

It is recommended that Council approve the nomination of the following individuals to serve as members of the deans' review committees below effective immediately:

- *Dr. Anurag Saxena, associate dean of postgraduate and medical education in the College of Medicine will serve for the dean of WCVM, Dr. Doug Freeman;*
- *Dr. Jack Gray, vice dean research, scholarly and artistic work, College of Arts & Science will serve for the dean of the Library, Dr. Melissa Just;*
- *Dr. Teresa Paslawski, associate dean, School of Rehabilitation Science, will serve for the dean's review for the College of Kinesiology, Dr. Chad London;*
- *The Associate dean of the Library, Rachel Sarjeant-Jenkins, will serve on the review committee for the dean of the College of Law, Dr. Martin Philipson.*

12. Governance Committee

12.1 Notice of Motion: Council Bylaws amendment – monthly meetings

It is recommended that Council approve an amendment of the Council bylaws to eliminate the annual February meeting of Council as Part One III.5(b), effective March 1, 2020.

13. Joint Committee on Chairs and Professorships

13.1 Request for Decision: The Wolfe-Saskatchewan Fellowship At-Large for Outstanding Newly Recruited Research Scholars

It is recommended that Council approve the Wolfe-Saskatchewan Fellowship At-large for Outstanding Newly Recruited Research Scholars and recommends to the Board of Governors that the Board authorize establishment of the chair.

14. Other business

15. Question period

16. Adjournment

Next meeting February 20, 2020 – Please send regrets to michelle.kjargaard@usask.ca
Deadline for submission of motions to the Coordinating Committee: January 27, 2020.

Updated as of: January 16, 2020

UNIVERSITY OF SASKATCHEWAN

MINUTES OF UNIVERSITY COUNCIL
2:30 p.m. Thursday, December 19, 2019
Neatby-Timlin Theatre, Arts 241

Attendance: See Appendix A for the listing of members in attendance.

1. Call to Order

The meeting was called to order at 2:35pm.

2. Tributes

There was a tribute to Professor Emeritus, Dr. (Charles) Dennis O'Shaughnessy, Department of Mathematics and Statistics, presented by William (Bill) Laverty.

There was a tribute to Professor Emeritus, Dr. Ronald Fleming, Department of Electrical Engineering, presented by Robert Johanson.

3. Adoption of the Agenda

Motion (Gjevre/Flynn): *That the agenda be approved as circulated.*

CARRIED

4. Opening remarks

The chair, Dr. Jay Wilson, acknowledged that Council meets on Treaty 6 Territory and the Homeland of the Métis, paying respect to the First Nations and Métis ancestors of our gathering place and reaffirming our relationship with one another.

The chair announced that Council meeting dates for the next academic year 2020-2021 were approved by the coordinating committee and posted to the website. He noted that there *will not* be a February 2021 meeting in the schedule. The Council meeting locations are changing for the next academic year 2020/21; they will be held in the Convocation Hall. This is to accommodate class schedules.

The chair reported on the recent breakfast meeting of the chairs of Council with the PEC. The topics of discussion were the future of the University Club and the University Plan.

Dr. Wilson reminded those in attendance of the usual protocols for discussion and debate.

On behalf of Council, Dr. Wilson congratulated the president on his reappointment.

Dr. Wilson also thanked Dr. Beth Bilson for her work as University Secretary as this was her last meeting in the role.

5. Approval of Minutes of the meeting of November 21, 2019

Motion (Dobson/de Boer): *That the minutes be approved as presented.*

CARRIED

6. Business Arising from the Minutes

6.1 Action Item - response to the question of college elections for college members' seats on Council

Dr. Stephen Urquhart, chair of the governance committee responded to a question from the last Council meeting. The question was if the university was following the *University of Saskatchewan Act 1995* with respect to the election of college representatives, as defined by section 53(2) b and c. Based on discussion with the secretary's office, he confirmed we are following the Act. College representatives' terms are three years long, so the last a memo seeking nominations for college representatives was January 2017. A new call for nominations will go out in January 2020. He asked Council members ask their colleagues to put their names forward to serve either as members at large or as college representatives.

There was a question about the suggested changes to the record of the chair's remarks at the October 17, 2019 meeting of Council. The chair confirmed that the amendments to the minutes were completed and posted on the website.

7. Report of the President

President Stoicheff thanked Dr. Bilson for her service to the university in the role of University Secretary. He informed Council that she will be taking on a new position to advise on the appropriate organization of our different legal services across the university.

The president directed Council to his report for December 2019 as provided in the agenda materials.

There was a question about the priority of Indigenization in the University Plan and the university's procurement strategy. The president responded that Greg Fowler, vice president finance and resources would provide more information to Council on the university's Indigenous procurement strategy and the procurement policy at a future meeting. [Table 1. Action 1]

There was a question about the nature of the MOUs recently signed with different institutions internationally, specifically in India, and whether the MOUs would increase opportunities for student exchanges. The president replied that some agreements are high-level and include aspirations about student mobility. Other agreements are more specific to particular areas of study or research.

8. Report of the Provost

Provost Tony Vannelli presented his December 2019 report. He discussed three items in particular: budget planning, senior leadership searches, and the task force on public health. He indicated that resource allocations had been made to all colleges and support centres, and would be part of the approved budget from the Board in March 2020. He indicated that colleges and schools are looking to integrate their plans with their budgets in a way that has positive impacts on programs, our academic mission and research priorities to keep the university strong.

With respect to decanal searches, of the university's 14 colleges and 3 schools, 7 are undergoing some form of review or search for decanal positions, providing information on the timing of the Nursing, Library, WCVM, Law, SENS, Kinesiology, and CGPS searches and reviews.

With regard to the task force on public health, he reported that the consultation process has been mapped out. He will report back on progress at Council in the New Year.

A Council member requested, again [from the last meeting], that the resource allocation information from 2018/19 be posted online for transparency. The provost indicated that it would be made available in January 2020. [Table 1. Action 2]

9. Student Societies

9.1 Report from the USSU

Regan Ratt-Misponas, President of the USSU, presented the USSU Report for December 2019. He extended congratulations to Peter Stoicheff on his reappointment as president on behalf of the USSU. He also thanked Beth Bilson for her service as University Secretary. He thanked the USSU executive team for their remarkable jobs in their duties this year and on Council committees. He reminded Council that elections will take place in the New Year for USSU executive positions.

He highlighted four components of the "Path Forward," the strategic plan of the USSU, which will be posted on the USSU website. Mr. Ratt-Misponas read a poem available on the USSU Facebook site with regard to the students' holiday wish list, including, e.g. subsidies for open access education resources, adequate provincial operating funding, tuition waivers, and a reasonable and predictable tuition policy.

9.2 Report from the GSA

Alejandra Fonseca, VP of Student Affairs, on behalf of Mery Mendoza, President of the GSA wished happy holidays and presented the GSA report.

10. Academic Programs Committee

Dr. Susan Detmer, chair of APC presented three requests for decision and one report for information as provided in the agenda materials as follows.

Dr. Detmer presented a request to change the curriculum of the DVM program to move more para-clinical training earlier into the program to align with the recommendations of the most recent accreditation review. The number of contact hours was also updated.

10.1 Request for Decision: Curriculum Revision for Doctor of Veterinary Medicine (DVM) Program

(Detmer/Spurr): *It is recommended that Council approve the replacement program for the Doctor of Veterinary Medicine (DVM) Program, effective May 2020.*

CARRIED

Dr. Detmer presented a request for decision to change the admissions qualifications of the DVM program requiring that applicants have at least two years of full-time university courses to ensure that applicants are sufficiently prepared to succeed in the program. University Senate will be asked to confirm this decision at its April 25, 2020 meeting.

10.2 Request for Decision: Change to Admissions Qualifications – Doctor of Veterinary Medicine (DVM) Program

(Detmer/Spurr): *It is recommended that Council approve the proposed changes to the admissions qualifications for the Doctor of Veterinary Medicine (DVM) program, effective the 2021-22 admissions cycle.*

There was a question about whether these apparent restrictions to the admissions qualifications would allow for a holistic approach to assessing an applicant's suitability for the program. Dr. Detmer responded there was a thorough discussion on the topic at APC. Also, that in certain cases, applicants were encouraged to contact the college to have their particular circumstances considered. The wording was also revised to the satisfaction of the committee to allow for different semester systems in Alberta and British Columbia.

There was a question about the data supporting the suggestion that students would be better prepared if they have taken 2 years of fulltime undergraduate students. Dr. Chris Clark of WCVM was invited to respond to the question. He indicated that a review of the data had been completed. He reported that there is an increasing number of people in the applicant pool taking lower credit units in order to keep up their GPA. Of those students who have struggled in the program, several had not completed two full years of study before their being admitted. He also responded with regard to the issue of holistic admissions process that it is based 60% on academic marks, and 40% on panel-style interview. This new admissions process will level the playing field and ensure that a high level of academic performance is demonstrated.

CARRIED

Dr. Detmer presented a request for decision to change the admissions qualifications for the BSN in Nursing that would require that applicants to the program take an online test of non-academic competencies. University Senate will be asked to confirm this decision at its April 25, 2020 meeting.

10.3 Request for Decision: Change to Admissions Qualifications – Bachelor of Science in Nursing (BSN) Program

(Detmer/Spurr): *It is recommended that Council approve the proposed changes to the admissions qualifications for the Bachelor of Science in Nursing (BSN) program, effective the 2021-22 admissions cycle.*

There were questions on the level of detail included in the proposal, and significant weight placed on the online tool. There was a question of whether this motion could be tabled until more information was provided to Council.

Dr. Detmer responded that there was an exhaustive discussion at APC that included: what information would or could be gleaned from the test, implicit bias, accessibility of the test, and data security.

There was a question from the USSU president about whether there were student representatives on the committees and what concerns they might have raised. Dr. Detmer replied that there are graduate and USSU representatives on APC and that their concerns were heard. Dr. Hope Balinski of the College of Nursing also responded that there are students on the college's undergraduate education committee

and they understood importance of measuring non-academic competencies for success in clinical settings.

CARRIED

10.4 Report for Information: Change to the Bachelor of Science in Nursing (BSN) program – addition of NURS 206.1

Dr. Detmer reported that in keeping with the delegated approval to APC, APC had approved the addition of a course in Nursing to add clinical experience. The rationale is that it will better meet needs of students and partners in the health region.

11. Nominations Committee

Dr. Vicki Squires, chair of the Nominations Committee, presented two requests for decision.

11.1 Request for Decision: Nomination to the Recreation and Athletics Advisory Council

(Squires/Urquhart): *It is recommended that Council approve the nomination of Dr. David Blackburn, College of Pharmacy and Nutrition to serve as member of the recreation and athletics advisory council effective immediately and continuing until June 30, 2020.*

The chair called for nominations from the floor three times. There were none.

There was a point of order raised as to whether a vote was needed at Council because the MOU says that the Nominations committee appoints the individual. Dr. Squires responded that the Nominations Committee is considering the procedural issue but did not want to delay the process of selecting the RAAC member as the meetings commence in January.

CARRIED

11.2 Request for Decision: Nomination to the Academic Programs Committee

(Squires/Urquhart): *It is recommended that Council approve the nomination of Dr. Matthew Neufeld, Department of History, to serve as member of the academic programs committee effective immediately and continuing until June 30, 2021.*

The chair called for nominations from the floor three times. There were none.

CARRIED

12. Governance Committee

Dr. Stephen Urquhart, chair of the governance committee, presented two requests for decision and one request for input.

First, with regard to the coordinating committee terms of reference, they currently include a standing subcommittee. Years ago, this subcommittee used meet periodically with the Provost's Committee of Integrated Planning to facilitate the flow of information between Council and PCIP. This committee had not met in some time and PCIP is now and advisory committee to the provost. The governance committee discussed the work of this subcommittee, and met with the provost to discuss. It was agreed that there was a continued need for this subcommittee, but with a clearer role.

12.1 Request for Decision: Strategic coordination subcommittee terms of reference

(Urquhart/Mousseau): *It is recommended that Council approve the amendment of the Council bylaws by replacing the existing terms of reference for the Standing Subcommittee of the Coordinating Committee with the terms of reference for the Strategic Coordination Subcommittee as set out in the attachment.*

CARRIED

12.2 Request for Input: Principles for Federation and Affiliation with the University of Saskatchewan (USask)

Dr. Urquhart indicated that this is a request for input to solicit feedback from University Council on draft principles for establishing new federations or affiliations with the University of Saskatchewan. Following receipt of feedback, the draft principles would be revised and shared with the Board of Governors, Senate, and the federated and affiliated colleges for their input, and would be brought back to Council for approval.

The president of St. Andrews Lutheran College, on behalf of the college and of Emmanuel St. Chad thanked Council and the governance committee for bringing these principles forward. He suggested that having a specific location on the USask campus for coordination and communication would be beneficial.

There was a question about how shared support for the university's mission, vision and values would be demonstrated, and how this aligned with the statement about not requiring other institutions to ascribe to those values. Dr. Urquhart responded that the committee recognized this balance and suggested that we reflect on those values, work together where they are in alignment, and respect where they differ.

12.3 Request for Decision: Nomination to the Nominations Committee

(Urquhart/Mousseau): *It is recommended that Council approve the nomination of Dr. Rachel Engler-Stringer, Department of Community Health and Epidemiology, to serve as member of the nominations committee effective immediately and continuing until June 30, 2022.*

Chair called for nominations from the floor three times. There were none.

CARRIED

13. Teaching, Learning and Academic Resources Committee

Vince Bruni-Bossio of the teaching, learning and academic resources committee, presented one request for decision. He noted that in 2018 Council approved the SLEQ and that TLARC began working on a policy thereafter. The policy is meant to ensure clarity, transparency and fairness.

Dr. Patti McDougall provided background and overview of the policy document. She noted that the policy is within Council's purview and that the procedures are under the purview of her office. She gave a presentation [attached].

There was a question about the ownership and trusteeship for the data collected through the SLEF. Dr. McDougall responded that the SLEF policy should be considered alongside the university's data

management and stewardship policy. Moreover, colleges and departments are asked to set out guidelines as to how the SLEF data is gathered and stewarded.

There was a further question about what would be done with the data and a suggestion that there should be different policies for individual vs. aggregate data usage. Dr. McDougall replied that the uses of the data are bargained and are part of the tenure and promotion standards, and that the JCMA had been consulted in the development of the policy.

13.1 Request for Decision: Student Learning Experience Feedback Policy

(Bruni-Bossio/Jones): *It is recommended that Council approve the Student Learning Experience Feedback Policy.*

CARRIED

14. UPlan Update

Before addressing the UPlan update, the president thanked Carl Still and Bill Harrison for attending the meeting for the discussion of the principles for federation and affiliation. He said we are fortunate to have such partnerships within the province, and that it is a unique ecosystem to that of any other province. He acknowledged the good work that the colleges do and the fact that we are improved by our association with them.

The president reminded Council that when the plan was drafted, it was agreed that we would devise an outward looking plan, one that could not be transposed on any other university, and that in the genre of plans, ours would be distinctive. He reflected that the plan is a sort of social contract, and in some ways is a restatement of the people's university. He noted that when we describe our needs to funders, for instance in alignment with the provinces' plan for growth, our plan intersects and supports the government's plan. This is a measure of proof that we were forward-looking in the plan.

President Stoicheff remarked that the nature of this report on the plan was more in the nature of storytelling, but that not every report would be in this form. Sometimes it will be reported on the basis of data and analysis. This report is based on feedback from all the leaders of academic units and administrative units on examples of how they are showing progress against the goals, commitments and guideposts in the plan. A website is going to be devised that will capture continual progress on the plan.

President Peter Stoicheff and Provost Tony Vannelli presented an update on our progress on the University Plan 2025 [attached]. The provost informed Council that the measurement of progress against the plan would also be data driven. In February or March there would be another report, and then annually in June after that [Table 1. Action 3].

There was a round of Q&A considering the following.

Whether the projects can be mapped geographically and visually. The provost and president agreed.

With a local university it is challenging to move to the international stage. What short term strategies are we employing? The provost responded that mobility agreements, work-study placements, international training of students for graduate and undergraduate students, and federal government funding prospects are just some of the opportunities being explored.

There was a comment that the plan should better emphasize the importance of climate action, and that phraseology on the topic was taken for granted. The president reminded Council that sustainability was one of the guiding principles behind the plan, and that it was reflected in the "weave". He also reminded Council of the presentation that Dr. Creed gave a few month ago, the task force that had been established, and the special advisor role that had been created.

There was a comment that the plan needed buy-in from the ground-up, in addition to support from leadership and our outside partners, and that incentives are needed to ensure that this would be possible. By way of example that this plan was not just a plan belonging to the university leadership, the president reminded Council that the MOUs with FSIN, the Prince Albert Grand Council, STC, and MNS were all invitations to the university. Furthermore, that faculty are also incentivised because they want to make a difference in their respective communities. People come here [to USask] because they want their academic work to make a positive impact.

15. Other business

None.

16. Question period

None.

17. Adjournment

(Urquhart): The meeting adjourned by motion at 5:00pm.

Table 1. Action items

No	Page	Date	Action	Responsible
1	p.2 s.7	Dec 18/19	Present information on the university's Indigenous procurement strategy & policy	Greg Fowler
2	p.3 s.8	Dec 18/19	To post the 2018/19 resource allocation online	Provost Vannelli
3	p.7 s.14	Dec 18/19	To report back to Council on progress on the university plan in March 2020, and annual in June	Provost Vannelli

Attachments

1. Appendix A – Attendance from the meeting of December 19, 2019
2. Appendix B – Student Learning Experience Feedback Policy and Procedures
3. Appendix C – UPlan update – Delivering on our Commitments

Next meeting January 16, 2020 – Please send regrets to michelle.kjargaard@usask.ca.

Deadline for submission of motions to the coordinating committee: December 24, 2019.

COUNCIL ATTENDANCE 2019-2020

Attendnace Summary - Voting Participants

Name	Sept 19	Oct 17	Nov 21	Dec 19	Jan 16	Feb 20	Mar 19	Apr 16	May 21	June 18
Aitken, Alec	R	P	P	P						
Alcorn, Jane	A	A	A	A						
Berry, Lois	R	P	R	P						
Blakley, Jill	R	P	R	P						
Boland, Mark	P	P	P	P						
Bonham-Smith, Peta	P	P	P	P						
Brook, Ryan	P	P	P	R						
Brothwell, Doug	R	P	P	R						
Bruni-Bossio,Vince	A	P	R	P						
Buhr, Mary	P	R	R	P						
Burgess, David	P	P	P	P						
Card, Claire	P	P	P	P						
Carter, Mark	P	P	P	A						
Chernoff, Egan	A	A	A	A						
Chibbar, Ravindra	P	R	P	P						
Crowe, Trever	P	P	P	P						
D'Eon, Marcel	P	P	A	P						
Dawson, DeDe	P	P	P	R						
de Boer, Dirk	P	P	R	P						
Delbaere, Marjorie	P	R	R	P						
Deters, Ralph	P	P	P	P						
Detmer, Susan	P	P	P	P						
Dick, Rainer	P	P	P	P						
Dobson, Roy	P	R	P	P						
Downe, Pamela	P	P	R	P						
Elias, Lorin	P	P	P	R						
Engler-Stringer, Rachel	P	R	P	P						
Eskiw, Christopher	A	A	A	A						
Fonseca, Alejandra	P	P	P	P						
Flynn, Kevin	P	P	R	P						
Foley, Sarah	P	R	P	P						
Fotohui, Reza	R	P	R	P						
Freeman, Doug	R	R	P	P						
Gabriel, Andrew	A	P	A	P						
Gillis, Glen	P	P	P	P						
Gjevre, John	P	R	A	P						
Harrison, William	A	A	A	P						
Henry, Carol	R	A	P	A						
Illing, Kate	A	R	A	A						
Jamali, Nadeem	P	P	P	P						
Jensen, Gordon	P	R	A	P						
Jones, Paul	R	P	P	P						
Just, Melissa	R	R	P	P						
Kalra, Jay	P	A	P	R						
Kelly, Timothy	P	P	P	P						
Khandelwal, Ramji	P	R	P	P						
Klassen, Lauren	A	A	A	A						
Ko, Seok-Bum	P	P	R	R						
Kresta, Suzanne	P	R	A	A						
Kumaran, Arul	P	A	P	A						
Lamb, Eric	P	P	P	P						
Lane, Jeffrey	P	A	P	P						
Langhorst, Barbara	R	R	R	P						
Lanovaz, Joel	P	P	P	P						
Lindenschmidt, Karl	P	P	A	P						
London, Chad	P	P	P	P						
Luke, Iain	R	A	R	R						
Macfarlane, Cal	A	R	A	A						

Name	Sept 19	Oct 17	Nov 21	Dec 19	Jan 16	Feb 20	Mar 19	Apr 16	May 21	June 18
MacLean, Jason	R	A	A	R						
Manley-Tannis, Richard	P	R	P	A						
Markham, Taylor	A	A	A	A						
McEwen, Alexa	A	R	R	P						
Mousseau, Darrell	P	P	P	P						
Murphy, JoAnn	P	P	P	P						
Neufeld, Matthew	P	P	P	P						
Newman, Kagan	A	A	A	A						
Papagerakis, Petros	A	A	P	P						
Phillipson, Martin	P	P	P	P						
Pocha, Sheila	P	A	A	A						
Poettcker, Grant	A	A	A	A						
Power, Sarah	A	A	A	A						
Prytula, Michelle	P	R	P	P						
Racine, Louise	R	R	R	R						
Reaser, Isaac	A	A	n/a-resigned as of Nov 2019 and replaced by Celeste Robillard							
Risling, Tracie	P	P	R	R						
Robillard, Celeste	n/a	n/a	A	R						
Sarty, Gordon	P	P	P	P						
Saxena, Anurag	A	P	A	P						
Shevyakov, Alexey	P	A	P	R						
Shin, Hyunjung	P	P	P	R						
Singh, Jaswant	A	P	P	P						
Smith, Charles	P	A	A	A						
Smith, Preston	R	A	P	R						
Smith, Martha	P	P	P	P						
Soltan, Jafar	P	P	P	P						
Sommerville, Kara	P	R	P	R						
Spurr, Shelley	P	P	P	P						
Squires, Vicki	P	A	P	P						
Stoicheff, Peter	P	R	P	P						
Stuart, Glenn	P	P	A	P						
Swidrovich, Jaris	P	R	P	R						
Urquhart, Stephen	P	P	P	P						
Vannelli, Tony	P	P	P	P						
Waldner, Cheryl	P	P	P	P						
Walker, Keith	P	R	P	P						
Willenborg, Christian	P	R	R	P						
Willness, Chelsea	P	P	n/a-resigned as of Oct 31, 2019 and will be part of non-voting as of Jan 1, 2020							
Willoughby, Keith	P	P	P	P						
Wilson, Jay	P	P	P	P						
Wilson, Lee	P	A	P	P						
Woods, Phil	P	P	P	P						
Wotherspoon, Terry	P	P	P	P						
Yao, Yansun	Sabbatical (Sep-Dec 2019)									
Zello, Gordon	R	R	R	P						
Zhang, Chris	P	P	P	P						

COUNCIL ATTENDANCE 2019-2020

Attendance Summary - Non-voting participants

Name	Sept 19	Oct 17	Nov 21	Dec 19	Jan 16	Feb 20	Mar 19	Apr 16	May 21	June 18
Bilson, Beth	P	P	P	P	Jan 2020-B. Bilson has moved from the OUS Dept					
Chad, Karen	P	P	P	P						
Doig, Anne	n/a	n/a	P	P						
Ezekwesili, Chiamaka	n/a	n/a	A	A						
Fowler, Greg	A	P	A	A						
Isinger, Russell	P	P	P	P						
McDougall, Patricia	P	A	P	P						
Mendoza, Mery	P	P	P	R						
Morrison, Karen	R	P	P	P						
Munoz Pimentel, Carlos	P	P	P	R						
Osburn, Debra Pozega	P	P	R	P						
Ottmann, Jacqueline	P	A	A	A						
Ratt-Misponas, Regan	P	A	P	P						
Still, Carl	P	R	R	P						
Willness, Chelsea	n/a-C. Willness started with OUS Jan 1, 2020									

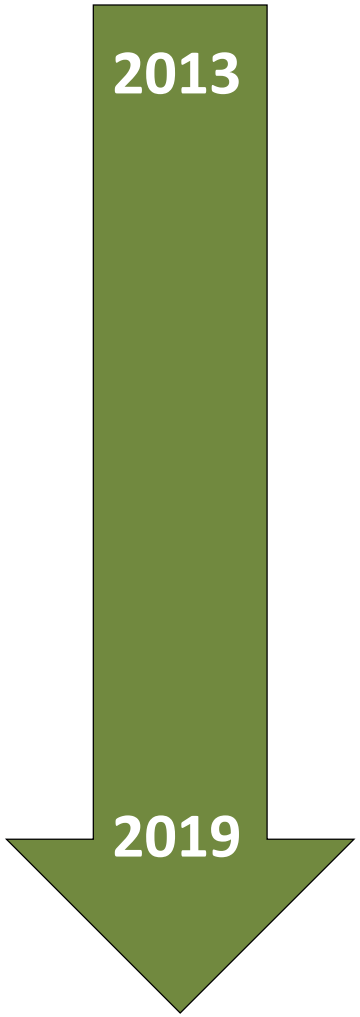
Student Learning Experience Feedback

Policy and Procedures

University Council

December 19, 2019

TLARC Teaching Quality Journey



- Began Policy Work
- Review of how we conceptualize and assess teaching quality
- Developed the Teaching Quality Framework
- Literature and best practice review
- Developed principles for instrument and system
- Reviewed available instruments, selected and piloted SLEQ
- Approval of SLEQ as institutionally supported instrument
- Implemented SLEQ

✓Policy and Procedure Development

Working Group members

- Alison Muri
- Jim Greer
- Jay Wilson
- Trish Dowling
- Marcel D’Eon,
- Aaron Phoenix
- Len Findlay
- Lachlan McWilliams
- Chelsea Willness
- Marie Battiste
- Sean Maw
- USSU and GSA representatives
- Vice Provost TLSE
- Director, Teaching and Learning Enhancement.

Consultation

- Joint Committee for the Management of the Agreement (JCMA)
- Associate Deans Academic
- Department Heads and/or Undergraduate Chairs and/or Chairs of Curriculum Committees currently using SLEQ
- Departmental Administrators currently using SLEQ
- Policy Oversight Committee
- USSU and GSA executives

Policy

- Purpose
- Principles
- Policy
- Responsibilities

Policy

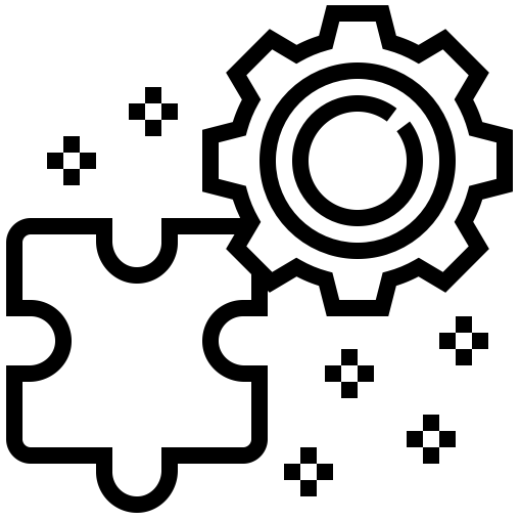
- Purpose
- Principles
- Policy
- Responsibilities

Faculty member/educator – data custodian

Department head/Dean - data steward

Vice-Provost Teaching Learning and Student Experience – data trustee

Procedures



- Instrument question limit and order
- Process for requesting change to core questions
- Open and close dates for end of course feedback
- Reporting instrument feedback
- Changes/correction to numeric feedback
- Removal of student comments
- Department administrator dual role
- Release of results
- Aggregate data usage

Motion

That Council approve the Student Learning Experience Feedback Policy

UNIVERSITY PLAN 2025

Delivering on our commitments

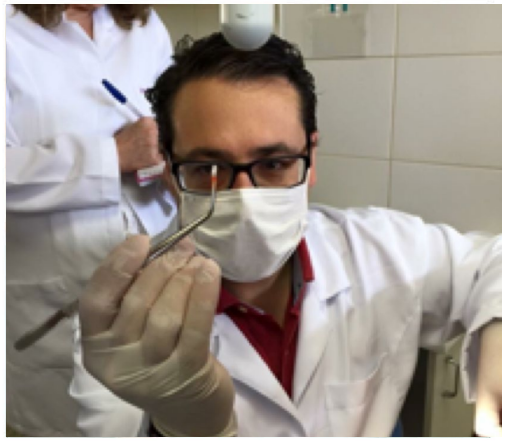
Courageous Curiosity

Empower a daring culture of innovation with the courage to confront humanity's greatest challenges and opportunities.

Unleash Discovery

Inspire students, faculty, and staff with the responsibility and expectation to be boldly curious as learners, researchers, scholars, and artists.

As we aspire for growth in scholarly influence, visibility, and impact, we are developing new avenues of our discovery mission:



DENTISTRY

The creation of a Bachelor of Science in Dentistry

Recruitment and expansion of research capacity and productivity.

MEDICINE

Dedicated strategies to support our researchers in achieving improved funding success.

EDUCATION

Transforming our understanding of teaching and learning.

Embrace Interdisciplinarity

Cement and catalyze interdisciplinary endeavour as a core premise of learning, research, scholarship, and creativity.

UNIVERSITY LIBRARY
Encouraging cross-discipline scholarship in a state-of-the-art centre for digital research.

PHARMACY AND NUTRITION
An interprofessional approach to address the opioid crisis.

Improving crop quality through collaborative research.


Boundless
Collaboration
Invigorate the impact of collaboration
and partnership in everything we do.
UNIVERSITY OF SASKATCHEWAN
CAMPUS
1061 Central Avenue

Enrich Disciplines

Build, enhance, and sustain research, scholarly and artistic strength central to vibrant collaboration within and among all disciplines and academic units.

ENGINEERING
Reimagined first year program

.

EDUCATION
Creating new streams of teaching and research that are accessible for educators

.

AGRICULTURE AND BIORESOURCES
Preparing students to be leaders in the bioeconomy.

ARTS AND SCIENCE
Enriching programming by better equipping students for the future.

Align Structures

Ensure that academic, administrative, and physical infrastructure enable collaborative opportunities for all students, faculty, and staff.

UNIVERSITY LIBRARY

Combining library supports into the graduate student experience in partnership with CGPS.

VPFR, TLSE and UR

Prince Albert campus is a shining example of administrative and academic alignment and collaboration.

Embolden Partnerships

Foster, expand, and diversify local, national, and global partnerships—with governments, businesses, and civil society in rural, northern and urban communities—rooted in reciprocal learning and the co-creation of knowledge.

JSGSPP

International partnerships for understanding global public policy and to ensure international experiences for students.

EDWARDS SCHOOL OF BUSINESS

Partnerships with regional colleges for smoother learning journeys for students.

Experience Reconciliation

Nurture the humility, ethical space, and conviction central to embedding the spirit and practice of reconciliation in all our engagement efforts while enabling the balance of relationships between Indigenous and non-Indigenous peoples.

JSGSPP
Creating ways for researchers to come together in support of Reconciliation.

VPFR
Practicing Reconciliation through Indigenous partnerships.

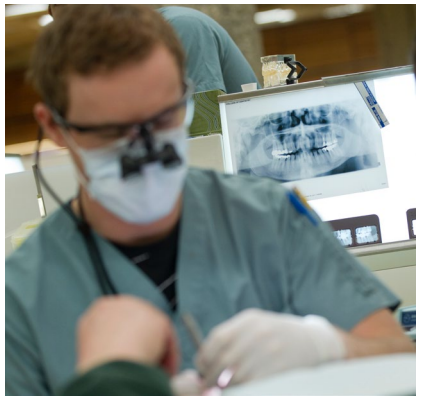
NURSING
Engaging for Reconciliation.

Inspired Communities

Inspire the world by achieving meaningful change with and for our communities.

Amplify Value

Distinguish the university as an essential community partner by growing and documenting our impact on prosperity, quality of life, social resilience, ecological sustainability, and student success in rural and northern Saskatchewan, in our towns and cities, and in communities across Canada, and globally.



DENTISTRY

Dental care and services provided by USask on-reserve and in Northern communities

MEDICINE

Medical residents with sustained, value-added, presence in Saskat-chewan communities.

EDWARDS SCHOOL OF BUSINESS

Encouraging an entrepreneurial mindset in our youth.

LAW

Enhancing the quality of life in Saskatoon through community-engaged scholarship.

Embrace Manacihitowin (Respect one another)

Strengthen bonds of respect, trust, and shared benefit with Indigenous communities in Saskatchewan, across Canada, and globally.

KINESIOLOGY
Creation of Indigenous Youth Leadership programming with Saskatoon Tribal Council.

JSGSPP
Working with Northern communities to drive practical policy research.

EDUCATION
Partnering with Indigenous peoples to create indigenous programs.

Uplift Indigenization

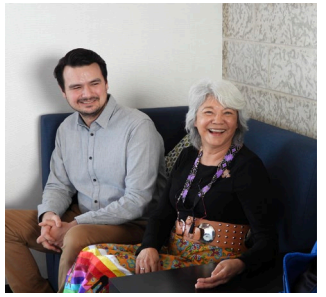
Expand the understanding and practice of Indigenous ways of knowing and concepts of innovation.

KINESIOLOGY
The creation of a required course in Indigenous ways of knowing and understanding “wellness”.

ARTS AND SCIENCE
Concerted efforts to recruit Indigenous faculty.

MEDICINE
Creating an Indigenous-led research agenda.

TLSE
Integrating Indigenous knowledges and experiences directly into our learning charter.



VPIE
Fundamental and systemic change to Indigenize standards for promotion and tenure.

Recognizing and supporting the unique orientation of Indigenous scholarship and research.

PRESIDENT'S REPORT TO UNIVERSITY COUNCIL January 2020

To begin my first report of 2020, I want to wish you all a happy new year and a successful winter term. I thank Council for its interest and input in the University Plan (UPlan) presentation delivered at the last Council meeting in December. The response and feedback have been extremely beneficial in moving the plan forward into its second year. What has become clear is the institutional ownership of this plan and the evident momentum that will ensure its overall success.

I would also like to thank Council for the congratulatory remarks made during the December meeting. It is a privilege to be able to continue serving as president and to continue to support the work of Council, and of the university community as a whole.

Over the coming years, I see USask's role as crucial in driving local, provincial, national and international innovation agendas. Our university has a strong record of being innovative, can become stronger and more deliberate in driving innovation within the region, and can be recognized by our stakeholders and constituents for playing this important role. We have recently seen exceptional accomplishments that will continue to move the innovation agenda forward. Examples include global genome research breakthroughs; engagement initiatives such as the signing of a number of MOUs with community partners; and the announcement of numerous research initiatives that involve a wide variety of topics, including Indigenous health, renewable energy, climate change, humanities and fine arts initiatives, and cybersecurity. I also look forward to the great things that will come from our signature areas of research in water and food security, as well as from our world-class research facilities – the Fedoruk Centre, VIDO-Intervac, and the Canadian Light Source – all having received renewed funding in 2019.

On a final note, I want to extend my deepest sympathies to the members of our university community affected by the recent Ukraine International Airlines Flight 752 crash. Our hearts and thoughts are with the victims and their families, friends and colleagues during this very difficult time. Global events often have local impact, and our campus community, like so many communities around the world and at other Canadian universities, is mourning. We are working to ensure our community has the supports needed. As we grieve and heal, I encourage you to talk to friends or family members about how you are feeling during this difficult time. I know the USask community will offer strong support to the many among us suffering from the impact of this tragedy.

AGENDA ITEM: 8.0

Provost's Report to Council

January 2020

GENERAL REMARKS

First, I want to begin by wishing the members of Council and the rest of the university community the very best in 2020.

This Winter term will be a very busy term with many activities managed by colleges and schools with support from the provost's office. I would like to highlight three key activities. First, colleges and schools are continuing to work in increasing collaboration to develop shared and interdisciplinary programs. Arts and Science has partnered with Medicine to create a new Biomedical Sciences program that is both shared in development and delivery as well as interdisciplinary. Engineering has also combined with Arts and Science to develop over the last year a new first engineering program delivery that will lead to more student success and learning in challenging engineering programs. The task force in Public Health has begun to consider new model and structure for delivering public health programs and research to have more impact. I will brief Council on progress of this work in the next month.

Second, university consultations with undergraduate and graduate students on tuition for the 2020-21 academic year will be taking place over the early part of 2020. College deans, school executive directors and the dean of CGPS will be undertaking these important consultations before tuition is finalized by the Board of Governors in March 2020.

Finally, it is important that we work together in stabilizing our budget to support the fundamental disciplines, professional programs, and research mission of the university. My office remains committed in supporting the academic mission of the university during these challenging times (not unique to the University of Saskatchewan only). Decanal leaders and all Vice-Presidents will need your cooperation and engagement to strengthen our academic mission mapped out by our university plan that guides all our college and school plans.

INSTITUTIONAL PLANNING AND ASSESSMENT

Each year members of IPA, CGPS, and TLSE meet with deans and executive directors or their representatives to discuss possible tuition rates for the upcoming academic year. USask receives data for tuition and fees from U15 institutions in order to undertake a comparator analysis on similar programs. Relevant non-U15 comparators are also included, where applicable, to present a holistic picture on rates. This process sets the stage for colleges and schools to plan discussions for the upcoming year's tuition rates with students.

The Western College of Veterinary Medicine (WCVM) is exploring the possibility of creating new Doctor of Veterinary Medicine (DVM) seats at a differentiated tuition rate in order to address Alberta's decision to withdraw from the interprovincial agreement. New opportunities are being explored by the college to generate

a sustainable source of funding to ensure accreditation standards are met in the continued high quality delivery of western Canada's preeminent veterinary program.

The tuition rates are approved by the provost prior to reporting to the Board of Governors for information in March.

COLLEGE AND SCHOOL UPDATES

College of Dentistry

On November 30, 2019 the College of Dentistry's new Certificate in Dental Assisting (CDA) Program was granted three-year accreditation status from the Commission on Dental Accreditation of Canada. This decision allows those students who have successfully completed the CDA program and passed the National Dental Assisting Examining Board (NDAEB) Exam to register with their governing body, the Saskatchewan Dental Assisting Association. The three year accreditation period allows the College of Dentistry to maximize dental assisting student learning opportunities by integrating the CDA program with the DMD program, and to graduate the most qualified, practice-ready Registered Dental Assistants in Canada.

University of Saskatchewan Students' Union

As we enter the beginning of the second semester, the USSU is working on some of our signature events – of particular interest to University Council, of course, is the Undergraduate Project Symposium coming up on January 30th. This event showcases undergraduate research, which will be displayed in the North Concourse in Place Riel, and features cash prizes for some lucky undergraduate students.

We are also working on a Women in Leadership event and on our Experience in Excellence – teaching excellence event slated for the end of March.

We continue to provide significant funding for Campus Groups to support the full student experience and we work with our university partners on a continual basis to do our part to support students in all aspects of attending university. The USSU, for the second time this year, is hosting a Campus Club Week dedicated to giving students awareness on the types of clubs that exist for them to join. For the first time, the USSU is hosting a Campus Club Conference which will help groups build sustainability and find resources for their respective organizations.

Lastly, the USSU is proud to launch the First Year Students Ad-Hoc Committee which will work to develop a report on the experiences of first year students. University Students' Council struck this committee to ensure we were reaching out to this community earlier in their studies.

AGENDA ITEM: 9.2

University of Saskatchewan Graduate Students' Association

University Council Report, January 2020

Dear Members of University Council,

On behalf of the GSA executives, I wish you all a happy New Year and hope you enjoyed your holiday season. The GSA executives start the New Year organizing important events to benefit our graduate students and campus community. To that end we are working on three main objectives this month:

1. Winter orientation
2. Graduate Research Conference
3. Other

1. Winter orientation

We have many new graduate students joining the University of Saskatchewan from many different places within Canada and around the world. In reception of our new colleagues, the GSA is organizing a welcome winter term orientation. The main goal of this event is twofold. We want to welcome the new graduate students and help make them feel accepted and comfortable while also showing them the services the GSA and the University has to offer. This event will be held on Thursday, January 16th at the GSA commons. We have put together a resource checklist containing compressed information of the resources available for graduate students. This will be handed out during the orientation and we therefore encourage new faculty members and graduate students to attend. The resource checklist can be found on the GSA website: https://gsa.usask.ca/documents/important-Documents/resource-checklist-for-graduate-students.pdf

2. Graduate Research Conference (GRC) 2020

Every year, the GSA organizes the Graduate Research Conference and all graduate students are invited to participate, network, and discuss their research in a professional environment. This year, with support of CGPS, the GSA is proud to present the Graduate Student Research Conference, "Behavior, Society & Technology: A glimpse of current research approaches" to be held on **February 13th and 14th, 2020**. The GRC 2020 aims to bring together graduate students from a wide range of fields to be part of this opportunity and share their knowledge and expertise in different topics. We encourage all graduate students to submit an abstract and participate. The organizing committee is welcoming submissions from all graduate fields. The registration deadline is **February 1st** and we invite faculty members to encourage their graduate students and Post-Docs to participate in this free event.

3. Other

The GSA is also organizing the Three Minute Thesis competition and the Annual Gala.

Moreover, on behalf of the GSA, we want to thank USSU, ISSAC, the Director of Student Affairs, and all supporters of the Holiday Hangout. This collaborative initiative helped the University of Saskatchewan community to stay together in the cold holiday season and it was an opportunity to network and make new friends for those who arrived earlier to start their studies. We had a lot of positive feedback from different people and the GSA is glad to know that the Holiday Hangout helped the community to feel more engaged and included within our university. We will continue working on these and other coming events that support and celebrate the academic success of our graduate students and campus community as a whole. The GSA is open to discuss any concerns, ideas, and initiatives that faculty members and the campus community may have. The GSA executive committee is excited to start a new year with new ideas of new initiatives and we look forward to continued workings with each of you in this 2020 year.

Mery Mendoza
President, Graduate Students' Association

AGENDA ITEM NO: 10.1

UNIVERSITY COUNCIL

ACADEMIC PROGRAMS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY: Susan Detmer; Chair, Academic Programs Committee

DATE OF MEETING: January 16, 2020

SUBJECT: **Admissions Qualifications change – Master of Water Security (MWS) Program**

DECISION REQUESTED:

It is recommended:
That Council approve the proposed changes to the admissions qualifications for the Master of Water Security (MWS) program, effective the 2021-22 admissions cycle

PURPOSE:
Changes to admissions qualifications require approval by University Council and confirmation by University Senate.

CONTEXT AND BACKGROUND:

The College of Graduate and Postdoctoral Studies is proposing a change to admissions qualifications for the Master of Water Security (MWS) program. These changes are proposed as part of the strategic planning in the School of Environment and Sustainability as because of an opportunity to offer the MWS program at Beijing Normal University in China.

The change will require students applying for the MWS program to submit a written statement indicating why they want to join the program and to have completed a course at the undergraduate level (100-level or equivalent) in mathematics as well as one in statistics with at least 70% (USask grade system equivalent). An interview, either online or by another method, may be required.

These proposed changes are to ensure that students have the skills needed to be successful in the MWS program as they move forward toward the goal of moving to the option of offering this

program internationally. SENS has been considering how they could ensure students coming into the program at Beijing Normal University would be able to demonstrate that they had the required skills and interest to be able to complete the program.

APC reviewed this proposal at its December 18, 2019 meeting. The committee had concerns about how the possible interviews will be conducted and the impact it might have on applicants. Clarification was received that the purpose of the interview will be for students to be given an opportunity to provide additional information so that they could be added to the pool of acceptable candidates and not to weed people out. Concerns were also raised time zone differences and access to internet as an issue with online interviews, but these issues are already managed for international applicants to many USask programs.

In addition to these proposed change to the admissions qualifications for this program, curricular changes were proposed through University Course Challenge in December 2019 and were approved. These curricular changes are included in Attachment 2 and are for information only.

FURTHER ACTION REQUIRED:
University Senate will be asked to confirm this decision at its April 25, 2020 meeting.

ATTACHMENTS:

1. Change in Admissions Requirements for the Master of Water Security

2. (FOR INFORMATION ONLY) – Proposal for Academic or Curricular Change - Revision to Master of Water Security (M.W.S.)

UNIVERSITY OF SASKATCHEWAN
College of Graduate and Postdoctoral Studies
GRAD.USASK.CA

116, 110 Science Place
Saskatoon SK S7N 5C9 Canada
Telephone: **306-966-5751**
Facsimile: **306-966-5756**
Email: **grad.studies@usask.ca**

M E M O R A N D U M

To: Academic Programs Committee of University Council

Copy: Dr. Andrew Ireson, School of Environment & Sustainability

From: Martha Smith, Associate Dean, CGPS

Date: December 11, 2019

Re: Changes to Admission Requirements – Master of Water Security

---

As a result of strategic planning processes, as well as a partnership and opportunity to deliver the Master of Water Security (MWS) program at the Beijing Normal University in China, multiple changes to the MWS are being proposed. Curricular changes have been submitted to the December University Course Challenge process, and tuition changes will be considered as part of the Institutional Planning & Assessment tuition consultations early in the new year as they are unrelated to the curricular changes. The CGPS is requesting that APC recommend the proposed changes to admission requirements to University Council for approval.

The proposed changes are noted in red:

- a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study
- a cumulative weighted average of at least a 70% (~~U of S~~ USask 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. See the College of Graduate and Postdoctoral Studies Academic Information and Policies in this Catalogue for more information.
- For all students, a written statement of why they want to join the program; and an online or other interview may also be required.
- Students must have completed a course at the undergraduate level (100-level or equivalent) in both mathematics and statistics with at least 70% (USask grade system equivalent).

The Graduate Programs Committee approved the changes on December 5, 2019, and they were subsequently approved by the Executive Committee of CGPS on December 9, 2019.

Attached please find documentation specific to the proposed admission changes. The full proposal has also been provided as a supplementary document.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

UNIVERSITY OF SASKATCHEWAN
College of Graduate and Postdoctoral Studies
GRAD.USASK.CA

116, 110 Science Place
Saskatoon SK S7N 5C9 Canada
Telephone: **306-966-5751**
Facsimile: **306-966-5756**
Email: **grad.studies@usask.ca**

M E M O R A N D U M

To: Academic Programs Committee of University Council

Copy: Dr. Andrew Ireson, School of Environment & Sustainability

From: Martha Smith, Associate Dean, CGPS

Date: December 11, 2019

Re: Changes to Admission Requirements – Master of Water Security

---

As a result of strategic planning processes, as well as a partnership and opportunity to deliver the Master of Water Security (MWS) program at the Beijing Normal University in China, multiple changes to the MWS are being proposed. Curricular changes have been submitted to the December University Course Challenge process, and tuition changes will be considered as part of the Institutional Planning & Assessment tuition consultations early in the new year as they are unrelated to the curricular changes. The CGPS is requesting that APC recommend the proposed changes to admission requirements to University Council for approval.

The proposed changes are noted in red:

• a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study
• a cumulative weighted average of at least a 70% (~~U of S~~ USask 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. See the College of Graduate and Postdoctoral Studies Academic Information and Policies in this Catalogue for more information.
• For all students, a written statement of why they want to join the program; and an online or other interview may also be required.
• Students must have completed a course at the undergraduate level (100-level or equivalent) in both mathematics and statistics with at least 70% (USask grade system equivalent).

The Graduate Programs Committee approved the changes on December 5, 2019, and they were subsequently approved by the Executive Committee of CGPS on December 9, 2019.

Attached please find documentation specific to the proposed admission changes. The full proposal has also been provided as a supplementary document.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

The School of Environment and Sustainability discussed the following issue and resulting resolutions when making these revisions:
Issue: Type of student the program is attracting
Resolution: Faculty agreed that the original intention of offering an interdisciplinary program for both social science and natural science/engineering students must be maintained.
However, to ensure that students of all backgrounds would be successful in the program, a new admission requirement in mathematics and statistics was added.

The Graduate Programs Committee discussed the proposed language on the admission requirements informally in April 2019, and formally on September 30, 2019, and December 5, 2019. The Executive Committee of CGPS also discussed the language at their meeting on December 9, 2019. With each review, the proposed language was slightly modified to result in the proposed language that has been submitted to APC.

UNIVERSITY OF SASKATCHEWAN

Memorandum

To: **Academic Programs Committee (APC)**

CC: Heather Heavin, Chair, Graduate Programs Committee, CGPS

From: Trever Crowe, Chair, Executive Committee, CGPS

Date: December 9, 2019

Re: **Master of Water Security Program**

On December 9, 2019, the Executive Committee (EC) of CGPS considered a recommendation from the Graduate Programs Committee (CGPS) to approve the revisions to the Master of Water Security program.

In principle the EC voted in favour of the revisions to the Master of Water Security program (Newton/McIntyre/1 abstention – CARRIED) with a friendly amendment to change the Skype language to *…online conferencing platform or otherwise for a possible interview may be required.*

The attached appendix provides additional background for consideration. If you have any questions, please contact Dean Trever Crowe at trever.crowe@usask.ca or by phone at 966-5759.

/ll

UNIVERSITY OF SASKATCHEWAN
College of Graduate
and Postdoctoral Studies
GRAD.USASK.CA

116, 110 Science Place
Saskatoon SK S7N 5C9 Canada
Telephone: **306-966-5751**
Facsimile: **306-966-5756**
Email: **grad.studies@usask.ca**

M E M O R A N D U M

To: Executive Committee of CGPS

Copy: Dr. Andrew Ireson, Master of Water Security Program Coordinator, School of Environment and Sustainability

From: Graduate Programs Committee

Date: December 6, 2019

Re: Master of Water Security program modification

On September 30, 2019, and December 5, 2019, the Graduate Programs Committee considered revisions to the Master of Water Security Program. Some members of the Graduate Programs Committee had initially reviewed the proposal and provided feedback in April 2019.

The revised program removed the concentration options. Students will complete 30 credit units of coursework through a cohort-based modular delivery and wrap up the program with a 6 credit unit capstone project.

The program revisions resulted from the School of Environment and Sustainability's strategic planning process, as well as a partnership and opportunity to deliver this UofS program at Beijing Normal University in China.

The Graduate Programs Committee passed the following motion unanimously.

"*To recommend approval of the revisions to the Master of Water Security program.*"
Mendoza/Smith CARRIED

Based on University governance approval timelines, we request that programmatic changes be implemented effective May 1, 2020, admission changes be implemented for the 2020-2021 admission cycle, and tuition changes be implemented for September 2020.

Attached please find the full program proposal and supporting documents.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

Proposal for Academic or Curricular Change

Revision to
Master of Water Security (M.W.S.)

Submitted February 25, 2019
Resubmitted with revisions 20 September 2019
Revised 25 November 2019

UNIVERSITY OF SASKATCHEWAN
School of Environment and Sustainability
USASK.CA/SENS

Table of Contents

Proposal Identification

Title of proposal: Re-imagined Master of Water Security Degree

Degree(s): Master of Water Security (M.W.S.)

Field(s) of Specialization: Water Security

Level(s) of Concentration: The existing concentrations, i) Hydrology; ii) Hydrogeology; iii) Socio-hydrology, will be removed.

Option(s): N/A

Contact person(s) (name, telephone, fax, email): School of Environment and Sustainability
Dr. Marth Smith, Associate Dean, CGPS, 906-966-2229 (kelly.clement@usask.ca)

Proposed date of implementation: Due to special circumstances the Dean, CGPS and Registrar provided us permission to implement the changes for 2018/19 as they go through the approval process.

Proposal Document

1. **Academic Justification:**
   a. **Describe why the program would be a useful addition to the university, from an academic programming perspective.** This is a modification to an existing USask degree program that builds both disciplinary expertise, and awareness of and capability for interdisciplinary work. The Master of Water Security (M.W.S.) is a vital program to the university as water security is one of its six signature areas. The M.W.S. provides an alternative for students who are seeking professional degrees; the proposed changes to the program better prepare students with professional skills and experiences necessary to be successful in the workforce.

   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.** This program is designed to address one of the university's signature areas of research, water security, and is associated with the Global Institute for Water Security. USask is ranked #1 in water resources research in Canada, according to the 2017 Shanghai Academic Ranking of World Universities. Within SENS, water security is one of our core strengths, as reflected in our Strategic Plan (to 2025) with a goal to create and enhance internationally-sought after graduate programs in the areas of Water, Energy and Food Security in partnership with other units on campus. The revisions to the program come as a result of the work done on our strategic plan and a fledging partnership with Beijing Normal University in China to offer the USask M.W.S. program within China.

   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)** This program is open to all students interested in a graduate professional (courses and project) program. We continue to work to make our programs relevant to Indigenous and international students. With the changes to the program we hope to increase interest and accessibility to working professionals. The target for this program is 25 students/year.

d. What are the most similar competing programs in Saskatchewan, and in Canada? How is this program different? There are no known comparator programs in Saskatchewan. Please see Appendix A for other compartor programs in Canada and internationally. Our program is unique, in that it offers critical substantive knowledge and professional skills that will propel graduates to become leaders in their chosen careers.

2. Admissions:

a. What are the admissions requirements of this program?

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
2. a 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. See the College of Graduate and Postdoctoral Studies Academic Information and Policies in this Catalogue for more information.
4. For all students, a written statement of why they want to join the program; and an online or other interview may also be required.
5. Students must have completed a course at the undergraduate level (100-level or equivalent) in both mathematics and statistics with at least 70% (USask grade system equivalent).

3. Description of Program:

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

The mission of the M.W.S. program is to train the next generation of water scientists, engineers, managers and policy-makers to tackle the complex and interdisciplinary water problems of the future. Our vision is to be the best program of its kind in Canada—and be among the best internationally—with strong course content and high expectations for scholarship. A major reason for the proposed revisions is to increase the predictability of course offerings (by moving from different streams to a single stream with courses offered each year), to ensure we are covering the most important topics for water security within the course content and combining it in a way that allows students to see the synthesis between topics, and to offer real-world experiences through team-based projects that will be done in partnership with external agencies. We expect that graduates from the M.W.S. program may be job-ready for positions in government, industry and not-for-profit sectors and will also be sought-after students to go on to Masters (thesis based) or PhD programs at USask or elsewhere.

Within the scope of a professional-oriented Master's degree, graduates will have a solid understanding of current issues and methods in water security and will be capable of applying this understanding in practical or professional contexts.

As a project-based Master's degree, the program will provide graduates with a broader background in water security, with a much greater dependence on coursework and team-based projects within course offerings. Aside from research activities embedded within the coursework there will be less focus on preparing students to conduct independent study and research.

In line with the College of Graduate and Postdoctoral Studies policies on degree-level Learning Outcomes, the M.W.S. will be configured as follows (Table 1):

Table 1: M.W.S. Program Requirements

	Courses	Project	Total
Course units	30 cu	6 cu	36 cu required
Length	8 months	4 months	12 months required

- The project-based M.W.S. program includes 30 credit units of course work plus 6 credit units devoted to a team-based project. This team-based project will see the students work with a partner organization to foster project management and critical thinking skills. The project provides an opportunity for students to investigate applied topics in water security. Projects are interdisciplinary in scope and may include scientific, technical, social, economic, cultural, institutional, or other appropriate attributes of water security challenges. Through active hands-on experience, students will be well-equiped to begin a successful career in water science.

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 revised M.W.S. program will be taught using the principles of the 5E instructional model that will be delivered in a compressed course framework.

http://cognitiveperformancegroup.com

5E Instructional Model: Program development in SENS is guided by a belief that learners construct their own knowledge through experience. When learners encounter something new, they are able to connect it to previous understandings and can create new understandings as a result. Further, teaching and learning activities, course design, and more broadly, program design ought to be built on this core assumption about learning (also known as "constructivism"). This core assumption about learning shows respect for learners' past experiences, knowledge, and ways of knowing—a respect of fundamental importance for indigenization and reconciliation as well as for practitioners engaged in graduate study that advances their own professional competencies in their own contexts.

The active role of the instructor includes expert knowledge, especially where the instructor provides tools for problem-solving and inquiry-based learning. The active role of the learner relies on designs that create opportunities for students to engage with concrete experiences, reflective observation, abstract conceptualization, and active experimentation (aligned with Kolb's experiential learning cycle). The following model, known as the 5E Learning Model (originally a lesson planning model for science education developed in the late 1980s, having been adopted more broadly), provides more specific guidance and suggests ways forward for implementation of delivery where instructors are involved in face

to face instruction of students for intensive periods and in contact with students who are actively engaged in co-constructed learning with peers at other times.

Presented here as a linear process, the 5E model should also be understood as iterative and repeating, including at the level of even a 10-minute lesson plan. A single course can attend to the 5E model as a teaching and learning arc. At the program level, earlier emphasis is on "engage" where students situate themselves and their learning goals in comparison to the program-level competencies. Next, "explore", "explain", and "elaborate" can be achieved to an increasing standard as students progress through the program. Finally, "evaluate" occurs for students when they are judged to have completed the program requirements and presented their competence through culminating product or process. Cells in the following table are framed in terms of what the student does or can do at these levels and at the points of the 5-E Learning Model.

Table 2: The 5-E Learning Model

5-E Learning Model	Lesson Level	Course Level	Program Level
"Engage"	Access prior knowledge or experience of the topic, find personal relevance in the lesson topic	Connect prior learning to the learning required in the course, find personal relevance in the course	Recognize extents of prior learning as related to program-level competencies, identify relevant experiences, establish personal learning goals
"Explore"	Participate in or get actively involved in a problem or area of inquiry that forms the focus of the lesson	Participate in or get actively involved in learning activities designed to provide exploratory opportunities in the course	Participate in a range of learning activities designed to explore a breadth of problems and areas of inquiry, engaging in at least one to further depth
"Explain"	Describe what has occurred and/or been discovered via the preceding learning activity	Describe what has occurred and/or been discovered via the various learning activities in the course	Explain to a range of audiences the nature of a problem or area of inquiry
"Elaborate"	Connect that explanation to concepts, existing or emerging knowledges or ways of knowing	Explicate the meanings of course concepts, situate these in existing or emerging knowledges or ways of knowing	Analyse and bring critical synthesis to a problem or area of inquiry, extrapolating relevance to stakeholder groups
"Evaluate"	Present or demonstrate understanding for assessment against established criteria by others (feedback can be formative &/or summative)	Present or demonstrate knowledge, skills, values as per course learning objectives to instructor (feedback can be formative &/or summative, i.e., in the form of assignment and course grades)	Receive verification of program-level competencies achieved.

Compressed Course Framework: The approximately 39 hours required for each 3 credit unit course will be taught in roughly a two-week compressed format, for the majority of courses. Each course in the term will include a portion dedicated to a group term project; students will work together at the end of each term to complete this term project, incorporating concepts and ideas learned in all the courses that term. At the completion of the first two terms, students will be provided with short-courses that promote professional skills such as communication, leadership, entrepreneurship, project management, and others at the start of their 6 credit unit project course that they can then apply to their project. If a student must take a leave of absence that requires them to miss a course or a significant portion of the course, faculty will work with the student to find a suitable alternative. This could

include the following options: 1) review the course material independently and complete all the course assignments, independently, on a time line agreed with the course instructor or 2) complete the course the following year.

Proposed Course Sequence:

Term	Course number	Course
One	ENVS 990	Seminar Requirement
		Ethics Requirement
	ENVS 806	Field Skills in Environment and Sustainability
	GEOG 826	Fundamentals of Hydrology
	ENVS 805	Data Analysis and Management
	ENVS 815	Modelling for Water Security
	ENVS 829	River, Lake and Wetland Science
	ENVS 992	Term Project (weaved throughout above courses)
Two	ENVS 817	Fundamentals of Hydrogeology
	ENVS 816	Chemicals in Aquatic Systems
	ENVS 820	Water and Human Health and Wellbeing
	JSGS 870	Water Policy in an Age of Uncertainty
	ENVS 821	Sustainabile Water Resources
	ENVS 992	Term Project (weaved throughout above courses)
Three	ENVS 992	Project Course Requirement w Capstone Event

c. Provide an overview of the curriculum mapping.

The courses in the existing version of the M.W.S. were carefully reviewed through consultation with over 20 faculty members from across campus with expertise in various areas of water security. Discussions were held regarding the most important areas of water security and these discussions shaped the new courses in the proposed revised M.W.S. program.

d. Identify where the opportunities for synthesis, analysis, application, critical thinking, problem solving are, and other relevant identifiers.

See b above and note the addition of the term project in attached course syllabi. In addition, ENVS 992.6 Project in Environment and Sustainability will be a key point in the program for those in the Project options for synthesis, analysis and application of the concepts and skills learned in the program.

e. Explain the comprehensive breadth of the program.

UN-Water defines water security as “the capacity of a population to safeguard sustainable access to adequate quantities of and acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.”

USask's M.W.S. program trains students in science, social science, engineering, health, planning, and policy analysis to investigate water security issues of local to international consequence.

The M.W.S. is a cross-disciplinary, course and project-based professional-style program that can be completed in 12 months of full-time study (see Table 1). This program is intended to provide prospective and current environmental practitioners with a post-graduate learning opportunity in water security.

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.

See Table 3 for a breakdown of how the revised M.W.S. program addresses the 5 learning goals.

Table 3: Learning Charter's **5 Learning Goals**

	Description	Breakthroughs Seminar	Theoretical Courses	Field Schools	Leadership and Entrepreneurship Course	Team Based Project	Optional placement or practicum
Pursuit of Truth and Understanding	Critical thinking	X	X	X	X	X	X
	Multiple ways of knowing and learning	X	X	X	X	X	X
	intellectual flexibility		X	X	X	X	X
Pursuit of Knowledges	Depth of understanding in subject area	X	X	X		X	X
	Breadth of understanding how subject area intersects with related subject areas	X	X		X	X	X
	Understanding how ones subject area impacts communities	X		X	X	X	X
	Using and applying one's knowledge with respect to all individuals			X	X	X	X
Pursuit of Integrity and Respect	Exercising intellectual integrity and ethical behavior		X	X	X	X	X
	Recognizing and thinking through moral and ethical issues		X	X	X	X	X
	Recognizing the limits to ones knowledge, skills and understanding and acting in accordance with these limits			X	X	X	X
	Appreciate one's own worldview while showing respect for others' worldviews	X	X	X	X	X	X

Pursuit of Skills and Practices	Develop and apply research, inquiry, knowledge creation and translation skills			X	X	X	X
	Communicate clearly, substantively and persuasively in different contexts			X	X	X	X
	Locate, understand, evaluate and use information effectively, ethically, legally and with cultural appropriateness			X	X	X	X
Individual and Community Pursuits	Commit to positive growth and change for oneself and for local, national and global communites				X	X	X
	Acit with confidence and strength of purpose for the good of oneself and different communities			X	X	X	X
	Embrace responsibilities to oneself and others in ways that are authentic and meaningful			X	X	X	X
	Sharing knowledges and exercise leadership as acts of individual and community responsibility			X	X	X	X

g. **Describe how students can enter this program from other programs (program transferability).**
To truly gain all the benefits of the revised M.W.S. structure, students are expected to take all required courses when offered. Transfer students will not be accepted to the M.W.S. program.

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.**
The program will be monitored closely over the first three years using student satisfaction and employment data compiled from surveys and verbal feedback on a yearly basis. Faculty teaching in the program will also be requested to provide feedback given the changes in how the program is offered. Enrollment numbers and graduate rates will also be used to evaluate success. This program will be evaluated based on the metrics used to evaluate initiatives in the SENS's strategic plan.

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.** N/A

4. **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?**
   This program is a revised version of the existing M.W.S. program approved in 2015 and currently running. Students from other graduate programs on campus, both existing and new proposed programs, will benefit from courses in this program (i.e., the courses will be open to all eligible graduate students on campus, with eligibility determined based on having prerequisite knowledge for successful completion of the course. In particular, we expect that students in water-related thesis based programs will be interested in taking some of the courses to complete the requirements of their thesis degree programs). Students completing a M.W.S. program may choose to pursue thesis masters or doctoral programs here at the USask or at other institutions.

   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.**
   The decision to revise the M.W.S. program was made during M.W.S. Governance Committee meetings on November 10, 2017 and on April 13, 2018. The M.W.S. Governance Committee consists of faculty representatives from a number of partner units across campus (see Appendix B). In April 2018, a first draft of proposed revisions was circulated for comment to members of the M.W.S. Governance Committee by email, and then a second draft of proposed revisions was circulated for comment to faculty members with a connection to the M.W.S. (see Appendix C for those that participated (April and May emails) on drafts of the revised program). Over the summer, a series of "world café" meetings were held where faculty interested in water were invited to provide feedback and ultimately to co-develop and co-design the revised

M.W.S. program. A final ad hoc committee within SENS then met on August 15, 2018 to finalize the courses (see Appendix C for those that participated in creating the final draft of the revised program). Multiple email and in-person meetings to discuss the program also took place with the Acting Dean, College of Graduate and Postdoctoral Studies.

In a separate activity, starting in May 2018, meetings with IPA were held to discuss the tuition model for the revised program.

c. Provide evidence of consultation with the University Library to ensure that appropriate library resources are available.
No new resources are required as a result of the revisions to the program. No consultation with the University Library was conducted for this reason.

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

5. 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).
A faculty member is the M.W.S. Program Director and responsible for overseeing the program implementation, and recruiting and advising students; it is estimated that this faculty member spends about 15% of their time on these activities, as a yearly average. Furthermore, up to 7 faculty members are responsible for teaching the courses in the M.W.S. program; it is estimated that these faculty members spend about 15% of their time per course on a yearly average.

b. What courses or programs are being eliminated in order to provide time to teach the additional courses?
None; this is a revision to an existing M.W.S. program; any courses removed are being replaced on a 1:1 basis.

c. How are the teaching assignments of each unit and instructor affected by this proposal?
Teaching assignments should not be affected by this proposal. As SENS creates and implements new courses, we may need to teach the odd course as "overload" (e.g., School of Public Policy offering on Water Policy). However, as we fill the new positions within SENS and allow time for other participating units to make this part of their faculty's regular workload, we strive to make the entire program part of the normal workload.

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).
Yes, we need high quality "smart" classrooms to implement the course. With the upcoming move of SENS to WP Thompson, we will work to gain access to these types of

rooms that will become part of the renovated classrooms in WP Thompson. In the interim, we will need to make room requests each year as early as possible to ensure access to needed classrooms.

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.
At this time there is no distributed content in the program. In future, once the revised program is thriving, we will look to offering online courses.

f. If this is an interdisciplinary program, please indicate whether there is a pool of resources available from other colleges involved in the program.
Other colleges or schools who participate in teaching in the M.W.S. program will receive a portion of the net revenue, prorated based on a TABBS model that is designed specifically for this type of interdisciplinary, inter-unit collaborations.

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?
Small scholarships ($1,500/student for 5 students on an annual basis) are currently available for students in our professional programs. Applicants are assessed for scholarship funding based on merit. 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. In future, we will seek additional sources of funding, including donors, MITACs, Queen Elizabeth Scholars, and paid team or independent work placements.

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).
As with the current M.W.S. program, the revised program with fall under "Programs with Special Tuition Rates". SENS is working with IPA to finalize the tuition for the 12 month project-based program—we are projecting a 10% increase in tuition from our current tuition rate of $10,500 (domestic rate).

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).
Total cost of the program is $346,476. See Appendix D.

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?
The enrolment target for this program is 25 students. We estimate we will reach this target in 2020–2021. Minimum enrolment to break even on incremental costs is 16 students.

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?
The total tuition revenue is $356,079 based on enrolment targets (25 project-based). Based on the 15 current M.W.S. students, the incremental revenue is $183,915.

As all components of the program are "core" (i.e., required), there is no need to separate this revenue into core vs. electives.

l. 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 enrollment that we expect as a result of the redesign will lead to an incremental tuition revenue of $$183,915. The program is (and will be) financially sustainable, and represents an important alternative revenue stream for SENS. To breakeven on full costs, we require 24 students; however, based on incremental costs, the breakeven is 18 students.

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).
Total cost for the program is $346,476 which is less than the projected tuition revenue of $356,079 by $9,602. See Appendix D.

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. This proponents should also indicate any anticipated surpluses/deficits associated with the new program.
All funding sources will be the tuition revenue. Anticipated surplus is $9,602. See Appendix D.

Acknowledgements

The School of Environment and Sustainability would like to acknowledge the expertise and support of many faculty members and administrative personnel who participated in reimagining the M.W.S. program and creating this proposal. A special thank you to Andrew Ireson, M.W.S. Program Director, for his hard work and dedication to the program both to date and ongoing.

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**

UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

Room 323, Kirk Hall
117 Science Place
Saskatoon, SK S7N 5C8

Telephone: (306) 966-1985
E-mail: sens.info@usask.ca

MEMORANDUM

To: College of Graduate and Postdoctoral Studies
University Council

From: Irena Creed, Executive Director

Date: 31 January 2019

Subject: School Statement – Proposal for Revision of Master of Water Security Program

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

As the Executive Director of the School of Environment and Sustainability (SENS), I approve the revisions to the Master of Water Security (M.W.S.) program as outlined in this proposal. Many faculty from within and outside the School have participated in the reimagining of the program and we are proud and excited about the revisions.

The process followed to create this proposal is outlined in Section 4 of the preceding document, followed by a thorough review by the Executive Director, Assistant Director-Academic, M.W.S. Program Director, SENS Academic Programs Committee and a vote by SENS Faculty.

The School discussed the following issues and resulting resolutions when making these revisions:

- Issue: Type of student the program is attracting
  Resolution: Faculty agreed that the original intention of offering an interdisciplinary program for both social science and natural science/engineering students must be maintained. However, to ensure that students of all backgrounds would be successful in the program, a new admission requirement in mathematics and statistics was added.

- **Issue**: Concentrations – should the three concentrations in hydrology, hydrogeology and socio-hydrology be maintained?
  Resolution: Faculty agreed that the unpredictability of course offerings in each stream made it difficult for students to complete a given stream. To ensure stability, predictability, and quality of the M.W.S. program, the program with 3 streams (each with a suite of elective courses) was changed into a program with a slate of courses that each student will be required to complete (no electives).
- **Issue**: Experiential learning - should "real world" experiences be added to the program?
  Resolution: Based on the report *Humans Wanted* (RBC 2018) and reports from ECOCanada, a range of skills such as critical thinking, communication, collaboration, etc. are becoming more important than ever for new graduates. We included more training and options to develop these competencies. To ensure opportunities for students to develop these competencies, we changed the "thesis" project that was conducted under the supervision of an academic, to the following: (1) Cumulative team-based project will be completed at the end of each of the first two semesters under the supervision of the team of instructors for each semester and (2) A "team-based" project that will be completed under the supervision of external partners to the program from government and industry.
- **Issue**: English Language Proficiency Requirements – how can we ensure students have adequate communication skills entering the program.
  Resolution: Faculty agreed that there should be no change to the English Language Proficiency Requirements at this time – we are a nascent program and until we achieve our enrollment targets we will consider all qualified students. We will conduct interviews prior to accepting the students into the program, and we will provide opportunities for students to access writing and speaking supports that are offered on campus.
- **Issue**: Classroom Availability for Compressed Courses
  Resolution: Faculty are aware that this may be a problem area. SENS will arrange a meeting with room scheduling to discuss. This will also be in consideration as we work with Space Planning on the updates to the WP Thompson Building.
- **Issue**: Compressed Courses Impacting Other Students
  Resolution: SENS is discussing ways to minimize the impact compressed courses will have on students outside the program who would like to take the course and are looking at more compressed and blended format options across programs.

Thank you for reviewing this proposal. Please advise if you require any additional information.

Sincerely,

Dr. Irena Creed
Executive Director

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.

1. **Excerpts from the SENS Strategic Plan to 2025**

COMMITMENT 3: Boundless Collaboration

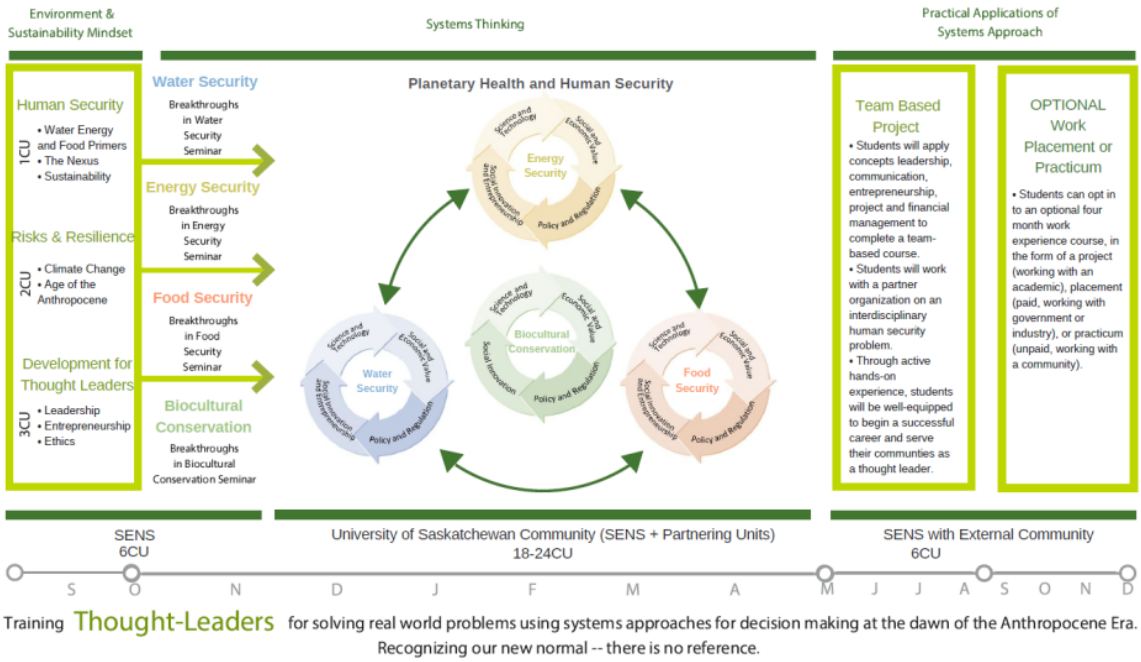
Presently, SENS offers internationally-recognized, *un*disciplinary graduate programs that place our students in highly-sought occupations following graduation. We will enhance the university's reputation by expanding these programs through collaborative research networks and teaching initiatives that will foster Planetary Health and Human Security.

GOAL 8: Create and Enhance Internationally-Recognized and Sought-after Undergraduate Certificates, and Graduate and Postdoctoral Programming

Our enhanced Undergraduate Certificate in Sustainability will serve as an *un*disciplinary backbone for all undergraduate environmental programs (Figure 1). We will collaborate with other units to reimagine and deliver new proposed professional master's (course, project) programs paralleled with potential research master's and doctoral programs in the Water-Energy-Food Nexus and Biocultural Conservation (Figure 2). We will partner with other units to design and deliver an Executive Master's program in Planetary Health. We will create and honour strategic agreements with international institutions to offer our master's and PhD programs in their countries (e.g. China). SENS will create an opportunity for graduate students and postdoctoral scholars to participate in an entrepreneurship competition to solve real world problems.

Teaching and research are intimately connected – faculty must be engaged in state-of-the-art research to provide the highest quality experience to students as mentors and teachers. In turn, quality of teaching and research drive recruitment of high caliber students. A consistent focus on these fundamentals will establish a stable framework for long-term growth in external (e.g. rankings, legacy donations) and internal measures (e.g. retention of top-tier faculty). We will determine who are aspirational peers are and strive to meet and/or surpass them in our teaching and research.

Figure 2: Programs in Planetary Health and Human Security at the Water-Energy-Food Nexus



2. Letters of Support

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

SENS, Karsten Liber, Executive Director (Interim)
Department of Civil, Geological and Environmental Engineering, College of Engineering
Department of Geography and Planning, College of Arts & Science
Global Institue for Water Security
Johnson-Shoyama Graduate School of Public Policy

UNIVERSITY OF SASKATCHEWAN
School of Environment and Sustainability
USASK.CA/SENS

School of Environment and Sustainability

Room 323, Kirk Hall
117 Science Place
Saskatoon, SK S7N 5C8

Telephone: (306) 966-1985
E-mail: sens.info@usask.ca

MEMORANDUM

To: College of Graduate and Postdoctoral Studies
University Council

Date: 19 September 2019

Subject: Confirmation of support for revision of Master of Water Security Program

As Executive Director (Interim) of the School of Environment and Sustainability (SENS), I am pleased to confirm my approval and support of the proposed changes to our Master of Water Security (MWS) program. The MWS program embodies a key partnership between SENS and the Global Institute for Water Security and is an important part of our school's academic programming. As such, we in SENS are committed to revising this program to offer the best program possible that suits the needs of both our students and our academic and community partners.

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

Karsten Liber, Ph.D.
Executive Director (Interim) and Distinguished Professor
School of Environment and Sustainability
University of Saskatchewan

UNIVERSITY OF SASKATCHEWAN
College of Engineering
DEPARTMENT OF CIVIL, GEOLOGICAL AND ENVIRONMENTAL ENGINEERING
ENGINEERING.USASK.CA

3B48.3 Engineering Building, 57 Campus Drive
Saskatoon SK S7N 5A9 Canada
Telephone: **306-966-5336**
Fax: **306-966-5205**

February 7, 2019

Andrea Eccleston, M.A.
Strategic Projects Specialist
School of Environment and Sustainability

Dear Andrea:

Re: Support for the revised Master of Water Security program

I am writing to express the support of the Department of Civil, Geological, and Environmental Engineering for the revised Master of Water Security program. Several of our faculty were part of the consultation process, helped to shape the new program, and expect to participate in its delivery. The single stream approach of the revised program is a significant improvement in that it provides a clearer focus and better predictability of course offerings for students. We also believe that engineers interested in expanding their perspective and knowledge in water security will find the program particularly beneficial to their professional engineering practice.

We look forward to having the revised MWS program available to our graduates.

Sincerely,

Leon D. Wegner, Ph.D., P.Eng.
Professor and Head

UNIVERSITY OF SASKATCHEWAN
College of
Arts and Science
DEPARTMENT OF GEOGRAPHY AND PLANNING
ARTSANDSCIENCE.USASK.CA

125 Kirk Hall, 117 Science Place
Saskatoon SK S7N 5C8 Canada
Telephone: 306-966-5654
Facsimile: 306-966-5680
Email: geography.planning@usask.ca
Web: artsandscience.usask.ca/geography

14 February 2019

Dr. Irena Creed, Executive Director
School of Environment and Sustainability

Re: Master of Water Security Program

Dear Irena:

The Department of Geography and Planning is pleased to offer its support for the revised Master of Water Security (M.W.S.) professional degree program in the School of Environment and Sustainability. The University of Saskatchewan is a global leader in water research and the revised M.W.S. program will play an important role in preparing students interested in professional degrees with the skills and experience to be leaders in the workforce.

The Department is committed to offering GEOG 827 Principles of Hydrology on a regular basis, as an option for MWS students. The Department is also in the process of submitting GEOG 826 Fundamentals of Hydrology for regularized offering as part of the MWS program. This course will be offered on a regular basis and supported by MWS program resources, with the instructor determined jointly by Department and the School.

Several faculty members from the Department were involved in the early stages of review and revision of the M.W.S. program, and our faculty have contributed to the delivery of M.W.S courses. We are interested in continued engagement in M.W.S. program delivery and look forward to the possibility of extending our course offerings as the program grows. Our faculty members are also excited about the opportunity to work with M.W.S. students, serving as mentors and project supervisors.

We look forward to the revised M.W.S. program and to collaborating with the School on the development of thesis-based graduate programming in water security in the near future.

Sincerely,

Bram Noble, PhD
Acting Department Head

Subject: FW: Support letter for MWS
Date: Friday, September 20, 2019 at 2:28:53 PM Central Standard Time
From: Armbruster, Holly
To: Pytlyk, Carolyn
Attachments: Slide1.jpeg

From: Famiglietti, Jay <jay.famiglietti@usask.ca>
Sent: Sunday, March 3, 2019 8:47 PM
To: Eccleston, Andrea <andrea.eccleston@usask.ca>; Creed, Irena <irena.creed@usask.ca>
Cc: Pomeroy, John <john.pomeroy@usask.ca>; Ireson, Andrew <andrew.ireson@usask.ca>; McDonnell, Jeffrey <jeffrey.mcdonnell@usask.ca>; Al Pietroniro <al.pietroniro@canada.ca>
Subject: Support letter for MWS

March 4, 2019

Prof. Irena Creed
Executive Director
School of Environment and Sustainability

Re: Support for the revised Master of Water Security Program

Dear Irena:

I am pleased to write on behalf of the Global Institute of Water Security (GIWS) to express our support for the revised Master of Water Security program. Members of GIWS were integral in the proposal for the initial program and several of the us, including myself, were part of the consultation process and helped to shape the revised program. In addition a number of GIWS faculty will be involved in the delivery.

The proposed revisions to the program make it unique and improve the program significantly for the students. The improvements mean greater predictability of course offerings, a strong experiential learning component throughout the program and an innovative delivery method.

We look forward to collaborating with the School on the delivery of this revised program.

Sincerely,
Jay Famiglietti
Executive Director, Global Institute for Water Security

Jay Famiglietti
Canada 150 Research Chair in Hydrology and Remote Sensing
Executive Director | Global Institute for Water Security | www.usask.ca/water
Professor | School of Environment and Sustainability | Department of Geography and Planning
University of Saskatchewan
(306) 966-8014

JOHNSON SHOYAMA
GRADUATE SCHOOL OF PUBLIC POLICY
UREGINA USASK

University of Saskatchewan Campus
142 - 101 Diefenbaker Place,
Saskatoon, SK S7N 5B8 Canada
Telephone: 306-966-1984
Facsimile: 306-966-1967
www.schoolofpublicpolicy.sk.ca

January 21, 2019

Dr. Irena Creed
Executive Director
School of Environment and Sustainability
University of Saskatchewan

Dear Dr. Creed:

I am pleased to write on behalf of the Johnson Shoyama Graduate School of Public Policy (JSGS) in support of the revised Master of Water Security (MWS) program offered by the School of Environment and Sustainability (SENS).

With the University of Saskatchewan (USask)'s 2025 Strategic Plan urging new and collaborative programming, we commend SENS for leading the way with changes to the MWS program. This program is a first in a suite of professional graduate programs being developed in collaboration with JSGS, the Edwards School of Business, and the Colleges of Law and Arts and Sciences. We see the revised MWS as a prototype for these new programs and a model that other academic units can emulate.

We appreciate the extensive consultation with JSGS during the development of the revised MWS program, and we are committed to offering the three-credit-unit course, JSGS 870: Water Policy in an Age of Uncertainty, as part of the program. Additionally, the involvement of the instructor (Professor Jeremy Rayner) in the development at all stages and the delivery of the program demonstrated genuine collaboration.

The MWS program features several components that make it unique: a multi-disciplinary teaching team, a strong experiential learning component throughout the program, and improved integration of the social sciences with the natural sciences (an area where students could truly benefit). Initial feedback from the student cohort is that they find the program demanding but enjoyable – elements essential to engaged student learning.

As SENS continues their efforts to develop energy and food security programs, of which policy will be a key component, JSGS looks forward to continued collaboration to ensure comprehensive and well-rounded programming for USask students.

We wish you the best as you go through the university approval process for the revised MWS program.

Sincerely,

Murray Fulton
Director, USask Campus
Johnson Shoyama Graduate School of Public Policy

MEF/alm

Consultation Forms

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

2. **Complete Catalogue Entry with Changes in Red**

Water Security

Would you like to apply to this program?

Application information

Website: ~~Global Institute for Water Security~~ School of Environment and Sustainability (https://sens.usask.ca/programs/professional-degrees/master-water-security.php)

Program Requirements

Master of Water Security (M.W.S.)

The Master of Water Security (M.W.S.) is an ~~cross-disciplinary~~ interdisciplinary project-based program that focuses on a holistic approach to water security. The program requires: ~~This multidisciplinary program offers students the following three concentrations:~~

~~1.~~

~~1. Hydrology~~
~~2. Hydrogeology~~
~~3. Socio-hydrology~~

Admission Requirements

- a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study
- a cumulative weighted average of at least a 70% (~~U of S~~ USask 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. See the College of Graduate and Postdoctoral Studies Academic Information and Policies in this Catalogue for more information.
- For all students, a written statement of why they want to join the program; and an online or other interview may also be required.
- Students must have completed a course at the undergraduate level (100-level or equivalent) in both mathematics and statistics with at least 70% (USask grade system equivalent).

Degree Requirements

- GPS 960.0
- GPS 961.0 if research involves human subjects
- GPS 962.0 if research involves animals subjects
- total of ~~30 credit units including the following~~ 36 credit units as follows:
  - ENVS 990.0 - Seminar in Environment and Sustainability (in course build include a sub-title: Breakthroughs in Water Security)
  - ENVS 806.3 – Field Skills in Environment and Sustainability (in course build include a sub-title: Water Security Research)
  - ~~GEOG 427.3~~
  - GEOG 826.3 – Fundamentals of Hydrology
  - ~~GEOG 827.3 – Principles of Hydrology~~
  - ENVS 805.3 – Data Analysis and Management
  - ENVS 815.3 (proposed new #) – Modelling for Water Security
  - ENVS 816.3 (proposed new #) – Chemicals in Aquatic Systems
  - ENVS 817.3 (proposed new #) – Fundamentals of Hydrogeology
  - ENVS 820.3 (proposed new #) – Water and Human Health and Wellbeing
  - ENVS 821.3 – Sustainable Water Resources
  - ~~ENVS 827.3~~
  - ENVS 829.3 (proposed new #) – River, Lake and Wetland Science
  - JSGS 870.3 – Water Policy in an Age of Uncertainty
  - ENVS 992.6 – Project in Environment and Sustainability (in course build include a sub-title: Team Based Project in Water Security)

- ~~A minimum of 6 credit units of restricted electives from a single concentration~~
- ~~A minimum 3 credit units chosen in consultation with and with approval from the Program Director~~

~~Concentrations~~

~~Hydrology~~

- ~~CE 415.3~~
- ~~CE 464.3~~
- ~~CE 834.3~~
- ~~CE 840.3~~
- ~~ENVS 805.3~~
- ~~ENVS 813.3~~
- ~~ENVS 823.3~~
- ~~ENVS 824.3~~
- ~~ENVS 825.3~~
- ~~ENVS 826.3~~
- ~~GEOG 827.3~~
- ~~TOX 843.3~~

~~Hydrogeology~~

- ~~CE 834.3~~
- ~~CE 850.3~~

- ~~ENVS 813.3~~
- ~~ENVS 826.3~~
- ~~ENVS 805.3~~
- ~~GEOE 375.3~~
- ~~GEOE 412.3~~
- ~~GEOL 413.3~~
- ~~SLSC 821.3~~

~~Socio-hydrology~~

- ~~AREC 430.3~~
- ~~CHEP 802.3~~
- ~~ENVS 805.3~~
- ~~ENVS 807.3~~
- ~~ENVS 811.3~~
- ~~ENVS 823.3~~
- ~~ENVS 832.3~~
- ~~JSGS 807.3~~
- ~~JSGS 863.3~~
- ~~PUBH 815.3~~
- ~~RRM 312.3~~

3. Course Proposal Forms

Please see Appendix E for the following Course Proposal or Modification Forms and course syllabi.

- ENVS 815.3 (proposed new #) – Modelling for Water Security
- ENVS 816.3 (proposed new #) – Chemicals in Aquatic Systems
- ENVS 817.3 (proposed new #) – Fundamentals of Hydrogeology
- ENVS 820.3 (proposed new #) – Water and Human Health and Wellbeing
- ENVS 829.3 (proposed new #) – River, Lake and Wetland Science
- ENVS 992.6 – Project in Environment and Sustainability: Team Based Project in Water Security

Appendicies

Appendix A: Sample of Comparator Programs – Information Compiled Summer 2018

University of British Columbia Faculty of Applied Science		
1 year Coursework only (39 credit units)	**Master of Engineering Leadership in Integrated Water Management** https://www.grad.ubc.ca/prospective-students/graduate-degree-programs/master-of-engineering-leadership-integrated-water-management Program Info: https://apscpp.ubc.ca/programs/mel/integrated-water-management/ **Tuition: $**28,652	**Program Description:** The Master of Engineering Leadership (MEL) in Integrated Water Management is designed for engineers and environmental science graduates who want to develop and lead advanced and sustainable water management initiatives. Participants of the program will learn how to apply physical, chemical and biological unit operations and processes to water resources, and will become conversant with regulatory and environmental frameworks. **Additional Notes:** in partnership with the business school, offering PD classes
University of Waterloo 1. Faculty of Applied Science https://uwaterloo.ca/discover-graduate-studies/programs/civil-engineering-masc-water 2. School of Environment, Resources and Sustainability (Collaborative Water Program) https://uwaterloo.ca/graduate-studies-academic-calendar/environment/school-environment-resources-and-sustainability/master-environmental-studies-mes-social-and-ecological-sustainability-water#master's-research-paper 3. Department of Earth and Environmental Sciences https://uwaterloo.ca/graduate-studies-academic-calendar/science/department-earth-and-environmental-sciences/master-science-msc-earth-sciences-water		
1. Full-time and part-time Optional Thesis No CUs listed 2. & 3. Course-based, research-paper option	**1. Civil Engineering- MASc Water** **https://uwaterloo.ca/discover-graduate-studies/programs/civil-engineering-masc-water** **Tuition:** Domestic: $2926/term International: $8702/term **2. MES in Social and Ecological Sustainability – Water**	**1. Program Description:** N/A **2. & 3.** **Program Description:** This degree is offered through the Collaborative Water Program. This program, jointly offered by

(collaborative master's research program) 12–16 months full time (Note: course requirements determined as 1.0 and 0.5 unit weights for courses. Require min. five 1.0 unit weight equivalents.)	**3. MSc in Earth Sciences – Water** **Tuition:** Domestic: $2254/term International: $7042/term https://uwaterloo.ca/finance/student-financial-services/tuition-fee-schedules/fee-schedule-graduate-students-fall-2017	a range of departments across several academic faculties, promotes the development of interdisciplinary perspectives on water. Collaborative Water Program students complete their specialist training in their respective home departments, while working with colleagues from a variety of other departments in core interdisciplinary courses (WATER 601 and WATER 602). **Additional Information:** Note: University of Waterloo has a Collaborative Water Program that offers 13 master's degree programs (thesis or research project-based) that specialize in water.
University of British Columbia Faculty of Land and Food System http://mlws.landfood.ubc.ca/		
Full-time or Part-time 1 Year Major Project required (33 credit units)	**Master of Land and Water Systems** http://mlws.landfood.ubc.ca/ **Tuition:** $19,737	**Program Description:** The 12-month, professional Master of Land and Water Systems program provides students an opportunity to obtain science-based skills, training and knowledge in the area of Land and Water Systems to address the emerging environmental issues of food security, maintenance of ecological services, restoration of degraded lands, climate change adaptation, and resource conservation. **Additional Notes:** Because this is a professional degree, a Master's thesis is *not required*. Instead, students carry out a major project throughout the 12-month duration of the program under the co-supervision of a UBC Faculty Member and a Professional Advisor. *There is no designated classroom time.*
McGill University Department of Bioresource Engineering http://www.mcgill.ca/iwrm/iwrm-program/program-curriculum		

1 Year Course-based (45 credit units)	**Integrated Water Resources Management Program** https://www.mcgill.ca/iwrm/iwrm-program/program-curriculum **Tuition:** Domestic $9500 International $19454	**Program Description:** This non-thesis Master's in IWRM is offered by the Department of Bioresource Engineering. In this program students are offered the unique opportunity to study the various biophysical, environmental, legal, institutional, and socio-economic aspects of water use and management in an integrated context. The integrated perspective ensures that social, economic, environmental as well as technical dimensions are all taken into account in the management and development of water resources. This is a one-year, non-thesis program that leads to the Master of Science in Integrated Water Resources Management degree. **Additional Notes:**
Oxford University Department of Geography and the Environment https://www.ox.ac.uk/admissions/graduate/courses/msc-water-science-policy-and-management?wssl=1		
Full-time 1 Year Coursework and dissertation required (no CUs listed)	**MSc in Water Science, Policy and Management** **https://www.ox.ac.uk/admissions/graduate/courses/msc-water-science-policy-and-management?wssl=1** **Tuition:** Domestic £18,455 or $31,198 CDN International £24,910 or $42,110 CND	**Program Description:** The MSc in Water Science, Policy and Management aims to equip the next generation of water professionals with the blend of skills necessary to make a significant contribution to sustainable water management pathways across competing priorities of water for ecosystems, food, energy, economic growth and human consumption. **Additional Notes:** The course comprises eight core modules within three thematic areas – water science, water and society, and water management. These modules are assessed by written examination. You also study two electives which are each assessed through a 4,000-word essay. You will also write an individual dissertation of 15,000 words.

Additional Links for Possible Comparator Programs:

https://www.mastersportal.com/disciplines/124/hydrology-water-management.html

https://www.cuahsi.org/community/graduate-programs-in-water-science/category/masters

https://www.un-ihe.org/msc-programmes

http://watercentre.org/our-services/

Appendix B: M.W.S. Governance Committee – 2017-2018
(Group in place during meetings listed in Section 4)

Yanping Li, SENS (Chair)
Irena Creed, SENS
Tim Jardine, SENS
Matt Lindsay, Geology
Jeff McDonnell, SENS/GIWS
Kerry McPhedran, Engineering
Robert Patrick, Geography and Planning
Graham Strickert, SENS
Howard Wheater, SENS/GIWS

Appendix C: Consultation List

April 26, 2018 Email and May 16, 2018 Follow Up Email
Baulch, Helen - SENS
Brinkmann, Markus - SENS
Creed, Irena - SENS
Hecker, Markus - SENS
Ireson, Andrew - SENS
Jardine, Tim - SENS
Jones, Paul - SENS
Li, Yanping - SENS
Liber, Karsten - TOX
Lindenschmidt, Karl-Erich - SENS
Lindsay, Matt - GEOL
McDonnell, Jeffrey - SENS
McPhedran, Kerry - ENG
Morrissey, Christy - BIOL
Patrick, Robert - GEPL
Pomeroy, John – GEPL
Razavi, Saman - SENS
Strickert, Graham - SENS
Whitfield, Colin - SENS

"World Café" Meetings – Invite List; Participants in Yellow; Email Responses in Green

Name	Email	MWS Advisory	SENS	GEPL	Civil, Geo & Enviro Eng	Geological Sciences	Biology	Other
Aitken, Alec	alec.aitken@usask.ca			X				
Barbour, Lee	lee.barbour@usask.ca				X			
Baulch, Helen	helen.baulch@usask.ca		X					
Bedard-Haughn, Angela	angela.bedard-haughn@usask.ca	Soil Science						
Bradford, Lori	Lori.bradford@usask.ca							X
Brinkmann, Markus	markus.brinkmann@usask.ca		X					
Butler, Sam	sam.butler@usask.ca					X		
Chutko, Krystopher	krys.chutko@usask.ca			X				
Creed, Irena	irena.creed@usask.ca	X	X					
de Boer, Dirk	dirk.deboer@usask.ca			X				
Elshorbagy, Amin	amin.elshorbagy@usask.ca				X			

Ferguson, Grant	grant.ferguson@usask.ca				X			
Fonstad, Terry	terry.fonstad@usask.ca				X			
Guo, Xulin	xulin.guo@usask.ca			X				
Hecker, Markus	markus.hecker@usask.ca		X					
Helgason, Warren	warren.helgason@usask.ca				X			
Hudson, Jeff	jeff.hudson@usask.ca						X	
Ireson, Andrew	andrew.ireson@usask.ca	X	X					
Jardine, Tim	tim.jardine@usask.ca	X	X					
Jones, Paul	paul.jones@usask.ca		X					
Kells, James	jim.kells@usask.ca				X			
Li, Yanping	yanping.li@usask.ca	X	X					
Lindenschmidt, Karl-Erich	karl-erich.lindenschmidt@usask.ca		X					
Lindsay, Matt	matt.lindsay@usask.ca	X				X		
Martz, Lawrence	L.Martz@USask.CA			X				
McDonnell, Jeffrey	jeffrey.mcdonnell@usask.ca	X	X					
McPhedran, Kerry	kerry.mcphedran@usask.ca	X			X			
Morrissey, Christy	christy.morrissey@usask.ca		X				X	
Noble, Bram	b.noble@usask.ca			X				
Patrick, Robert	robert.patrick@usask.ca	X		X				
Pomeroy, John	john.pomeroy@usask.ca			X				
Rayner, Jeremy	Jeremy.rayner@usask.ca							X
Razavi, Saman	saman.razavi@usask.ca		X					
Strickert, Graham	graham.strickert@usask.ca	X	X					
Wegner, Leon	leon.wegner@usask.ca				X			
Westbrook, Cherie	cherie.westbrook@usask.ca			X				
Whitfield, Colin	colin.whitfield@usask.ca		X					
Wilson, Ken	ken.wilson@usask.ca						X	

Email Follow up after "World-Café Meetings"

From: Martin, Jennifer
Sent: Wednesday, July 18, 2018 4:33 PM
To: Creed, Irena <irena.creed@usask.ca>; Baulch, Helen <helen.baulch@usask.ca>; McDonnell, Jeffrey <jeffrey.mcdonnell@usask.ca>; Ireson, Andrew <andrew.ireson@usask.ca>; Li, Yanping <yanping.li@usask.ca>; Strickert, Graham <graham.strickert@usask.ca>; Lindenschmidt, Karl-Erich <karl-

erich.lindenschmidt@usask.ca>; Razavi, Saman <saman.razavi@usask.ca>; Colin Whitfield <colin.whitfield@usask.ca>; Jardine, Tim <tim.jardine@usask.ca>; paul.jones@usask.ca; Hecker, Markus <markus.hecker@usask.ca>; Brinkmann, Markus <markus.brinkmann@usask.ca>; robert.patrick@usask.ca; Morrissey, Christy <christy.morrissey@usask.ca>; Pomeroy, John <john.pomeroy@usask.ca>; McPhedran, Kerry <kerry.mcphedran@usask.ca>; Lindsay, Matt <matt.lindsay@usask.ca>; Aitken, Alec <alec.aitken@usask.ca>; Noble, Bram <b.noble@usask.ca>; Wilson, Ken <ken.wilson@usask.ca>; Hudson, Jeff <jeff.hudson@usask.ca>; Helgason, Warren <warren.helgason@usask.ca>; Chutko, Krystopher <krys.chutko@usask.ca>; xulin.guo@usask.ca; Martz, Lawrence <l.martz@usask.ca>; Westbrook, Cherie <cherie.westbrook@usask.ca>; dirk.deboer@usask.ca; Barbour, Lee <lee.barbour@usask.ca>; Elshorbagy, Amin <amin.elshorbagy@usask.ca>; Ferguson, Grant <grant.ferguson@usask.ca>; Fonstad, Terry <terry.fonstad@usask.ca>; Kells, Jim <jim.kells@usask.ca>; leon.wegner@usask.ca; Butler, Samuel <sam.butler@usask.ca>; Bedard-Haughn, Angela <angela.bedard-haughn@usask.ca>; Bradford, Lori <lori.bradford@usask.ca>; Rayner, Jeremy <jeremy.rayner@usask.ca>; Bharadwaj, Lalita <lalita.bharadwaj@usask.ca>; sens_faculty@usask.ca; Baulch, Helen <helen.baulch@usask.ca>; Jones, Steven <steven.jones@usask.ca>; Rayner, Jeremy <jeremy.rayner@usask.ca>; Fulton, Murray <murray.fulton@usask.ca>
Cc: Creed, Irena <irena.creed@usask.ca>; Martin, Jennifer <jennifer.martin@usask.ca>
Subject: MWS Small Group Discussions

This message is sent on behalf of Irena Creed, Executive Director, School of Environment and Sustainability:

Good afternoon everyone,

Thank you to all who participated in the MWS Small Group discussions regarding the re-imagined Masters of Water Security (MWS) program. The sessions were very informative and essential to the design of the enhanced MWS. Thank you to all who were able to attend or provided feedback in other ways.

Throughout the course of these small group discussions, we arrived at a consensus as to what the enhanced MWS program would look like, which resulted in the development of the attached document "*Enhanced MWS Program*"

We have allocated course units under each theme: Seminar (0cu), Concepts (6cu), Tools & Techniques (12cu), Water & Health (6cu), Water and Policy Management (6cu), Entrepreneurial Project (6cu), and the optional Work Placement or Practicum (6cu). We will look for opportunities to offer more flexible 1, 2, and 3 cu offerings.

a. Please identify specific topics under at course that you would like covered. The present course titles are placeholders and we need to identify topics under each title.
b. Please identify which course or a topic within a course that you are interested and able to instruct in the 2018-2019 academic year or thereafter and whether you would do this as a part of your normal assignment of duties or overload teaching.

To keep momentum going forward and to see if we can input new courses and new topics this academic year, we would appreciate your feedback by July 27.

Jennifer

Jennifer L Martin, Executive Assistant
School of Environment and Sustainability
University of Saskatchewan
Room 327, Kirk Hall, 117 Science Place
Saskatoon, SK S7N 5C8
Ph: 306-966-8431

SENS Ad Hoc MWS Committee Meeting – August 18, 2018
Markus Brinkmann
Irena Creed
Andrew Ireson
Graham Strickert
Yanping Li
Saman Razavi

Appendix D: Budget Information

University of Saskatchewan
School of Environment & Sustainability
Masters of Water Security degree program
Projected Revenue and Expenditures based on assumptions listed below

				Full Cost Yr. 1 2020/21	Incremental Revenue / Expenditures Yr. 1 2020/21
Tuition Revenue to the university			$	356,079	183,915
Expenditures					
	0.15 FTE	Program director	$	23,965	0
	7 @ 0.15	Faculty time		161,073	0
	0.15 FTE	Graduate secretary		10,902	0
	0.15 FTE	Academic coordinator		17,487	0
	0.25 FTE	Work placement coordinator		19,506	19,506
$3,750	4 Tashis	Teacher Assistantships		15,000	15,000
		Salary & Benefits -sub-total	$	247,931	34,506
		Operating costs		10,000	10,000
		Scholarships		7,500	7,500
		Indirect Costs - TABBS		81,045	33,300
		Non-salary - sub-total	$	98,545	50,800
Total expenditures			$	346,476	85,306
Revenue over expenditures - surplus (deficiency)			$	9,602	98,609

ASSUMPTIONS:			Yr. 1 2020/21	
Course plus project				
	Tuition $	$	11,561	Tuition increase - 10% projected
	# students		25	
	% of International students		40.0%	
	Int'l differential		1.58	

Appendix E: Course Proposal and Modifcation Forms and Syllabi

UNIVERSITY OF SASKATCHEWAN

New Graduate Course Proposal GSR 400.1

Course Information

Please append the Course Outline (Syllabus), including a separate Undergraduate Course Outline (Syllabus) if required. A syllabus template is available at **usask.ca/cgps/forms.php**

College	Department/Unit
SENS	NA
Authorizing Unit Head	**Authorizing Unit Head Signature**
Dr. Karsten Liber	

INFORMATION REQUIRED FOR COURSE AND PROGRAM CATALOGUE

Label and Course Number		Course Title			
ENVS 815.3		Modelling for Water Security			
Total Course Hours	**Lecture**	**Seminar**	**Lab**	**Tutorial**	**Other**
39	39				
Weekly Course Hours	**Lecture**	**Seminar**	**Lab**	**Tutorial**	**Other**
19.5	19.5				

Term(s) in which course will be offered: ○ Term 1 ○ Term 2 ◉ Term 1 or 2 ○ Term 1 and 2

Course is to be offered: ◉ Annually ○ Biennially ○ Alternate Years ○ Other

Prerequisite(s) or restriction(s)
Undergraduate degree in engineering or natural sciences

If there are prerequisites, who can waive them: Department / Instructor
Instructor

Catalogue Description (not more than 50 words)
An overview of the fundamentals of hydrologic modelling from our perceptions of the behavior of watershed systems to developing and testing watershed simulation models. Theory and numerical implementation of model calibration approaches are taught. Includes an introduction to multi-objective optimization and different approaches to sensitivity and uncertainty analysis of hydrologic models.

Tuition code and any additional class fees:	Number of credit units:	Can this course be repeated for credit?
TC 31	3	○ Yes ◉ No

Are there any existing courses that should be set up as equivalent or mutually-exclusive? Specify:
No

CHECKLIST

- Course objectives need to be clearly stated
- Description of and Activities for Evaluation must be listed
- Course Outline (syllabus) with Reading List must be included
- Percentage of Total Mark for each evaluation listed
- Professor must be a member of the Graduate Faculty

If undergraduate lectures are included, also submit the Undergraduate Course Outline (Syllabus) and include information on what additional activities make this a graduate level course. For guidelines, see 'Undergraduate Component of Graduate Courses' under 'Forms for Graduate Chairs' at **usask.ca/cgps/forms.php**

EXAM EXEMPTION

Grade Mode: ○ Pass/Fail (P/F) ◉ Percentage/Numeric ○ Completed Requirements/In Progress/Not Completed Requirements (CR/IP/F)

Will there be a final exam for this course: ○ Yes ◉ No

If there is no final exam or if the final examination is worth less than 30% of the final grade, provide a brief statement which explains why a final examination is inappropriate for this course.
This is an advanced, non-traditional course designed for students to become familiar with the state of the art in hydrologic modelling and systems analysis. It blends the advanced theories with computer programming and computational analysis. Therefore, a standard final examination will not be appropriate to evaluate students' grasp of the materials. For evaluation, students need to show what they have learned through a set of carefully designed assignments and a project, which assess their understanding of the theories, their abilities to implement the theories, and their abilities to interpret the results.

Rationale

What is the rationale for introducing this course

SENS has revised it's Master of Water Security degree. This course has been created specifically to provide knowledge and skills relevant to this program.

Impact of Course

Are the programs/courses of other academic units/Colleges affected by this new course (possible duplication)?

○ Yes ◉ No

If yes, please list:

Were any other academic units asked to review or comment on the proposal?

○ Yes ○ No If yes, please attach correspondence

Will the offering of this course lead to the deletion or modification of any other course(s)?

○ Yes ◉ No

If yes, please list:

Course(s) for which this graduate course will be a prerequisite?

NA

Is this course to be required by your graduate students, or by graduate students in another program?

◉ Yes ○ No

If yes, please list:

Required for students in the MWS program.

Enrolment

Expected Enrolment
25

From which colleges/programs:
SENS

Resources

Proposed instructor(s) (Please include qualifications):
Dr. Saman Razavi
Saman Razavi (University of Saskatchewan) is a hydrologist, water resources engineer, and systems scientist by training, specializing in modelling and management of water systems. His overarching research goal is to enhance our ability to predict future water resources and to thereby deliver innovative solutions in support of decision and policy making. Central to his research program is transdisciplinarity and integration to enable feedbacks between different water-related systems, particularly natural and human-driven systems. He has published 33 peer-reviewed journal papers, one peer-reviewed commentary, one book chapter, and (co-)authored 110+ presentations at national and international conferences/meetings. He is the Principal Investigator of the Integrated Modelling Program for Canada (IMPC, https://gwf.usask.ca/impc/), Chair of the American Geophysical Union (AGU)'s Technical Committee on Hydrologic Uncertainty (http://hydrouncertainty.org/), Associate Editor of the Journal of Hydrology, and Editorial Board Member of Environmental Modelling & Software. He has received a Water Security Research Excellence Award from the University of Saskatchewan and the Editors' Choice Award from Water Resources Research.

How does the department plan to handle the additional teaching or administrative workload:
It will be part of the regular assignment of duties.

Are sufficient library or other research resources available for this course:
Yes

Are any additional resources required (library, audio-visual, technology, lab equipment, lab space, etc.):
No

Declaration

This course will conform to the academic requirements and standards for graduate courses, including the rules of Student Appeals in Academic Matters (usask.ca/university_secretary/council/reports_forms/reports/12-06-99.php) and Academic Integrity and Student Conduct (usask.ca/university_secretary/honesty/).

The signature of the Dean of your College signifies that the necessary resources are either available or shall be supplied by the College/Department budget.

Authorizing College Dean/Head	Signature	College Approval Date
Dr. Karsten Liber	K. Liber	19 September 2019

ENVS 815.3
MODELLING FOR WATER SECURITY

School of Environment and Sustainability
Term 1, 2018–19

UNIVERSITY OF SASKATCHEWAN

Course Coordinator: Saman Razavi — 1020, Global Institute for Water Security
Saman.razavi@usask.ca — 306-966-2923

Course times: October 29th to November 9th - 9:30am to 3:00pm.
Course notes: See course website http://bblearn.usask.ca
Assessment:

Attendance and In-Class Participation	10%
Assignments	70%
Term Project	20%

Prerequisites: Undergraduate degree in engineering or natural sciences

Enrollment limit: 15

Course Description

This course provides an overview of the fundamentals of hydrologic modelling from our perceptions of the behavior of watershed systems to developing and testing watershed simulation models. Theory and numerical implementation of model calibration approaches, including local and global optimization, are taught. An introduction to multi-objective optimization and different approaches to sensitivity and uncertainty analysis of hydrologic models is included.

Learning Outcomes

Upon completion of the course, students will be able to:

- Demonstrate an understanding of how watershed systems work
- Carry out model calibration and estimate behavioral model parameters
- Apply a range of performance metrics for model evaluation and diagnostic testing

Course Outline

Most days will begin with a lecture (~1.5 hours). This will be followed by an in-class exercise (2-3 hours). Students will need to have their personal laptops to be able to run the exercise. The exercises need Microsoft Excel and MATLAB. The students will access MATLAB through the university license or through virtual MATLAB provided by the UofS library. The second half of an exercise session is supervised by the instructor (or a guest lecturer). Each day will end with a discussion (20-30 minutes) on the materials presented that day.

Week 1

Day 1 (Oct 29): ***From Hydrologic Processes to Hydrologic Modelling***.
Students will work with data and models in HBV-SASK (a MATLAB-based hydrologic model) for two watersheds, Oldman and Banff.

Day 2 (Oct 30): ***Evaluation of Model Performance and Model Calibration***.
Students will learn about different model performance metrics and how local optimization works. This includes hands-on experience with fmincon (MATLAB optimization function).

Day 3 (Oct 31): ***GIWS Distinguished Lecture – Andras Bardossy – Breakthroughs in Hydrologic Modelling***

Day 4 (Nov 1): *Global and Multi-Criteria Optimization*.
Students will become familiar with theories of global optimization and learn about trade-offs between different modelling objectives.

Day 5 (Nov 2): *Land Surface-Hydrology Modelling. (Guest Lecturer: Al Pietroniro*)

Week 2

Day 1 (Nov 5): *An Introduction to Uncertainty Analysis Approaches*.
Students will learn about the different sources of uncertainty in modeling and different approaches to characterize uncertainty (at an introductory level).

Day 2 (Nov 6): *Cold Region Hydrology Model (CRHM) (Guest Lecturer: Diogo Costa).*

Day 3 (Nov 7): *Modular Modelling and Properly Constraining the Model Behavior (Guest Lecturer: Shervan Gharari)*

Day 4 (Nov 8): *Modelling Water Management and Reservoir Operation.*
Students will learn about the general concepts on how reservoir operation and water allocation works and their importance in watershed modelling.

Day 5 (Nov 9): *Open Discussion on the Future of Modelling for Water Security*.
Potential ideas to be discussed include: modelling in a non-stationarity environment, how to deal with uncertainty, integrated modelling, modelling feedback between the different earth systems, etc.

Assessment criteria

Attendance and Participation

Attendance in all sessions and active participation in discussions and in-class activities are essential. These will be worth 10% of the total grade and will be based on the instructor's evaluation. Each absence will subtract 25% of this grade.

Assignments

There are three assignments. Assignments 1 and 2 will be graded by the instructor. Assignment 3 will be graded by the guest lecturer and the instructor. All the assignments must be completed to pass the course. Late assignments will be accepted up to 3 days after the assignment due date but will be penalized at 10% per day. The rubric for grading will be provided along each assignment.

Assignment 1 (25%): Due 9am November 5th; Topic: Model Calibration and Evaluation.
Assignment 2 (25%): Due 9am November 9th; Topic: Sensitivity Analysis.
Assignment 3 (20%): Due 9am November 13th; Topic: Physically-based Cold Regions Modelling.

RUBRIC FOR ASSIGNMENTS

Objectives	Low Performance <70%	About or Below Average 71-85%	Exemplary Performance 85% or above
Answer questions and required components	Questions not answered and/or missing required components	Question answers are vague, high level of understanding not demonstrated. Components are present, but do not meet all requirements indicated in the instructions.	Questions are answered in a clear and concise manner and mastery of concepts is clear. All components are present and meet or exceed all requirements.
Content and Approach	Concepts were not explained, missing key points or poorly expressed. Background research does not appear to support approach.	Understanding of concepts is superficial, and some explanations are vague. Some background evidence is presented.	Appropriate literature and sources are cited and a solid grasp of the concepts is clear.
Writing/ Communication	The work was dull and little or no effort was made to connect to the reader/listener. Writing was hard to read due to poor clarity, organization or spelling/grammar.	An effort was made to make it interesting to reader/listener. The writing was clear and organized. Some issues of clarity, organization or grammar/spelling.	Clear effort was made to engage reader/listener. Writing was well done, easy to understand, succinct and organized.
Evidence of background research and context	Little or no reference to sources. Missing key points and context.	Some source materials are mentioned, but not well integrated into the text. A well-articulated context is presented.	Appropriate literature is used to make arguments and demonstrates a well-articulated understanding of the background materials and context.

Term project

An assessment of the anticipated consequences of wetland drainage at the St Denis National Wildlife Area, SK

Objective

The objective of this term project is to synthesize and apply the skills and knowledge that you have acquired from your Term 1 classes. You must demonstrate understanding and apply techniques from each class: ENVS806 Field Skills in Water Security Research; GEOG 826 Fundamentals of Hydrology; ENVS805 Data Analysis and Management - MWS; ENVS 815 Modeling for Water Security; ENVS 829 River, Lake, and Wetland Science.

Problem

Wetland drainage is a major issue in the Canadian prairies. Wetlands are drained to acquire more agriculturally productive land, but wetland drainage is associated with some negative hydrological and ecological consequences. You are to assess a (hypothetical) proposal to drain Pond 109 into Pond 90 at St Denis. You will be provided with hydrological and biogeochemical data for the various ponds and surrounding uplands and watershed. You are to use your knowledge of hydrological processes and biogeochemical processes and your

skills in data analysis and modelling to assess the likely impact of this drainage, with particular emphasis on downstream flood risk, and changes in the productivity and eutrophic status of the various wetlands involved.

Assessment
The project will be undertaken and assessed in teams, with a collectively agreed upon assignment of duties. This project is worth 20% of each of the five 3CU classes: ENVS806 Field Skills in Water Security Research; GEOG 826 Fundamentals of Hydrology; ENVS805 Data Analysis and Management - MWS; ENVS 815 Modeling for Water Security; ENVS 829 River, Lake, and Wetland Science.

A single report (pdf file) is to be submitted electronically to Andrew Ireson. The report should contain the following sections, with the mark breakdown provided

Item	**Mark**
Cover sheet: Title and team members	NA
Executive summary (1 page max)	15%
Table of contents	NA
Assignment of duties	5%
Description of the problem	10%
Data analysis and interpretation	20%
Modelling	20%
Synthesis	10%
Conclusions and recommendations	10%
Peer evaluation	10%

The peer evaluation is completed individually, and submitted separately from the report. In the peer evaluation you must provide an assessment of the contribution of each of the other members of your team and a mark out of 10 for their performance. This will be confidential.

School and University policy statements

University of Saskatchewan Grading System (for graduate courses)

The following describes the relationship between literal descriptors and percentage scores for courses in the College of Graduate Studies and Research:

90-100 Exceptional
A superior performance with consistent strong evidence of:

a comprehensive, incisive grasp of subject matter;
an ability to make insightful, critical evaluation of information;
an exceptional capacity for original, creative and/or logical thinking;
an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of:

a comprehensive grasp of subject matter;
an ability to make sound critical evaluation of information;
a very good to excellent capacity for original, creative and/or logical thinking;
a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good

A satisfactory to good performance with evidence of:

a substantial knowledge of subject matter;
a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
a satisfactory to good capacity for logical thinking;
some capacity for original and creative thinking;
a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of:
a basic grasp of the subject matter;
some understanding of the basic issues;
some familiarity with the relevant literature and techniques;
some ability to develop solutions to moderately difficult problems related to the subject matter;
some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

Program Requirements

Percentage scores of at least 70% are required for a minimal pass performance in undergraduate courses taken by graduate students;
Percentage scores of at least 70% are required for a minimal pass performance for each course which is included in a Ph.D. program;
Percentage scores of at least 70% are required for a minimal pass performance in all courses used toward JSGS Public Policy and Public Administration programs and all core courses for Master of Public Health students, whether included in a Ph.D. program or a Master's program;
For all other graduate courses, percentage scores of at least 60-69% are required for a minimal pass performance for each course which is included in a Master's program, provided that the student's Cumulative Weighted Average is at least 70%;
Graduate courses for which students receive grades of 60-69% are minimally acceptable in a Postgraduate Diploma program, provided that the Cumulative Weighted Average is at least 65%;
Students should seek information on other program requirements in the Course & Program Catalogue and in academic unit publications.

Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled.

Final examinations may be scheduled at any time during the examination period (INSERT FIRST AND LAST DAY OF CURRENT EXAM PERIOD); students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures: https://students.usask.ca/academics/exams.php

Integrity Defined (from the Office of the University Secretary)

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (https://secretariat.usask.ca/documents/student-conduct-appeals/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: http://www.usask.ca/secretariat/student-conduct-appeals/index.php

Examinations with Access and Equity Services (AES)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES policy and procedures. For more information, check www.students.usask.ca/aes, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

Student Supports

Student Learning Services

Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site http://library.usask.ca/studentlearning/.

Student and Enrolment Services Division

The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the students' web site http://students.usask.ca.

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (https://students.usask.ca/student-central.php).

Aboriginal Students Centre

The Aboriginal Students Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, brining Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (https://www.facebook.com/aboriginalstudentscentre/) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success in their international education experiences at the U of S and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students and their families in their transition to the U of S and Saskatoon. ISSAC offers advising and support on all matters that affect international students and their families and on all matters related to studying abroad. Please visit students.usask.ca for more information.

UNIVERSITY OF SASKATCHEWAN

New Graduate Course Proposal
GSR 400.1

Course Information

Please append the Course Outline (Syllabus), including a separate Undergraduate Course Outline (Syllabus) if required. A syllabus template is available at **usask.ca/cgps/forms.php**

College	Department/Unit
SENS	NA
Authorizing Unit Head	**Authorizing Unit Head Signature**
Dr. Karsten Liber	K. Liber

INFORMATION REQUIRED FOR COURSE AND PROGRAM CATALOGUE

Label and Course Number	Course Title				
ENVS 816.3	Chemicals in Aquatic Systems				
Total Course Hours	**Lecture**	**Seminar**	**Lab**	**Tutorial**	**Other**
39	39				
Weekly Course Hours	**Lecture**	**Seminar**	**Lab**	**Tutorial**	**Other**
19.5	19.5				

Term(s) in which course will be offered: ○ Term 1 ○ Term 2 ◉ Term 1 or 2 ○ Term 1 and 2

Course is to be offered: ◉ Annually ○ Biennially ○ Alternate Years ○ Other

Prerequisite(s) or restriction(s): Registration in the MWS Program, or instructors approval

If there are prerequisites, who can waive them: Department / Instructor: Instructor

Catalogue Description (not more than 50 words)

The movement of chemicals in aquatic systems has major implications for water policy and management. A wide variety of man-made contaminants reach aquatic systems. Case studies will investigate the properties that determine where chemicals will go in the environment and whether they will pose risks when they get there.

Tuition code and any additional class fees:	Number of credit units:	Can this course be repeated for credit?
TC 31	3	○ Yes ◉ No

Are there any existing courses that should be set up as equivalent or mutually-exclusive? Specify:

Yes, ENVS 823.3 and TOX 843.3 are equivalent.

CHECKLIST

- Course objectives need to be clearly stated
- Description of and Activities for Evaluation must be listed
- Course Outline (syllabus) with Reading List must be included
- Percentage of Total Mark for each evaluation listed
- Professor must be a member of the Graduate Faculty

If undergraduate lectures are included, also submit the Undergraduate Course Outline (Syllabus) and include information on what additional activities make this a graduate level course. For guidelines, see 'Undergraduate Component of Graduate Courses' under 'Forms for Graduate Chairs' at **usask.ca/cgps/forms.php**

EXAM EXEMPTION

Grade Mode: ○ Pass/Fail (P/F) ◉ Percentage/Numeric ○ Completed Requirements/In Progress/Not Completed Requirements (CR/IP/F)

Will there be a final exam for this course: ○ Yes ◉ No

If there is no final exam or if the final examination is worth less than 30% of the final grade, provide a brief statement which explains why a final examination is inappropriate for this course.

Final exams are not appropriate for this 2 week compressed mode – grading is based on 5 written exercises completed during the course of the class.

Rationale

What is the rationale for introducing this course

SENS has revised its Master of Water Security degree. This course has been created specifically to provide knowledge and skills relevant to this program.

Impact of Course

Are the programs/courses of other academic units/Colleges affected by this new course (possible duplication)?

○ Yes ◉ No

If yes, please list:

Were any other academic units asked to review or comment on the proposal?

○ Yes ○ No If yes, please attach correspondence

Will the offering of this course lead to the deletion or modification of any other course(s)?

○ Yes ◉ No

If yes, please list:

Course(s) for which this graduate course will be a prerequisite?

NA

Is this course to be required by your graduate students, or by graduate students in another program?

◉ Yes ○ No

If yes, please list:

Required for students in the MWS program.

Enrolment

Expected Enrolment
25

From which colleges/programs:
SENS

Resources

Proposed Instructor(s) (Please include qualifications):
Dr. Paul Jones
BSc (Hons, First Class) Zoology, University of Otago, Dunedin, New Zealand, 1983.
PhD, Biochemistry, University of Otago, Dunedin, New Zealand 1987.

How does the department plan to handle the additional teaching or administrative workload:
It will be part of the regular assignment of duties.

Are sufficient library or other research resources available for this course:
Yes

Are any additional resources required (library, audio-visual, technology, lab equipment, lab space, etc.):
No

Declaration

This course will conform to the academic requirements and standards for graduate courses, including the rules of Student Appeals in Academic Matters (usask.ca/university_secretary/council/reports_forms/reports/12-06-99.php) and Academic Integrity and Student Conduct (usask.ca/university_secretary/honesty/).

The signature of the Dean of your College signifies that the necessary resources are either available or shall be supplied by the College/Department budget.

Authorizing College Dean/Head	Signature	College Approval Date
Dr. Karsten Liber	K. Liber	19 September 2019

ENVS 816.3

Chemicals in Aquatic Systems

School of Environment and Sustainability

January

MASTERS IN WATER SECURITY

UNIVERSITY OF SASKATCHEWAN

Course Coordinator	Paul Jones		Room 134 Toxicology
	paul.jones@usask.ca		306-966-5062
Course notes:	See course website http://bblearn.usask.ca		
Assessment:	Assignments	5@15%	75%
	Engagement		5%
	Term Project		20%
Prerequisites:	Registration in the MWS Program or instructor's approval		

Calendar description

The movement of chemical contaminants in aquatic systems has major implications for water policy and management. In addition to traditional uses of aquatic systems for waste disposal a variety of man-made contaminants are able to reach aquatic systems. Through case studies we will investigate the environmental and chemical properties that determine where chemicals will go in the environment and whether they will pose risks to human and environmental health when they get there. We will discover how good chemical measurements can be made and how the data can be used in environmental fate models to predict chemical fate and effects. We will also look at risk assessment procedures that are used to evaluate the risks that chemicals pose to the environment and human health

Learning Outcomes

- Recognize the significance of chemical contaminants in aquatic systems
- Describe the environmental and chemical properties that drive chemical movement
- Predict chemical fate in aquatic systems using basic environmental modelling
- Evaluate the significance of chemical contaminants to human/environmental health and policy
- Apply the basic principles of risk chemical risk assessment to chemicals in aquatic systems

Important Dates

Day 1		Day 6	Exercise 3 Due
Day 2	Exercise 1 due	Day 7	
Day 3		Day 8	Exercise 4 Due
Day 4	Exercise 2 due	Day 9	
Day5		Day 10	Exercise 5 Due (Sun day 12)

Detailed course subject description

The course will be structured to provide 10 3hr in class sessions to cover basic course materials. Students will then have the remainder of the time for detailed reading of materials provided and for a series of 5 exercises to be completed as part of the class.

Class	Materials	Exercise	Readings
1	General Introduction (web information)	Exercise 1	
2	Great Lakes Case Study/POPs		Great Lakes Materials
3	3Bs and pharm modelling	Exercise 2	
4	Sorption/solids/sedimentation (MI inland Lakes)		Sediment Profile Readings
5	Analysis methods and Data Quality monitoring	Exercise 3	
6	Metals Lead Modelling (IEUBK) – Flint MI	Exercise 4	
7	Slave Athabasca river		Slave Athabasca Materials
8	Organics Movement/fugacity	Exercise 5	
9	Emerging Contaminants/Water treatment		
10	Risk Assessment		

1) <u>General Introduction (3 hr)</u>

This session will outline the plans for the course including expectations for the exercises and self-study. A general refresher on chemistry will bring all students to the same level with respect to the chemical physical and environmental properties that are important in determining chemical fate in the environment. This session will also introduce the first class exercise which will be to identify relevant web sources for chemical property information using an assigned set of chemicals.

2) <u>Great Lakes Case Study/Persistent Organic Pollutants (3 hr)</u>

The North American great lakes have a long history of human use/abuse. This session will cover some of the pertinent history including novel policy approaches such as the IJC which were developed to manage these transboundary waters. One of the major chemicals classes of concern in the Great Lakes are the persistent organic pollutants and this session will introduce this chemical class, discuss its movement in the environment and its impacts on the ecosystem.

3) <u>Bioconcentration/Bioaccumulation/Biomagnification/Uptake Modelling (3hr)</u>

The phenomena of bioconcentration bioaccumulation and biomagnification are the ultimate expression of chemicals in the environment. They lead to the accumulation and increasing concentration of chemicals in organisms and so ultimately lead to adverse effects. Understanding and predicting these phenomena provide us with the ability to predict chemical behavior and ultimately the potential of adverse effects. This session will be accompanied by an exercise on the evaluation of uptake and elimination constants for chemicals in a laboratory exposure study.

4) <u>Sorption Solids and Sediments (3hr)</u>

In aquatic systems solids and colloids play a very large role in the fate of chemicals. Dissolved organic matter binds metals and a variety of organic chemicals thus altering their cycling and bioavailability. Once precipitated as sediments solids can act a long term reservoirs for a variety of chemicals by protecting them for light and oxidative reactions. This session will discuss the nature of solids and the mechanisms by which they bind chemicals. The preservation of chemicals in sediments provides a

means of accumulating a historical record of chemical accumulation. Methods and applications of using sediment cores for trend analysis will be presented.

5) Analysis Methods and Data Quality Assurance

An understanding of analytical procedures and in particular issues of data quality are essential to an understanding of the fate and effects of chemicals in aquatic environments. This session will provide an introduction to the most common analytical methods used to generate data on the concentrations of chemicals in environmental samples. Sampling schemes will be introduced for monitoring chemicals in aquatic environments and aspects of GLP and data QA/QC will also be discussed. The session exercise will involve the review of a chemical data package with extensive QA/QC procedures.

6) Metals Modelling and Flint MI (3hr)

Metals in aquatic environments are generally present in the water column in their ionic forms and so behave differently to organic chemicals and so different approaches are needed to address their movement and accumulation. This session will present general information on the movement of metals and their interaction with organisms. Models to address the bioavailability of metals to aquatic organisms will also be presented. Finally, recent drinking water Pb contamination issues in Flint MI have highlighted the risks of metal exposure to human health. The class exercise for this session will be the use of a human lead accumulation model (IEUBK, US-EPA) to assess exposure to and risks from Pb exposure in children.

7) Slave/Athabasca river Case study (3hr)

This session will present a history of issues relating to the Slave and Athabasca rivers in Alberta and the Northwest Territories. This system has been heavily exploited over several generations and this has caused social as well as environmental concerns on the rivers. Runoff from agriculture, paper mill effluents, mine drainage, urban runoff, impoundments and most recently oilsands activities all contribute to impacts on the river. Currently available data on the system will be provided and discussed.

8) Organics Movement and Modelling in Aquatic Systems (3hr)

It is paradoxical that some of the least water soluble organic contaminants are in fact major issues when discussing accumulation and adverse impacts on aquatic systems. This paradox can be understood better by investigating the partitioning of chemicals between environmental compartments with an approach known as fugacity modelling. The principles of fugacity modelling will be discussed and presented in class and the session exercise will involve application of these models to investigate chemical movement in the environment.

9) Emerging Contaminants / Water Treatment

As the name suggests the issue of 'emerging contaminants' pertains to the recent discovery of a variety of unexpected chemicals in the environment. Many of these chemicals come for human waste water discharges and as a chemical class they can be of particular concern due to their biological potency and ongoing constant sources. While some of these chemicals are removed from water by treatment some are not. Water treatment technologies both for waste water and for drinking water will be introduced and discussed.

10) Risk Assessment

The primary tool used in assessing and managing chemical risks and impacts is risk assessment. While many approaches exist the most commonly used assesses exposure to and hazard from a chemical and

combines these in a risk characterization paradigm. The principles and applications of this approach will be covered in this session as will more advanced probabilistic approaches to risk assessment.

Grading Scheme

Component	% of final grade
Exercise 1	15%
Exercise 2	15%
Exercise 3	15%
Exercise 4	15%
Exercise 5	15%
Participation	5%
Term Project for MWS	20%
Total	100%

Rubric for Exercises

Objectives	Low Performance <70%	About or Below Average 71-85%	Exemplary Performance 85% or above
Answer questions and required components	Questions not answered and/or missing required components	Question answers are vague, high level of understanding not demonstrated. Components are present, but do not meet all requirements indicated in the instructions.	Questions are answered in a clear and concise manner and mastery of concepts is clear. All components are present and meet or exceed all requirements.
Content and Approach	Concepts were not explained, missing key points or poorly expressed. Background research does not appear to support approach.	Understanding of concepts is superficial, and some explanations are vague. Some background evidence is presented.	Appropriate literature and sources are cited and a solid grasp of the concepts is clear.
Writing/ Communication	The work was dull and little or no effort was made to connect to the reader/listener. Writing was hard to read due to poor clarity, organization	An effort was made to make it interesting to reader/listener. The writing was clear and organized. Some issues of clarity, organization or grammar/spelling.	Clear effort was made to engage reader/listener. Writing was well done, easy to understand, succinct and organized.

	or spelling/grammar.		
Evidence of background research and context	Little or no reference to sources. Missing key points and context.	Some source materials are mentioned, but not well integrated into the text. A well-articulated context is presented.	Appropriate literature is used to make arguments and demonstrates a well-articulated understanding of the background materials and context.

Term project: An assessment of the anticipated consequences of wetland drainage at the St Denis National Wildlife Area, SK

Objective

The objective of this term project is to synthesize and apply the skills and knowledge that you have acquired from your Term 1 classes. You must demonstrate understanding and apply techniques from each class: ENVS806 Field Skills in Water Security Research; GEOG 826 Fundamentals of Hydrology; ENVS 805 Data Analysis and Management - MWS; ENVS 815 Modeling for Water Security; ENVS 829 River, Lake, and Wetland Science.

Problem

Wetland drainage is a major issue in the Canadian prairies. Wetlands are drained to increase arable land and improve trafficability for agricultural producers, but wetland drainage is also associated with negative hydrological and ecological consequences. You are to assess a (hypothetical) proposal to drain Pond 109 into Pond 90 at St Denis. You will be provided with hydrological and biogeochemical data for the various ponds and surrounding uplands and watershed. You are to use your knowledge of hydrological processes and biogeochemical processes and your skills in data analysis and modelling to assess the likely impact of this drainage, with particular emphasis on downstream flood risk, and changes in the productivity and eutrophic status of the various wetlands involved.

Assessment

The project will be undertaken and assessed in teams, with a collectively agreed upon assignment of duties.

This project is worth 20% of each of the five 3CU classes: ENVS806 Field Skills in Water Security Research; GEOG 826 Fundamentals of Hydrology; ENVS805 Data Analysis and Management - MWS; ENVS 815 Modeling for Water Security; ENVS 829 River, Lake, and Wetland Science.

A single report (pdf file) is to be submitted electronically to Andrew Ireson. The report should contain the following sections, with the mark breakdown provided

Item	Mark
Cover sheet: Title and team members	NA
Executive summary (1 page max)	15%
Table of contents	NA
Assignment of duties	5%
Description of the problem	10%
Data analysis and interpretation	20%
Modelling	20%
Synthesis	10%
Conclusions and recommendations	10%
Peer evaluation	10%

The peer evaluation is completed individually, and submitted separately from the report. In the peer evaluation you must provide an assessment of the contribution of each of the other members of your team and a mark out of 10 for their performance. This will be confidential.

Readings (Indicative at this time)

John P. Giesy, James P. Ludwig, and Donald E. Tillitt (1994). Deformities in birds of the Great Lakes region. Assigning causality. Environ. Sci. Technol., 1994, 28 (3), pp 128A–135A.

US-EPA (1998). Guidelines for Ecological Risk Assessment. EPA/630/R-95/002F.

CCME (2006). A Framework for Ecological Risk Assessment: General Guidance. Canadian Council of Ministers of the Environment, Ottawa, Canada.

K. Solomon, J. Giesy, P. Jones (2000). Probabilistic risk assessment of agrochemicals in the environment. *Crop Protection* 19:649-655.

Masten, S. J., Davies, S. H., & Mcelmurry, S. P. (2016). Flint Water Crisis: What Happened and Why?. *Journal - American Water Works Association*, 108(12), 22-34.

US-EPA (2007) User's Guide for the Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK). EPA 9285.7-42, Washington DC.

Cook, P. M., Endicott, D. D., Robbins, J. A., Lodge, K. B., Guiney, P. D., Peterson, R. E., … Zabel, E. W. (2003). Effects of aryl hydrocarbon receptor-mediated early life stage toxicity on lake trout populations in Lake Ontario during the 20th century. *Environmental Science and Technology* 37(17):3864-3877.

Detailed assessment of students

Students will be assessed based on performance in the 5 exercises carried out during the course. Rubrics for grading of exercises will be provided when the exercises are described and provided. In the case of team-based exercises a portion of the grade will be allocated to performance assessment by other members of the group.

A portion of the final grade will be assessed on participation and engagement in class.

Finally, 20% of the grade from this class will be assessed on the term project.

School and University policy statements

1. Grading System Description

SENS uses the following grading system as adopted by the CGPS:

90-100 Exceptional

A superior performance with consistent strong evidence of

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;
- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good

A satisfactory to good performance with evidence of

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;
- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

2. Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled.
Final examinations may be scheduled at any time during the examination period; students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures:
http://students.usask.ca/academics/exams.php

3. Assessment Issues and Grade Disputes

A student shall be permitted to see any examination unless otherwise stated at the beginning of the course. Students dissatisfied with the assessment of their work in any aspect of course work, including midterm or final examination should consult the University policy '*Student Appeals or Evaluation, Grading and Academic Standing*' found at the Office of the University Secretary:
http://policies.usask.ca/policies/student-affairs-and-activities/student-appeals.php

4. Examinations with Disability Services for Students (DSS)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check http://www.students.usask.ca/disability/ , or contact DSS at 966-7273 or dss@usask.ca.

Students registered with DSS may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by DSS.

5. Academic Honesty

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/secretariat/student-conduct-appeals/)

For more information on what academic integrity means for students see the Academic Integrity Awareness site at: http://www.usask.ca/integrity/index.php

6. Recording

The syllabus must include a notice of whether the instructor intends to record lectures and whether students are permitted to record lectures.

University of Saskatchewan
School of Environment and Sustainability

Academic Integrity Checklist

Honesty and integrity are expected of every student at the University of Saskatchewan. There are many forms of academic misconduct; perhaps the most common is plagiarism. According to the University of Saskatchewan Guidelines for Academic Conduct:

"Plagiarism is the theft of the intellectual creation of another person without proper attribution. It is the use of someone else's words or ideas or data without proper documentation or acknowledgment. Quotations must be clearly marked, and sources of information, ideas, or opinions of others must be clearly indicated in all written work. This applies to paraphrased ideas as well as to direct quotations. A student must acknowledge and fairly recognize any contributions made to their personal research and scholarly work by others, including other students."

There are many resources on campus to assist you with proper citation and paraphrasing.

- For guidance on when and how to quote from other documents and how to properly paraphrase information in other documents, see http://library.usask.ca/howto/honesty.php.
- To learn about different styles of citation and how to properly cite a variety of different sources including statistics, archival materials, maps, legal documents and government reports, see http://libguides.usask.ca/citation.

When in doubt about a citation requirement or your approach to paraphrasing, ask your librarian or your course instructor or your academic supervisor for assistance.

Before you submit any written work, review it against the following checklist:[1]

- ❒ I have acknowledged the use of all ideas with accurate citations.
- ❒ I have used the words of another author, instructor, information source, etc., and I have properly acknowledged this and used proper citation.
- ❒ In paraphrasing the work of others, I have put the idea into my own words and did not just change some words or rearrange the sentence structure.
- ❒ I have checked my work against my notes to be sure that I have correctly referenced all quotes or ideas.
- ❒ When using direct quotations I have used quotation marks (or other means to clearly identify the quoted text) and provided full citations.
- ❒ Apart from material that is a direct quotation, everything else in the work is presented in my own words.
- ❒ When paraphrasing the work of others I have acknowledged the source or the central idea.
- ❒ I have checked all citations for accuracy (e.g. page numbers, journal volume, dates, web page addresses).
- ❒ I have used a recognized reference style (i.e. APA, MLA, Chicago etc.) consistently throughout my work.
- ❒ My list of references/ bibliography includes all of the sources used to complete the work.
- ❒ I have accurately and completely described any data or evidence I have collected or used.
- ❒ I fully understand all of the content (e.g., terms, concepts, theories, data, equations, ideas) of the work that I am submitting.
- ❒ The content of the work has not been shared with another student, unless permitted by the instructor.
- ❒ The content of the work reflects wholly my own intellectual contribution or analysis and not that of another student(s), unless the instructor approved the submission of group or collaborative work.
- ❒ If another person proofread my work it was for the sole purpose of indicating areas of concern, which I then corrected myself.
- ❒ This work has not been submitted, whole or in part, for credit in another course or at another institution, without the permission of the current course instructor(s).
- ❒ I understand the University of Saskatchewan's policy and expectations concerning academic honesty and the consequences of plagiarism or other forms of academic misconduct.

---

[1] Compiled based on York University (http://www.yorku.ca/tutorial/academic_integrity/acadintechecklist.html), Curtin University (http://academicintegrity.curtin.edu.au/global/checklist.cfm, University of Toronto (http://www.utoronto.ca/academicintegrity/resourcesforstudents.html), and Skidmore College (http://cms.skidmore.edu/advising/integrity/checklist.cfm) checklists for academic integrity.

UNIVERSITY OF SASKATCHEWAN

New Graduate Course Proposal GSR 400.1

Course Information

Please append the Course Outline (Syllabus), including a separate Undergraduate Course Outline (Syllabus) if required. A syllabus template is available at **usask.ca/cgps/forms.php**

College	Department/Unit
SENS	n/a
Authorizing Unit Head	**Authorizing Unit Head Signature**
Dr. Karsten Liber	K. Liber

INFORMATION REQUIRED FOR COURSE AND PROGRAM CATALOGUE

Label and Course Number	Course Title				
ENVS 817.3	Fundamentals of Hydrogeology				
Total Course Hours	**Lecture**	**Seminar**	**Lab**	**Tutorial**	**Other**
39	39				
Weekly Course Hours	**Lecture**	**Seminar**	**Lab**	**Tutorial**	**Other**
19.5	19.5				

Term(s) in which course will be offered: ○ Term 1 ◉ Term 2 ○ Term 1 or 2 ○ Term 1 and 2

Course is to be offered: ◉ Annually ○ Biennially ○ Alternate Years ○ Other

Prerequisite(s) or restriction(s)

If there are prerequisites, who can waive them: Department Instructor

Catalogue Description (not more than 50 words)

Groundwater flow; connections between groundwater and the rest of the hydrologic cycle; well hydraulics; groundwater chemistry; solute and contaminant transport in groundwater systems

Tuition code and any additional class fees:	Number of credit units:	Can this course be repeated for credit?
TC31	3	○ Yes ◉ No

Are there any existing courses that should be set up as equivalent or mutually-exclusive? Specify:

no

CHECKLIST

- Course objectives need to be clearly stated
- Description of and Activities for Evaluation must be listed
- Course Outline (syllabus) with Reading List must be included
- Percentage of Total Mark for each evaluation listed
- Professor must be a member of the Graduate Faculty

If undergraduate lectures are included, also submit the Undergraduate Course Outline (Syllabus) and include information on what additional activities make this a graduate level course. For guidelines, see 'Undergraduate Component of Graduate Courses' under 'Forms for Graduate Chairs' at **usask.ca/cgps/forms.php**

EXAM EXEMPTION

Grade Mode: ○ Pass/Fail (P/F) ◉ Percentage/Numeric ○ Completed Requirements/In Progress/Not Completed Requirements (CR/IP/F)

Will there be a final exam for this course: ○ Yes ◉ No

If there is no final exam or if the final examination is worth less than 30% of the final grade, provide a brief statement which explains why a final examination is inappropriate for this course.

Rationale

What is the rationale for introducing this course

SENS has revised its Master of Water Security degree. This course has been created specifically to provide knowledge and skills relevant to this program.

Impact of Course

Are the programs/courses of other academic units/Colleges affected by this new course (possible duplication)?

○ Yes ◉ No

If yes, please list:

Were any other academic units asked to review or comment on the proposal?

○ Yes ○ No If yes, please attach correspondence

Will the offering of this course lead to the deletion or modification of any other course(s)?

○ Yes ◉ No

If yes, please list:

Course(s) for which this graduate course will be a prerequisite?

n/a

Is this course to be required by your graduate students, or by graduate students in another program?

◉ Yes ○ No

If yes, please list:

Required for students in the MWS program.

Enrolment

Expected Enrolment

25

From which colleges/programs:

SENS

Resources

Proposed Instructor(s) (Please include qualifications):

Dr. Grant Ferguson
BSc, University of Waterloo
PhD, University of Manitoba

How does the department plan to handle the additional teaching or administrative workload:

It will be part of the regular assignment of duties.

Are sufficient library or other research resources available for this course:

Yes

Are any additional resources required (library, audio-visual, technology, lab equipment, lab space, etc.):

No

Declaration

This course will conform to the academic requirements and standards for graduate courses, including the rules of Student Appeals in Academic Matters (usask.ca/university_secretary/council/reports_forms/reports/12-06-99.php) and Academic Integrity and Student Conduct (usask.ca/university_secretary/honesty/).

The signature of the Dean of your College signifies that the necessary resources are either available or shall be supplied by the College/Department budget.

Authorizing College Dean/Head	Signature	College Approval Date
Dr. Karsten Liber	K. Liber	19 September 2019

ENVS 817.3

Fundamentals of Hydrogeology

School of Environment and Sustainability

April 13-24, 2020

MASTERS IN WATER SECURITY

UNIVERSITY OF SASKATCHEWAN

Course Coordinator	Grant Ferguson grant.ferguson@usask.ca	2B22 Engineering Bldg 966-7427 Office hours by appointment only
Course notes:	See course website http://bblearn.usask.ca	
Prerequisites:	Registration in the MWS Program	

Calendar description

Groundwater flow; connections between groundwater and the rest of the hydrologic cycle; well hydraulics; groundwater chemistry; solute and contaminant transport in groundwater systems

Learning Outcomes

Upon completion of the course, student will be able to:

1. Explain groundwater flow patterns and rates from hydraulic and geologic data.
2. Analyze hydraulic tests from aquifers and aquitards.
3. Predict responses of groundwater systems to pumping using simple models.
4. Explain patterns of groundwater chemistry.
5. Predict distribution of contaminants in groundwater systems using simple models.

Important Dates

April 13	First day of Lectures	April 17	Assignment 1
April 21	Assignment 2	April 22	Assignment 3
April 22	Mock Trial	April 24	Final day of lectures – Final project presentations and reports due

Detailed course subject description

Course Format

This course will be delivered as a compressed course through the Masters of Water Security program in the School of Environment and Sustainability. Most days will begin with three hours of lecturing and will be followed by an afternoon session where students will work on assignments covered during the lecture with assistance from the instructor. These assignments will completed individually although working in groups during afternoon sessions is encouraged. Additional time in the afternoon will be set aside to work on the term project.

Lecture slides and assignments will be posted to Blackboard along with reference material to support the assignments. There is no required textbook for the course but the following textbooks are recommended if students would like additional reference material:

Fetter, Charles Willard. *Applied hydrogeology*. Waveland Press, 2018.

Freeze, R. Allan, and John A. Cherry. "Groundwater Prentice-Hall Inc." *Eaglewood Cliffs, NJ* (1979).

Schwartz, Franklin W., and Hubao Zhang. "Fundamentals of Groundwater John Wiley & Sons." *New York* 583 (2003).

Schedule of Topics

Topic		Approximate Lecture Hours
1.	INTRODUCTION (April 13) 1.1. Overview/review 1.2. Groundwater and the hydrologic cycle	3
2.	BASIC PRINCIPLES OF GROUNDWATER FLOW (April 14) 2.1. Porosity 2.2. Darcy's law 2.3. Hydraulic conductivity and permeability 2.4. Anisotropy and heterogeneity	3
3.	GROUNDWATER AND GEOLOGY (April 15) 3.1. Aquifers and confining beds 3.2. Transmissive and storage properties of aquifers 3.3. Geology and hydraulic properties	3
4.	THEORY OF GROUNDWATER FLOW (April 16) 4.1. Differential equations for groundwater flow 4.2. Boundary conditions 4.3. Initial conditions 4.4. Flownets 4.5. Analytical solutions to the groundwater flow equation 4.6. Unsaturated flow 4.7. Groundwater flow in fractured rocks	3
5.	REGIONAL GROUNDWATER FLOW (April 17) 5.1. Groundwater basins 5.2. Mathematical analysis of regional flow 5.3. Recharge 5.4. Discharge 5.5. Groundwater-surface water interaction	3
6.	WELL HYDRAULICS (April 20) 6.1. Aquifers and aquifer tests 6.2. Theis solution 6.3. Cooper-Jacob solution 6.4. Complex conditions 6.5. Slug tests	3

7.	GROUNDWATER CHEMISTRY (April 21) 7.1. Dissolved solids in groundwater 7.2. Kinetic and equilibrium reactions 7.3. Acid-base reactions 7.4. Redox reactions	3
8.	MASS TRANSPORT (April 22) 8.1. Advection and dispersion 8.2. Contaminant transport and fate 8.3. Isotopes and age dating	3
9.	CASE STUDY (April 23)	1
10.	FINAL PROJECT PRESENTATIONS (April 24)	1

Detailed assessment of students

Overall grades of ≥60% in the course constitute a pass for a masters. An overall grade of ≥70% is required for a PhD student.

Assignments (3 x 15 = 45 marks):

Assignments based on lecture material will be provided. These assignments will consist of exercises where the students apply concepts from that morning's lecture with the assistance of the instructor. The intent is that these assignments will be completed within the afternoon session and will be due the next morning.

1. Groundwater and the hydrologic cycle (due April 16)
2. Groundwater and wells (due April 20)
3. Groundwater chemistry and solute transport (due April 22)

Submitting Assignments

Written assignments must be submitted at the start of class except where noted. You should keep a personal copy of all assignments submitted. Late assignments will be accepted up to two classes after the assignment due date, but a grade of 15% per day will be subtracted from the mark received. Students may submit late assignments electronically to grant.ferguson@usask.ca. Where extenuating circumstances exist, students are advised to contact the instructor immediately to make suitable arrangements regarding extensions.

Case Study (5 marks)

On April 23, a mock trial based on contamination of municipal groundwater supply at Woburn, MA will be undertaken based on an exercise provided by the Science Education Resource Centre at Carleton College (https://serc.carleton.edu/woburn/student-modules/mocktrial/index.html). The background material and evidence will be introduced in a one-hour lecture at the beginning of the day. Students will then be given two hours to work as groups to assess available evidence to make a case to support their position as one of the defendants or the plaintiff.

Case Study Assessment:

- Performance of the group in the mock trial: 50%
- Brief written summary of their arguments and what they could have done better. Assignment is to be completed in 30-minute work period following the end of the mock trial due the following day. Discussion of this assignment within the group is encouraged but each student must submit their own summary (~1-2 pp): 50%

Final Assignment (30 marks)

Students will produce a source water protection plan for a municipal water supply. A list of possible study areas will be supplied to the students. This work will focus on transit times for contaminants and will largely draw on course content on groundwater flow, well hydraulics and solute transport. Locations will be selected during the first week of class and modules building on each subject matter will be worked on each day. The results will be presented as both a written report (~10 pp) and an oral presentation to the class (~10 minutes) on the final day of lectures.

Assessment:

- Written report with maps: 80%
    - Introduction: 5%
    - Background geology, hydrology and hydrogeology: 15%
    - Inventory contaminant sources: 5%
    - Analysis and mapping of transport times:35%
    - Recommendations and Conclusions: 15%
    - References: 5%
- Oral presentation: 20%

Term 2 MWS Project (20 marks)

Information on literal descriptors for grading at the University of Saskatchewan can be found at:
http://students.usask.ca/current/academics/grades/grading-system.php
Please note: There are different literal descriptors for undergraduate and graduate students.

More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found
at http://www.usask.ca/university_secretary/council/academiccourses.php

School and University policy statements

University of Saskatchewan Grading System (for graduate courses)

The following describes the relationship between literal descriptors and percentage scores for courses in the College of Graduate and Postdoctoral Studies:

90-100 Exceptional

A superior performance with consistent strong evidence of:

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of:

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;
- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good

A satisfactory to good performance with evidence of:

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of:

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;
- some ability to examine the material in a critical and analytical manner.

<60 Failure
An unacceptable performance.

Program Requirements

- Percentage scores of at least 70% are required for a minimal pass performance in undergraduate courses taken by graduate students;
- Percentage scores of at least 70% are required for a minimal pass performance for each course which is included in a Ph.D. program;
- Percentage scores of at least 70% are required for a minimal pass performance in all courses used toward JSGS Public Policy and Public Administration programs and all core courses for Master of Public Health students, whether included in a Ph.D. program or a Master's program;
- For all other graduate courses, percentage scores of at least 60-69% are required for a minimal pass performance for each course which is included in a Master's program, provided that the student's Cumulative Weighted Average is at least 70%;
- Graduate courses for which students receive grades of 60-69% are minimally acceptable in a Postgraduate Diploma program, provided that the Cumulative Weighted Average is at least 65%;

Students should seek information on other program requirements in the Course & Program Catalogue and in academic unit publications.

Midterm and Final Examination Scheduling
Midterm and final examinations must be written on the date scheduled.

Final examinations may be scheduled at any time during the examination period (INSERT FIRST AND LAST DAY OF CURRENT EXAM PERIOD); students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures: https://students.usask.ca/academics/exams.php

Integrity Defined (from the Office of the University Secretary)
The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (https://secretariat.usask.ca/documents/student-conduct-appeals/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: http://www.usask.ca/secretariat/student-conduct-appeals/index.php

Examinations with Access and Equity Services (AES)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES policy and procedures. For more information, check www.students.usask.ca/aes, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations.

Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

Student Supports

Student Learning Services

Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site http://library.usask.ca/studentlearning/.

Student and Enrolment Services Division

The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the students' web site http://students.usask.ca.

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (https://students.usask.ca/student-central.php).

Aboriginal Students Centre

The Aboriginal Students Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, brining Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (https://www.facebook.com/aboriginalstudentscentre/) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success in their international education experiences at the U of S and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students and their families in their transition to the U of S and Saskatoon. ISSAC offers advising and support on all matters that affect international students and their families and on all matters related to studying abroad. Please visit students.usask.ca for more information.

Copyright

Course materials are provided to you based on your registration in a class, and anything created by your professors and instructors is their intellectual property, unless materials are designated as open education resources. This includes exams, PowerPoint/PDF slides and other course notes. Additionally, other copyright-protected materials created by textbook publishers and authors may be provided to you based on license terms and educational exceptions in the Canadian Copyright Act (see http://laws-lois.justice.gc.ca/eng/acts/C-42/index.html).

Before you copy or distribute others' copyright-protected materials, please ensure that your use of the materials is covered under the University's Fair Dealing Copyright Guidelines available at https://library.usask.ca/copyright/general-information/fair-dealing-guidelines.php. For example, posting others' copyright-protected materials on the open web is not covered under the University's Fair Dealing Copyright Guidelines, and doing so requires permission from the copyright holder.

For more information about copyright, please visit https://library.usask.ca/copyright/index.phpwhere there is information for students available at https://library.usask.ca/copyright/students/rights.php, or contact the University's Copyright Coordinator at mailto:copyright.coordinator@usask.ca or 306-966-8817.

UNIVERSITY OF SASKATCHEWAN

New Graduate Course Proposal
GSR 400.1

Course Information

Please append the Course Outline (Syllabus), including a separate Undergraduate Course Outline (Syllabus) if required. A syllabus template is available at **usask.ca/cgps/forms.php**

College	Department/Unit
SENS	NA
Authorizing Unit Head	**Authorizing Unit Head Signature**
Dr. Karsten Liber	K. Liber

INFORMATION REQUIRED FOR COURSE AND PROGRAM CATALOGUE

Label and Course Number	Course Title				
ENVS 820.3	Water and Human Health and Wellbeing				
Total Course Hours	**Lecture**	**Seminar**	**Lab**	**Tutorial**	**Other**
39	39				
Weekly Course Hours	**Lecture**	**Seminar**	**Lab**	**Tutorial**	**Other**
19.5	19.5				

Term(s) in which course will be offered: ○ Term 1 ○ Term 2 ◉ Term 1 or 2 ○ Term 1 and 2

Course is to be offered: ◉ Annually ○ Biennially ○ Alternate Years ○ Other

Prerequisite(s) or restriction(s):

If there are prerequisites, who can waive them: Department Instructor

Catalogue Description (not more than 50 words)

Students examine critical water-health issues through a distinctly interdisciplinary lens. Water and wellbeing connections from individual to chronosphere scales are explored via case study, epidemiological modeling, GIS, media fact-checking and assignments. Students deepen knowledge about roles of water in preserving social, cultural, economic and political resilience related to health.

Tuition code and any additional class fees:	Number of credit units:	Can this course be repeated for credit?
TC 31	3	○ Yes ◉ No

Are there any existing courses that should be set up as equivalent or mutually-exclusive? Specify:

CHECKLIST

- Course objectives need to be clearly stated
- Description of and Activities for Evaluation must be listed
- Course Outline (syllabus) with Reading List must be included
- Percentage of Total Mark for each evaluation listed
- Professor must be a member of the Graduate Faculty

If undergraduate lectures are included, also submit the Undergraduate Course Outline (Syllabus) and include information on what additional activities make this a graduate level course. For guidelines, see 'Undergraduate Component of Graduate Courses' under 'Forms for Graduate Chairs' at **usask.ca/cgps/forms.php**

EXAM EXEMPTION

Grade Mode: ○ Pass/Fail (P/F) ◉ Percentage/Numeric ○ Completed Requirements/In Progress/Not Completed Requirements (CR/IP/F)

Will there be a final exam for this course: ○ Yes ◉ No

If there is no final exam or if the final examination is worth less than 30% of the final grade, provide a brief statement which explains why a final examination is inappropriate for this course.

The course is meant to deepen application of interdisciplinary thought and hydrological modeling skills in accessing water-health research and applying that research to emerging problems. As it is applied in nature, a final exam is an insufficient rubric for measuring students' application. As much of the two-week compressed course is about skill development, an exam testing 'content' would be arbitrary at the end, though a planned midterm exam tests foundational content half way through the course.

Rationale

What is the rationale for introducing this course

SENS has revised its Master of Water Security degree. This course has been created specifically to provide knowledge and skills relevant to this program.

Impact of Course

Are the programs/courses of other academic units/Colleges affected by this new course (possible duplication)?

(●) Yes ( ) No

If yes, please list:

In the original MWS Program we used PUBH 815.3. With a new faculty hire in SENS we were able to create this version tailored for our program. The focus of the two courses is different. The ENVS course focuses on applying modeling and GIS skills to water and wellbeing issues across scales to create outputs for decision making. The PUBH course is focused on human health risk assessment and public health issues concerning water.

Were any other academic units asked to review or comment on the proposal?

( ) Yes ( ) No If yes, please attach correspondence

Will the offering of this course lead to the deletion or modification of any other course(s)?

( ) Yes (●) No

If yes, please list:

Course(s) for which this graduate course will be a prerequisite?

NA

Is this course to be required by your graduate students, or by graduate students in another program?

(●) Yes ( ) No

If yes, please list:

Required for students in the MWS program.

Enrolment

Expected Enrolment
25

From which colleges/programs:
SENS

Resources

Proposed Instructor(s) (Please include qualifications):
Dr. Lori Bradford
Honours Bachelor of Science in Biochemistry from McMaster in 2000
Master of Environmental Studies from Lakehead in 2005
PhD in Social Psychology from Lincoln University in New Zealand in 2010

How does the department plan to handle the additional teaching or administrative workload:
It will be part of the regular assignment of duties.

Are sufficient library or other research resources available for this course:
Yes

Are any additional resources required (library, audio-visual, technology, lab equipment, lab space, etc.):
No

Declaration

This course will conform to the academic requirements and standards for graduate courses, including the rules of Student Appeals in Academic Matters (usask.ca/university_secretary/council/reports_forms/reports/12-06-99.php) and Academic Integrity and Student Conduct (usask.ca/university_secretary/honesty/).

The signature of the Dean of your College signifies that the necessary resources are either available or shall be supplied by the College/Department budget.

Authorizing College Dean/Head	Signature	College Approval Date
Dr. Karsten Liber		19 September 2019

ENVS 820.3
Water and Human Health and Wellbeing
School of Environment and Sustainability
February 2019

MASTERS IN WATER SECURITY

UNIVERSITY OF SASKATCHEWAN

Course Coordinator	Dr. Lori Bradford, Ph.D.	Kirk Hall 332
	Lori.Bradford@usask.ca	306-966-1617
Course notes:	See course website http://bblearn.usask.ca	
Assessment:	[Assignments (2 @ 30% each)	60%]
	[Midterm Exam	20%]
	[Term Project	20%]
Prerequisites:	Registration in the MWS Program	

Calendar description
This course will examine increasingly critical water and health-related issues through a distinctly global and interdisciplinary lens. It will explore the connections between water, health and wellbeing through the individual to macro-system scales and draw from local to global examples. Through case study, epidemiological modeling, and social psychological challenges, the course will deepen knowledge about the central role of water in preserving health and wellbeing; human health risks of chemical contaminations, waterborne pathogens; and the vital role of water for social, cultural, economic and political resilience as it relates to health.

Learning Outcomes
Students will be able to:

1. Describe the central role of water quality, quantity, aesthetics, and spiritual value for health and the effect of a safe water supply on population health and community wellbeing
2. Explain why and how different types of waterborne diseases occur, how to treat them, and discuss social justice and policy issues concerning preventing such diseases through provision of safe clean water for drinking, recreation, cultural and sanitation purposes
3. Understand the role of water scientists, health researchers, and policy makers on prevention of physical and cultural effects on wellbeing in the broad sense from water and how research, behavioural adaptation, and engineered infrastructure contributes to creating and maintaining a safe water supply
4. Carefully consider social psychological dimensions of water and health including water's vital role in sustaining communities, cultures, and worldviews and changing political and economic systems
5. Work together as an interdisciplinary group, respecting each other's backgrounds and skills to achieve learning outcomes.
6. Apply theory, methods, and tools (i.e., frameworks for examining water, health and wellbeing challenges, epidemiological GIS methods, water and health predictive modeling tools, fact-checking skills, photography for knowledge mobilization) learned in the course to a variety of water and health challenges including bacteria and parasites, industrial wastes, petrochemicals, detergents, prescription medication, fertilizers and sewage, and silt and soils.

Important Dates

Feb 11 (Mon) Feb 15 (Fri)	First day of Lectures Assignment 1 due (Nobel nomination)	Feb 25 (Mon) Feb 27 (Wed)	Classes resume Midterm Exam and IF-AT test
Feb 18 (Mon)	Family Day – no classes	Feb 28 (Thu)	Last day, Assignment 2 due (Fact checking)
Feb 19-22	Reading Break – University closed	TBD	Term Projects due

Detailed course subject description

Course outline:

Date	Topic/Activities (every class students are invited to submit index card of unanswered ?s)	Readings *Required † Recommended
February 11th		
Morning	Icebreaker activities Introduction to Water, Health and Wellbeing Description of Assignment Approval of Syllabus Lecture: Frameworks for Water and Health study	1. *Gimelli, F. M., Bos, J. J., & Rogers, B. C. (2018). Fostering equity and wellbeing through water: A reinterpretation of the goal of securing access. *World Development*, *104*, 1-9. 2. *Bronfenbrenner, U. (1994). Ecological models of human development. *International encyclopedia of education*, *3*(2), 37-43.
Afternoon	Practical application of frameworks from case study reading in groups	Five case studies to choose from (one per group)
February 12th		
Morning	Explanation of Assignment 1 Conversation Café's: Water, Health and Wellbeing in the Individual (Individual scale, internal conditions) Guest: Lalita Bharadwaj on Human Health Risk Assessment for Water and Wellbeing	3. *Waldner, C. L., Alimezelli, H. T., McLeod, L., Zagozewski, R., Bradford, L. E., & Bharadwaj, L. A. (2017). Self-reported effects of water on health in First Nations communities in Saskatchewan, Canada: results from community-based participatory research. *Environmental health insights*, *11*, 1178630217690193. 4. *http://www.saskh2o.ca/PDF-WaterCommittee/arsenic.pdf 5. † Abdul, K. S. M., Jayasinghe, S. S., Chandana, E. P., Jayasumana, C., & De Silva, P. M. C. (2015). Arsenic and human health effects: A review. *Environmental toxicology and pharmacology*, *40*(3), 828-846.
Afternoon	Create a factsheet on a contaminant in source water that may impact health and wellbeing - group activity	Topics to choose from (one per group): *E coli* *Salmonella typhi* Birth control pills Cyanobacteria (algae blooms) Herbicide MCPA
February 13th		
Morning	Lecture: Water, Health and Wellbeing in Families (Microsystem scale, immediate environment)	6. *Bradford, L. E., Zagozewski, R., & Bharadwaj, L. A. (2017). Perspectives of water and health using Photovoice with youths living on reserve. *The Canadian Geographer/Le Géographe canadien*, *61*(2), 178-195. 7. *Daley, K., Castleden, H., Jamieson, R., Furgal, C., & Ell, L. (2014). Municipal water quantities and health in Nunavut

	Speed-photography: 1 hour photo challenge	households: an exploratory case study in Coral Harbour, Nunavut, Canada. *International journal of circumpolar health*, *73*(1), 23843.
Afternoon	Group work time for Assignment 1	
February 14th		
Morning	Lecture: Water, Health and Wellbeing in the Community (Mesosystem scale, connections) Guest: Corinne Schuster-Wallace on WADI	8. *Dickins, S. K., Schuster-Wallace, C. J., & Elliott, S. J. (2013). Developing a vulnerability mapping methodology: applying the water-associated disease index to dengue in Malaysia. *PLoS One*, *8*(5), e63584. 9. *McDonald, R.I., Weber, K., Padowski, J., Flörke, M., Schneider, C., Green, P.A., Gleeson, T., Eckman, S., Lehner, B., Balk, D. and Boucher, T., 2014. Water on an urban planet: Urbanization and the reach of urban water infrastructure. *Global Environmental Change*, *27*, pp.96-105.
Afternoon	Map a water-borne outbreak	Using data provided, you will create maps demonstrating epidemiology of an outbreak AND potential impacts of a preventative measure (i.e., investment in infrastructure, educational campaign, change in water treatment…)
February 15th		
Morning	Lecture: Water, Health and Wellbeing through the lens of Policy Makers (the Exosystem scale, indirect environment)	10. *Sommer, J. M., Shandra, J. M., Restivo, M., & Coburn, C. (2015). Water, Sanitation, and Health in Sub-Saharan Africa: A Cross-national Analysis of Maternal and Neo-natal Mortality. *Human Ecology Review*, *22*(1), 129-152. 11. *de Loë, R. (2017). Coordinating Water Policies: Necessary, But Not Sufficient. In Water Policy and Governance in Canada (pp. 231-248). Springer, Cham.
Afternoon	Group work time for Assignment 1	Assignment 1 due 4pm
February 18-22nd	Family Day and Reading Break	
February 25th		
Morning	Lecture: Water, Health and Wellbeing in different Cultures (Macrosystem scale, social and cultural values)	12. *Anderson, K., Clow, B., & Haworth-Brockman, M. (2013). Carriers of water: Aboriginal women's experiences, relationships, and reflections. *Journal of Cleaner Production*, *60*, 11-17. 13. *Mark, G. T., & Lyons, A. C. (2010). Maori healers' views on wellbeing: The importance of mind, body, spirit, family and land. *Social Science & Medicine*, *70*(11), 1756-1764. 14. † Giles, A. R., Cleator, L. B., McGuire-Adams, T., & Darroch, F. (2014). Drowning in the social determinants of health: understanding policy's role in high rates of drowning in aboriginal communities in Canada. A*boriginal policy studies*, *3*(1-2).
Afternoon	Activity: $1 million box	Follow up on case studies from Feb 121th, or contaminants from Feb 12th. You have been granted $1 million from a research institute to conduct further research on the case study/contaminant. Prepare a pitch (ppt presentation – max 10 slides) on how you would allocate that grant money to enhance research for better health and wellbeing outcomes across the socio-cultural macrosystem scale
February 26th		

Morning	Lecture: Water, Health and Wellbeing across time (Chronosystem, changes over time)	15. *Burton, H., Rabito, F., Danielson, L., & Takaro, T. K. (2016). Health effects of flooding in Canada: a 2015 review and description of gaps in research. *Canadian Water Resources Journal/Revue canadienne des ressources hydriques*, *41*(1-2), 238-249. 16. *Chapter 2 of Gamble, J. L., Ebi, K. L., Grambsch, A. E., & Wilbanks, T. J. (2017). Analyses of the effects of global change on human health and welfare and human systems. A report by the US climate change science program and the subcommittee on global change research. 17. †http://wedocs.unep.org/bitstream/handle/20.500.11822/19519/sap46_final_report_all.pdf?sequence=1
Afternoon	Activity: Write a letter to a government agency as a water and health predictive modeler noting your concerns for future water and health related threats.	
February 27th		
Morning	Midterm Exam on Water, Health and Wellbeing	50 questions multiple choice + IF-AT testing in groups
Afternoon	Time to work on Assignment 2	
February 28th		
Morning	Water, Health and Wellbeing policy mapping - Tracking how an outbreak led to new policy – and the consequences (positive and negative) of that policy From Walkerton and North Battleford to today	18. *Morrison, A., Bradford, L., & Bharadwaj, L. (2015). Quantifiable progress of the First Nations Water Management Strategy, 2001–2013: ready for regulation?. *Canadian Water Resources Journal/Revue Canadienne des Ressources Hydriques*, *40*(4), 352-372. 19. *Johns, C. M. (2014). Chapter 11 The Walkerton Inquiry and Policy Change. *Commissions of Inquiry and Policy Change: A Comparative Analysis*, 214. 20. *Collins, L., McGregor, D., Allen, S., Murray, C., & Metcalfe, C. (2017). Source Water Protection Planning for Ontario First Nations Communities: Case Studies Identifying Challenges and Outcomes. *Water*, *9*(7), 550.
Afternoon	Time to work on Assignment 2	
March 1st		
Morning	Class summary, unanswered questions	Answer index card questions as they have been collected over the course
Afternoon	Time to work on Assignment 2	Assignment 2 due end of day

Detailed assessment of students

Assignment 1: Nobel Prize nomination package – 30% of final mark
Due: Friday Feb 15 by 4pm
Learning outcomes: 1-3, 5
Up to this point, just a few Nobel nominations or awards have been directly related to issues around water. There was the Literature Prize in 1954 (Hemingway, for the book The Old Man and the Sea), Chemistry in 2003 (Agre, for discovery of cellular channels to transport water across membranes), and Chemistry 2017 (Dubochet; for developing cryo-electron microscopy for rapid cooling of water around a biomolecule). Given the challenges of population growth, extreme weather, climate change and migration, and water shortages, this year, your group of 4-5 people will nominate a person or group of up to three people for the Nobel prize (choose which category you like) for *a discovery around water, health and wellbeing that worked for the greatest benefit for all of humankind*.

Your nomination must include:

1. Text of no more than 2000 words, Times New Roman, 12 point font, APA formatting
2. A self-directed PowerPoint slideshow or Prezi pitch for the class (15 slides in length)
3. Headings and content as follows:
    a. Nominator name and details (who do you represent as a group and why are you in a position to nominate this water, health and wellbeing award? Can be fictional or based on a real life person/group you believe would nominate the person(s) for the Prize) about 200-300 words
    b. Motivation for the nomination (Why is it an important discovery/finding or work/treatment around the role of water for health and community wellbeing? How is it the greatest benefit to humankind in the current social, cultural, economic and political context?) about 1200 words
    c. Examples of the work of the nominee(s) – create a table or annotated bibliography of the work being nominated or provide high quality images of the photo or short excerpts from the selection from Literature with explanation 500-700 words that exemplify the importance of the work
    d. References (does not count in wordcount)

Nominations will be assessed by the following criteria out of 20 marks:

A) Biographical information of nominating group and nominee reflect a relevant person/group with details about their role in water and health are accurate (0-3 marks)
B) Motivation is well-researched, relevance to Nobel Prize mandate is clear, global water and health benefit is made evident, relevance to social justice, economic systems, political movements and/or policy making is described in detail (0-10)
C) Examples (supporting work) are aptly presented and summarized (0-5)
D) Appropriate formatting, writing style, persuasion and citations are used (0-2)

Nomination Package is due at 4pm February 15th 2019.

Assignment 2: Fact checking - Individual assignment – 30% of final mark
Due: Friday March 1st by 4pm
Learning outcomes: 1, 2, 4, 6

This assignment is designed to enhance student knowledge of different types of waterborne diseases, how to prevent and treat them, and approaches for overcoming related social justice and policy issues about water and health. It will also provide opportunity for you to apply your knowledge and skills as a future water scientist, health researcher and/or policy maker. You will need to provide accurate information to the 'public', and learn mechanisms to overcome some of the social psychological forces (i.e., conformity, obedience, persuasion, heuristics and biases, prejudice) that influence people's decision making about water and health issues discussed in the media.

In this assignment, you will fact-check three interrelated media pieces about a water, health and wellbeing issue. These can include radio broadcasts (such as Quirks and Quarks style recordings, interviews, podcasts, news reports), newspaper articles, popular magazine articles, blog posts, print, television, movie clips, novellas, video games and internet sites. You must email the professor with your three choices for approval before you begin the fact-checking exercise.

Then, you will critical analyze the three pieces for content against conventional science, local knowledge and traditional knowledge sources. For instance, if a media article describes a traditional practice, you

should check with an Indigenous mentor, or another source for accuracy, relevance, and use of respectful tone. You could fact-check statistics from original published articles quoted in media pieces, and look at the limitations of the original sources to see if they have been included in the media piece.

You will create an attractive poster, which demonstrates your findings and informs your peers of potential bias in media pieces about water, health and wellbeing. Select posters will be displayed in SENS' hallways once complete.

Posters will be assessed by the following criteria out of 30 marks:

a. Must include 3 media selections fact-checked with accuracy using peer-reviewed and primary sources when possible (i.e., explore the literature for citations and counter-arguments, include knowledge gained from a conversation with an Elder from a specified community; consult with experts like hydrologists, engineers, epidemiologists, or other professional, certified health practitioners) – 15 marks
b. Must include a thematic assessment of the fact-checking to tell a larger story about media portrayals of water, health and wellbeing issues - 10 marks
c. Must be attractive, concise, and free of spelling and grammatical errors, 36' by 36-48' printed in colour or greyscale, APA formatting for references – 5 marks

Midterm Exam: February 27th 2018 worth 20% of final mark
Learning outcomes: 1-3, 5-6

This multiple choice exam will contain 50 questions based on readings and lecture material. You will have one hour to finish the multiple choice questions individually, and this will count for 15%. In the second hour, a selection of 10 questions will be chosen from the initial midterm for you to complete as a group of 4-5 using IF-AT test cards. We will practice with IF-AT test cards as a group prior to the midterm. The score your group receives on the IF-AT test will count towards the other 5% allocated.

Midterm content will cover theory, methods, and tools used for research and activities in the context of water, health and wellbeing.

Term Project: 20% Inbox Exercise – To be completed in groups after coursework in April 2019

During this project, groups of students will role play two weeks in the life of a particular person assuming a particular role in an organization that is involved in the management of water resources. Groups will receive a suite of emails every other day for which they will need to reply, and begin a set of tasks (from prioritizing, conducting research, fact checking, calibrating equipment and taking measurements, predicting outcomes, assembling a working group, writing a policy brief, suggesting appropriate actions, etc.). Students will have to integrate knowledge and skills learned from the suite of Winter 2019 MWS courses to make decisions on how to reply and what actions to initiate. The exercise will following a deepening water management problem and test student's abilities to integrate knowledge from a variety of sources to provide critical information for decision making.

School and University policy statements

University of Saskatchewan Grading System (for graduate courses)

The following describes the relationship between literal descriptors and percentage scores for courses in the College of Graduate and Postdoctoral Studies:

90-100 Exceptional
A superior performance with consistent strong evidence of:

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent
A very good to excellent performance with strong evidence of:

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;
- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good
A satisfactory to good performance with evidence of:

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor
A generally weak performance, but with some evidence of:

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;

- some ability to examine the material in a critical and analytical manner.

<60 Failure
An unacceptable performance.

Program Requirements

- Percentage scores of at least 70% are required for a minimal pass performance in undergraduate courses taken by graduate students;
- Percentage scores of at least 70% are required for a minimal pass performance for each course which is included in a Ph.D. program;
- Percentage scores of at least 70% are required for a minimal pass performance in all courses used toward JSGS Public Policy and Public Administration programs and all core courses for Master of Public Health students, whether included in a Ph.D. program or a Master's program;
- For all other graduate courses, percentage scores of at least 60-69% are required for a minimal pass performance for each course which is included in a Master's program, provided that the student's Cumulative Weighted Average is at least 70%;
- Graduate courses for which students receive grades of 60-69% are minimally acceptable in a Postgraduate Diploma program, provided that the Cumulative Weighted Average is at least 65%;

Students should seek information on other program requirements in the Course & Program Catalogue and in academic unit publications.

Midterm and Final Examination Scheduling
Midterm and final examinations must be written on the date scheduled.

Final examinations may be scheduled at any time during the examination period (INSERT FIRST AND LAST DAY OF CURRENT EXAM PERIOD); students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures: https://students.usask.ca/academics/exams.php

Integrity Defined (from the Office of the University Secretary)
The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (https://secretariat.usask.ca/documents/student-conduct-appeals/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of

Complaints and Appeals (http://www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: http://www.usask.ca/secretariat/student-conduct-appeals/index.php

Examinations with Access and Equity Services (AES)
Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES policy and procedures. For more information, check www.students.usask.ca/aes, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations.
Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

Student Supports

Student Learning Services
Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site http://library.usask.ca/studentlearning/.

Student and Enrolment Services Division
The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the students' web site http://students.usask.ca.

Financial Support
Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (https://students.usask.ca/student-central.php).

Aboriginal Students Centre
The Aboriginal Students Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, brining Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful,

inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (https://www.facebook.com/aboriginalstudentscentre/) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success in their international education experiences at the U of S and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students and their families in their transition to the U of S and Saskatoon. ISSAC offers advising and support on all matters that affect international students and their families and on all matters related to studying abroad. Please visit students.usask.ca for more information.

UNIVERSITY OF SASKATCHEWAN

New Graduate Course Proposal
GSR 400.1

Course Information

Please append the Course Outline (Syllabus), including a separate Undergraduate Course Outline (Syllabus) if required. A syllabus template is available at **usask.ca/cgps/forms.php**

College	Department/Unit
SENS	NA
Authorizing Unit Head	Authorizing Unit Head Signature
Dr. Karsten Liber	K. Liber

INFORMATION REQUIRED FOR COURSE AND PROGRAM CATALOGUE

Label and Course Number	Course Title				
ENVS 829.3	River, Lake, and Wetland Science				
Total Course Hours	Lecture	Seminar	Lab	Tutorial	Other
39	20		19		
Weekly Course Hours	Lecture	Seminar	Lab	Tutorial	Other
19.5	10		9.5		

Term(s) in which course will be offered: (●) Term 1 ( ) Term 2 ( ) Term 1 or 2 ( ) Term 1 and 2

Course is to be offered: (●) Annually ( ) Biennially ( ) Alternate Years ( ) Other

Prerequisite(s) or restriction(s): Registration in the MWS Program, or instructors approval

If there are prerequisites, who can waive them: Department / Instructor: Instructor

Catalogue Description (not more than 50 words)

This course introduces river, lake and wetland science in the context of water security to students. This course will explore many of the physical, chemical and biological factors that characterize these water bodies. Students will learn, through case studies, many of the issues facing rivers, lakes and wetlands including dam and dam removal, eutrophication, wetland drainage, and invasive species.

Tuition code and any additional class fees:	Number of credit units:	Can this course be repeated for credit?
TC 31	3	( ) Yes (●) No

Are there any existing courses that should be set up as equivalent or mutually-exclusive? Specify:

no

CHECKLIST

- Course objectives need to be clearly stated
- Description of and Activities for Evaluation must be listed
- Course Outline (syllabus) with Reading List must be included
- Percentage of Total Mark for each evaluation listed
- Professor must be a member of the Graduate Faculty

If undergraduate lectures are included, also submit the Undergraduate Course Outline (Syllabus) and include information on what additional activities make this a graduate level course. For guidelines, see 'Undergraduate Component of Graduate Courses' under 'Forms for Graduate Chairs' at **usask.ca/cgps/forms.php**

EXAM EXEMPTION

Grade Mode	Will there be a final exam for this course
( ) Pass/Fail (P/F) (●) Percentage/Numeric ( ) Completed Requirements/In Progress/Not Completed Requirements (CR/IP/F)	(●) Yes ( ) No

If there is no final exam or if the final examination is worth less than 30% of the final grade, provide a brief statement which explains why a final examination is inappropriate for this course.

Rationale

What is the rationale for introducing this course

SENS has revised its Master of Water Security degree. This course has been created specifically to provide knowledge and skills relevant to this program.

Impact of Course

Are the programs/courses of other academic units/Colleges affected by this new course (possible duplication)?

○ Yes ◉ No

If yes, please list:

Were any other academic units asked to review or comment on the proposal?

○ Yes ○ No If yes, please attach correspondence

Will the offering of this course lead to the deletion or modification of any other course(s)?

○ Yes ◉ No

If yes, please list:

Course(s) for which this graduate course will be a prerequisite?

NA

Is this course to be required by your graduate students, or by graduate students in another program?

◉ Yes ○ No

If yes, please list:

Required for students in the MWS program.

Enrolment

Expected Enrolment
25

From which colleges/programs:
SENS

Resources

Proposed Instructor(s) (Please include qualifications):

Dr. Tim Jardine
PhD in Biology, University of New Brunswick
MSc in Biology, University of New Brunswick)
BSc (Honours) in Biology, Dalhousie University

How does the department plan to handle the additional teaching or administrative workload:
It will be part of the regular assignment of duties.

Are sufficient library or other research resources available for this course:
Yes

Are any additional resources required (library, audio-visual, technology, lab equipment, lab space, etc.):
No

Declaration

This course will conform to the academic requirements and standards for graduate courses, including the rules of Student Appeals in Academic Matters (usask.ca/university_secretary/council/reports_forms/reports/12-06-99.php) and Academic Integrity and Student Conduct (usask.ca/university_secretary/honesty/).

The signature of the Dean of your College signifies that the necessary resources are either available or shall be supplied by the College/Department budget.

Authorizing College Dean/Head	Signature	College Approval Date
Dr. Karsten Liber		19 September 2019

ENVS 829.3
River, Lake, and Wetland Science

School of Environment and Sustainability
Term 1, 2018/2019

MASTERS IN WATER SECURITY

UNIVERSITY OF SASKATCHEWAN

Course Coordinator	Tim Jardine	215 Toxicology Centre
	tim.jardine@usask.ca	306-966-4158

Course notes:	See course website http://bblearn.usask.ca
Time and location:	9:00 am to 12:00 pm and 1:00 pm to 2:00 pm, Monday October 28th to Friday November 1st and Monday November 4th to Friday November 8th; Education 1251
Assessment:	[Assignments 35%] [Participation 15%] [Final Exam 30%] [Term Project for MWS 20%]

Prerequisites:

Calendar description

This course, as part of the Masters of Water Security Program, seeks to introduce river, lake and wetland science in the context of water security to students. Further, this course will explore many of the physical, chemical and biological factors that characterize these water bodies. The students will learn, through case studies, many of the issues facing rivers, lakes and wetlands including dam and dam removal, eutrophication, wetland drainage, and invasive species.

Learning Outcomes

- Upon completion of the course, the student will be able to explain issues affecting the water quality, ecology, and ecosystem services provided by rivers, wetlands and lakes.
- Students will be able to:
    - Understand how the physical arrangement of rivers, wetlands and lakes affects ecosystem structure and function.
    - Conceptualize interactions between hydrological and biogeochemical processes that occur in watersheds.
    - Consider how climate change and land use/land cover changes affect key processes, ecosystem functions and associated services.
    - Discuss briefly management strategies to mitigate risks to aquatic ecosystems.

Course Overview

This course is designed to cover a broad range of topics as they relate to water security of rivers, lakes and wetlands. The course will use experiential learning, case studies, lectures and collaborative work to help build a strong understanding of challenges associated with water security.

Readings have been selected to provide background information, and support student involvement in classroom discussions and activities. Assignments are designed to encourage students to explore several aspects of water science, and support collaborative learning towards development of a deep understanding of an issue of interest, as it relates to sustainable water resources.

Course communications will be coordinated via BBLearn.

Required Reading Material

Readings for each day will be posted to BBLearn before the first day of class. These readings will consist of book chapters, journal articles and newspaper clippings. Much of the material presented in class and in-class activities will depend on the readings being done before class.

Class Schedule

Lecture will begin at 9am, followed by class discussion from 10am-12pm. The afternoon lecture will be from 1-2. The discussion period will integrate discussion around assignments and projects. The lecture and discussion will be fluid – further lecture will be given if there are points needing clarification. However, the goal is for each day to be a mix of lecture, self and group learning.

Date/room	Topics	Readings	Due
28-Oct/Education 1251	First Day of Lectures; Rivers, wetlands and lakes; Ecosystem Services	**Lecture A**: Optional - Wetzel Chap. 3 (pg 15-40) **Lecture B**: IPCC Working Group II: Impacts, Adaptation and Vulnerability; Chapter 5 Ecosystems and Their Goods and Services: Sections 5.1, 5.7 and 5.8 (http://www.ipcc.ch/ipccreports/tar/wg2/index.php?idp=196) & Carpenter, S. R.; Stanley, E. H.; Vander Zanden, M. J. State of the World's Freshwater Ecosystems: Physical, Chemical, and Biological Changes. Annu. Rev. Environ. Resour. 2011, 36, 75–99, doi:10.1146/annurev-environ-021810-094524.	
29-Oct/ Education 1251	Flow & sediment transport; Case study: Dams	**Lecture A**: Wetzel's 2001 Limnology Chapter 7, pg 107-111 (sections V. Internal Water Movements, A and B) **Lecture B**: Ritchie AC, Warrick JA, East AE, Magirl CS, Stevens AW, Bountry JA, et al. Morphodynamic evolution following sediment release from the world's largest dam removal. Sci Rep. Springer US; 2018;8: 13279. doi:10.1038/s41598-018-30817-8 **Selectively for case study research**: Xiong W, Wang H, Wang Q, Tang J, Bowler PA, Xie D, et al. Non-native species in the Three Gorges Dam Reservoir: status and risks. BioInvasions Rec. 2018;7: 153–158. doi:10.3391/bir.2018.7.2.06; Habets F, Molénat J, Carluer N, Douez O, Leenhardt D. The cumulative impacts of small reservoirs on hydrology: A review. Sci Total Environ. Elsevier B.V.; 2018;643: 850–867. doi:10.1016/j.scitotenv.2018.06.188; Beauchamp VB, Stromberg JC, Stutz JC. Flow regulation has minimal influence on mycorrhizal fungi of a semi-arid floodplain ecosystem despite changes in hydrology, soils, and vegetation. J Arid Environ. 2007;68: 188–205. doi:10.1016/j.jaridenv.2006.05.004	Worksheet
30-Oct/ Education 1251	Light and Heat	**Lecture A & B**: Stasko AD, Gunn JM, Johnston TA. Role of ambient light in structuring north-temperate fish communities: potential effects of increasing dissolved organic carbon concentration with a changing climate. Environ Rev. 2012;20: 173–190. doi:10.1139/a2012-010	Worksheet
31-Oct/ Education 1251	Carbon & Nitrogen Cycles	**Lecture A**: Finlay, K.; Leavitt, P. R.; Wissel, B.; Prairie, Y. T. Regulation of spatial and temporal variability of carbon flux in six hard-water lakes of the northern Great Plains. Limnol. Oceanogr. 2009, 54, 2553–2564. **Lecture B**: Howarth, R. Nitrogen. 2009. IN: Biogeochemistry of Inland Waters. Ed. Likens, G. E. Elsevier. P 400-407	Worksheet
1-Nov/ Education 1251	Phosphorus Cycle; Case study: Wetland Drainage	**Lecture A**: Orihel et al. Internal phosphorus loading in Canadian fresh waters: a critical review and data analysis. Can J Fish Aquat Sci. Canadian Science Publishing; 2017;74: 2005–2029. doi:10.1139/cjfas-2016-0500 Read from Introduction through "Sediment deposition versus diffusion". This is a long review, and only the intro review is likely worth your time. **Lecture B: Selective reading for case study research**: Blann KL, Anderson JL, Sands GR, Vondracek B. Effects of agricultural drainage on aquatic ecosystems: A review. Crit Rev Environ Sci Technol. 2009;39: 909–1001. doi:10.1080/10643380801977966; Brinson MM, Malvárez AI. Temperate freshwater wetlands: types, status, and threats. Environ Conserv. 2002;29: 115–133. doi:10.1017/S0376892902000085	
4-Nov/ Education 1251	Oxygen Cycle	Dissolved Gasses In Lakes in Reid: Ecology of Inland Waters and Estuaries, p 146-156; Salmi P, Malin I, Salonen K. Pumping of epilimnetic water into hypolimnion improves oxygen but not necessarily nutrient conditions in a lake recovering from eutrophication. Inl Waters. 2014;4: 425–434. doi:10.5268/IW-4.4.631	Written Case Study

5-Nov/ Education 1251	Primary producers and Food Webs	Galloway AWE, Taipale SJ, Hiltunen M, Peltomaa E, Strandberg U, Brett MT, et al. Diet-specific biomarkers show that high-quality phytoplankton fuels herbivorous zooplankton in large boreal lakes. Freshw Biol. 2014;59: 1902–1915. doi:10.1111/fwb.12394	Worksheet
6-Nov/ Education 1251	Case study: Eutrophication	**Lecture A**: Conley DJ, Paerl HW, Howarth RW, Boesch DF, Seitzinger SP, Havens KE, et al. Controlling eutrophication: nitrogen and phosphorus. Science. 2009;323: 1014–1015. doi:10.1126/science.1167755; **Lecture B**: Schindler DW, Hecky RE, McCullough GK. The rapid eutrophication of Lake Winnipeg: Greening under global change. J Great Lakes Res. Elsevier B.V.; 2012;38: 6–13. doi:10.1016/j.jglr.2012.04.003	
7-Nov/ Education 1251	Invasive Species; Case study: zebra mussel	Strayer, D. L. Alien species in fresh waters: Ecological effects, interactions with other stressors, and prospects for the future. Freshw. Biol. 55, 152–174 (2010); **Selective readings:** Gallardo, B., Clavero, M., Sánchez, M. I. & Vilà, M. Global ecological impacts of invasive species in aquatic ecosystems. Glob. Chang. Biol. 22, 151–163 (2016); Ogunniyi, T., Balogun, H. & Shasanya, B. Ectoparasites and endoparasites of peridomestic house-rats in Ile-Ife, Nigeria and implication on human health. Iran. J. Parasitol. 9, 134–140 (2014); Paerl, H. W. & Huisman, J. Climate change: A catalyst for global expansion of harmful cyanobacterial blooms. Environ. Microbiol. Rep. 1, 27–37 (2009).	Worksheet
8-Nov/ Education 1251	Exam	NA	

Grading Scheme

Component	% of final grade
Worksheets	15%
Participation	15%
Written Case Study	20%
Final exam on River, Lake and Wetland Science	30%
Term Project for MWS	20%
Total	100%

Summary of Evaluation Components

Assignment: Worksheets

Purpose: These worksheets present problems to assess student quantitative and qualitative understanding of the material presented in the readings and lectures.
Description: Short one-to-two page worksheets will be completed in class or turned in the next day. The worksheets will include quantitative and qualitative questions – likely similar to exam material for the short answer portion.

Participation

Purpose: Engaging in dialogue is a key skill for water security professionals. Leading and participating in discussions will allow students to practice this skill.
Description: Students will be expected to contribute to in-class discussions in two ways. The first (5% of grade) will involve regular participation in lectures and group discussions by asking and answering questions in a thoughtful and respectful manner. The second (10% of grade) will involve leading a discussion by summarizing a written article and guiding the rest of the class through a series of questions related to the article. Assessment will be based on the student's readiness and advance preparation, and how well they engaged classmates on the topic. Each student will be assigned a reading to lead at some point in the semester.

Assignment: Written Case study

Purpose: The written case study encourages students to tackle a problem and explain it in written form. The students will assess the issues of concern as it relates to water security, what the risk factors are for this particular problem and evaluation of solutions that have or have not worked and potential new solutions.
Description: Choose either a dam removal, wetland drainage, eutrophication or invasive species case study, **not presented in class**, and develop a written report. This report will be approximately 1250-1750 words long and should include the following information: introduction to the issue, how it relates to water security, evaluation of past and current solutions, the current state of the issue and works cited.

> Other case studies will be considered outside of the topics presented in class but require **instructor approval** and have to have clear implications for water security of rivers, lakes and wetlands.

Exam:

Purpose: The goal of the exam is for students to demonstrate their knowledge of major topics and concepts discussed in class, and their ability to synthesize and apply course materials.
Description: This will be a closed-book exam; however, a list of potential questions for the final exam will be provided in advance. The exam will be a mix of short and long answer questions and will contribute 30% to the final grade.

Rubric for Assignments

Objectives	Low Performance <70%	About or Below Average 71-85%	Exemplary Performance 85% or above
Answer questions and required components	Questions not answered and/or missing required components	Question answers are vague, high level of understanding not demonstrated. Components are present, but do not meet all requirements indicated in the instructions.	Questions are answered in a clear and concise manner and mastery of concepts is clear. All components are present and meet or exceed all requirements.
Content and Approach	Concepts were not explained, missing key points or poorly expressed. Background research does not appear to support approach.	Understanding of concepts is superficial, and some explanations are vague. Some background evidence is presented.	Appropriate literature and sources are cited and a solid grasp of the concepts is clear.
Writing/ Communication	The work was dull and little or no effort was made to connect to the reader/listener. Writing was hard to read due to poor clarity, organization or spelling/grammar.	An effort was made to make it interesting to reader/listener. The writing was clear and organized. Some issues of clarity, organization or grammar/spelling.	Clear effort was made to engage reader/listener. Writing was well done, easy to understand, succinct and organized.
Evidence of background research and context	Little or no reference to sources. Missing key points and context.	Some source materials are mentioned, but not well integrated into the text. A well-articulated context is presented.	Appropriate literature is used to make arguments and demonstrates a well-articulated understanding of the background materials and context.

Term project: An assessment of the anticipated consequences of wetland drainage at the St Denis National Wildlife Area, SK

Objective

The objective of this term project is to synthesize and apply the skills and knowledge that you have acquired from your Term 1 classes. You must demonstrate understanding and apply techniques from each class: ENVS806 Field Skills in Water Security Research; GEOG 826 Fundamentals of Hydrology; ENVS805 Data Analysis and Management - MWS; ENVS 815 Modeling for Water Security; ENVS 829 River, Lake, and Wetland Science.

Problem

Wetland drainage is a major issue in the Canadian prairies. Wetlands are drained to increase arable land and improve trafficability for agricultural producers, but wetland drainage is also associated with negative hydrological and ecological consequences. You are to assess a (hypothetical) proposal to drain Pond 109 into Pond 90 at St Denis. You will be provided with hydrological and biogeochemical data for the various ponds and surrounding uplands and watershed. You are to use your knowledge of hydrological processes and biogeochemical processes and your skills in data analysis and modelling to assess the likely impact of this drainage, with particular emphasis on downstream flood risk, and changes in the productivity and eutrophic status of the various wetlands involved.

Assessment

The project will be undertaken and assessed in teams, with a collectively agreed upon assignment of duties.

This project is worth 20% of each of the five 3CU classes: ENVS806 Field Skills in Water Security Research; GEOG 826 Fundamentals of Hydrology; ENVS805 Data Analysis and Management - MWS; ENVS 815 Modeling for Water Security; ENVS 829 River, Lake, and Wetland Science.

A single report (pdf file) is to be submitted electronically to Andrew Ireson. The report should contain the following sections, with the mark breakdown provided

Item	Mark
Cover sheet: Title and team members	NA
Executive summary (1 page max)	15%
Table of contents	NA
Assignment of duties	5%
Description of the problem	10%
Data analysis and interpretation	20%
Modelling	20%
Synthesis	10%
Conclusions and recommendations	10%

Peer evaluation	10%

The peer evaluation is completed individually, and submitted separately from the report. In the peer evaluation you must provide an assessment of the contribution of each of the other members of your team and a mark out of 10 for their performance. This will be confidential.

Submitting Assignments

Written assignments must be submitted at the start of class. You should keep a personal copy of all assignments submitted. Late assignments will be accepted up to 3 days after the assignment due date but will be penalized at 10% per day. Students may submit late assignments electronically to tim.jardine@usask.ca. Where extenuating circumstances exist, students are advised to contact the instructor immediately to make suitable arrangements regarding extensions. All grading will be evaluated fairly based on the rubrics outlined above.

Acknowledgements

This course was developed by Dr. Emily Cavaliere using tools and approaches shared by Drs. Irena Creed, Andrew Ireson and Helen Baulch. Rubrics were modified from those developed by Dr. Maureen Reed.

School and University policy statements

1. Grading System Description

SENS uses the following grading system as adopted by the CGPS:

90-100 Exceptional

A superior performance with consistent strong evidence of

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;
- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good

A satisfactory to good performance with evidence of

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;
- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

2. Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled.
Final examinations may be scheduled at any time during the examination period; students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is

unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures:
http://students.usask.ca/academics/exams.php

3. Assessment Issues and Grade Disputes
A student shall be permitted to see any examination unless otherwise stated at the beginning of the course. Students dissatisfied with the assessment of their work in any aspect of course work, including midterm or final examination should consult the University policy '*Student Appeals or Evaluation, Grading and Academic Standing'* found at the Office of the University Secretary:
http://policies.usask.ca/policies/student-affairs-and-activities/student-appeals.php

4. Examinations with Access and Equity Services (AES)
Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES policy and procedures. For more information, check www.students.usask.ca/aes, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

5. Academic Honesty
The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/secretariat/student-conduct-appeals/)

For more information on what academic integrity means for students see the Academic Integrity Awareness site at: http://www.usask.ca/integrity/index.php

6. Recording
The syllabus must include a notice of whether the instructor intends to record lectures and whether students are permitted to record lectures.

Student Supports

Student Learning Services

Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site http://library.usask.ca/studentlearning/.

Student and Enrolment Services Division

The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the students' web site http://students.usask.ca.

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (https://students.usask.ca/student-central.php).

Aboriginal Students Centre

The Aboriginal Students Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, brining Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (https://www.facebook.com/aboriginalstudentscentre/) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success in their international education experiences at the U of S and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students and their families in their transition to the U of S and Saskatoon. ISSAC offers advising and support on all matters that affect international students and their families and on all matters related to studying abroad. Please visit students.usask.ca for more information.

UNIVERSITY OF SASKATCHEWAN
School of Environment and Sustainability

Academic Integrity Checklist

Honesty and integrity are expected of every student at the University of Saskatchewan. There are many forms of academic misconduct; perhaps the most common is plagiarism. According to the University of Saskatchewan Guidelines for Academic Conduct:

"Plagiarism is the theft of the intellectual creation of another person without proper attribution. It is the use of someone else's words or ideas or data without proper documentation or acknowledgment. Quotations must be clearly marked, and sources of information, ideas, or opinions of others must be clearly indicated in all written work. This applies to paraphrased ideas as well as to direct quotations. A student must acknowledge and fairly recognize any contributions made to their personal research and scholarly work by others, including other students."

There are many resources on campus to assist you with proper citation and paraphrasing.

- For guidance on when and how to quote from other documents and how to properly paraphrase information in other documents, see http://library.usask.ca/howto/honesty.php.
- To learn about different styles of citation and how to properly cite a variety of different sources including statistics, archival materials, maps, legal documents and government reports, see http://libguides.usask.ca/citation.

When in doubt about a citation requirement or your approach to paraphrasing, ask your librarian or your course instructor or your academic supervisor for assistance.

Before you submit any written work, review it against the following checklist:[1]

- ❒ I have acknowledged the use of all ideas with accurate citations.
- ❒ I have used the words of another author, instructor, information source, etc., and I have properly acknowledged this and used proper citation.
- ❒ In paraphrasing the work of others, I have put the idea into my own words and did not just change some words or rearrange the sentence structure.
- ❒ I have checked my work against my notes to be sure that I have correctly referenced all quotes or ideas.
- ❒ When using direct quotations I have used quotation marks (or other means to clearly identify the quoted text) and provided full citations.
- ❒ Apart from material that is a direct quotation, everything else in the work is presented in my own words.
- ❒ When paraphrasing the work of others I have acknowledged the source or the central idea.
- ❒ I have checked all citations for accuracy (e.g. page numbers, journal volume, dates, web page addresses).
- ❒ I have used a recognized reference style (i.e. APA, MLA, Chicago etc.) consistently throughout my work.
- ❒ My list of references/ bibliography includes all of the sources used to complete the work.
- ❒ I have accurately and completely described any data or evidence I have collected or used.
- ❒ I fully understand all of the content (e.g., terms, concepts, theories, data, equations, ideas) of the work that I am submitting.
- ❒ The content of the work has not been shared with another student, unless permitted by the instructor.
- ❒ The content of the work reflects wholly my own intellectual contribution or analysis and not that of another student(s), unless the instructor approved the submission of group or collaborative work.
- ❒ If another person proofread my work it was for the sole purpose of indicating areas of concern, which I then corrected myself.
- ❒ This work has not been submitted, whole or in part, for credit in another course or at another institution, without the permission of the current course instructor(s).
- ❒ I understand the University of Saskatchewan's policy and expectations concerning academic honesty and the consequences of plagiarism or other forms of academic misconduct.

[1] Compiled based on York University (http://www.yorku.ca/tutorial/academic_integrity/acadintechecklist.html), Curtin University (http://academicintegrity.curtin.edu.au/global/checklist.cfm, University of Toronto (http://www.utoronto.ca/academicintegrity/resourcesforstudents.html), and Skidmore College (http://cms.skidmore.edu/advising/integrity/checklist.cfm) checklists for academic integrity.

ENVS 992.6

Project in Water Security

School of Environment and Sustainability

[Summer, 2019]

MASTERS IN WATER SECURITY

UNIVERSITY OF SASKATCHEWAN

Course Coordinator	Graham Strickert	Kirk Hall 334
	Graham.strickert@usask.ca	306 966 2403 (Internal: 2403)
Course notes:	See course website http://bblearn.usask.ca	
Assessment:	Project Management Skills	20%
	Project report	50%
	Project presentation	20%
	Professional performance	10%
Prerequisites:	Registration in the MWS Program	

Calendar Description

The objective of this course is to allow students to investigate applied topics in water security, including scientific, technical, social, economic, cultural, institutional, or other appropriate aspects through the completion of a project. The project engages students in active, service learning and takes place in collaboration with a partner organization in industry, consultancy, governmental or non-governmental organization, or with an academic partner from the U of S.

Course Description:

Students will be trained on campus in essential writing skills and essential management skills (leadership, communication, entrepreneurship, project and financial management), in short workshop style courses held in terms 1 and 2. An individual or team-based project will be undertaken, in which students work with a partner organization on a water security problem. Projects will be interdisciplinary in scope. Through active hands-on experience, students will be well-equipped to begin a successful career in water security. The project ends with a capstone event, attended by partner organizations and the SENS and GIWS community, where all students present their project outcomes.

Learning Outcomes

Over the course duration students will:

- Gain valuable practical experience and depth of understanding in the project area of focus.
- Contribute to the partner organizations objectives, including pushing forward research.
- Experience, understand and learn to manage team dynamics, including conflict.
- Develop critical thinking about connections between the subject matter of their studies and their experiences with partner organizations.
- Increase their awareness of community dynamics and opportunities for engagement.
- Have opportunities for practical application of theory.
- Develop an enhanced sense of independence and personal responsibility for learning and fulfilling the project outcomes.

Important Dates in 2019/20

Oct 25	Essential Writing Skills
Feb 10-14	Essential Management Skills
May 11-Aug 21	Projects (15 weeks duration). Internal deadlines will be worked out with partners
Aug 24-Aug 26	Capstone event – scheduled for 1/2 day this week

Detailed course subject description

Overview

The ENVS 992 course involves one week of on campus training in areas around writing and management, to provide students with a strong foundation for the subsequent projects, which are to be undertaken with partner organizations, either with individual students, or in interdisciplinary teams. Students will be provided with a list of potential projects, and will apply for a position on the projects they are interested in. Individual projects are be acceptable if desired by the partner organization. In the case of team projects, students will be in groups of 2 – 3, where each individual in the team has a defined role in the project. The project duration is 15 weeks, and finishes in the final week of August, with a capstone event. Further details about each of these components are described below.

Essential writing and management skills

This suite of five short courses will be led by Dr. Graham Strickert. We will also invite guest professionals to share experiences and tips on various aspects of project management. These visits will be a mix of formal presentations and informal chats. In 2019, we are seeking to include professionals with expertise in project management. Additional content and activities will be facilitated by Dr. Strickert. The core course content is divided into six categories:

1. **Writing effectively**
2. **Leadership**
3. **Communication**
4. **Entrepreneurship**
5. **Project management**
6. **Financial management**

In each case, roughly 4 hours of class time will be dedicated to each subject, over 5 days.

Reading List for Short Courses:

Entrepreneurship:

Kahane, A., (2018) Collaborating with the Enemy: How to work with people you don't agree with or like or trust. Berrett-Keohler Publishers, Inc. e-book ISBN 978-1-62656-824-2

Kahana, T., (2018) Trust: Creating the Foundation for Entrepreneurship in Developing Countries. Berrett-Koehler Publishers. ISBN 10 – 1523094834.

Swanson L. (2018) Entrepreneurship and Innovation Tool Kit https://openpress.usask.ca/entrepreneurshipandinnovationtoolkit/ Ebook: ISBN 978-0-88880-615-4

Leadership:

Morelle, M., and Capparell, S., (2002) Shackleton's Way: Leadership Lessons from the Great Antarctic Explorer. Penguin Books, New York, New York.

Covery, S., (1989) The 7 Habbits of Highly Effective People. Free Press .

Greenleaft, R. K., (1977). A Journey Into the Nature of Legitimate Power and Greatness. Paulist Press, Mahwah, New Jersey.

Communication:

Strickert, G. E., & Bradford, L. E. A. (2015). Of Research Pings and Ping–Pong Balls: The Use of Forum Theater for Engaged Water Security Research. *International Journal of Qualitative Methods*, *14*(5), 1609406915621409.

Paternson, K., Grenny, J., McMillan, R., and Switzler, A., (2011) Crucial Conversations Tools for Talking When the Stakes are High. McGraw-Hill Co. ISBN 978-0-07-177132-0.

Cargnegie, D., (1936) How to Win Friends and Influence People. Simon & Schuster Publishers.

Projects

Project roles

MWS Program Director (PD) Andrew Ireson	Design of the ENVS992 course and implementation of continual improvements, works with the PI to coordinate and oversee the projects.
ENVS992 Program Instructor (PI) Graham Strickert	ENVS 992 course coordinator, responsible for finding projects and partners, facilitating the matching of students with projects in teams. PI is in charge of coordinating two short courses: "essential writing skills", around reading week time in Term 1, and "essential management skills" around reading week in Term 2.
Work placement coordinator (PC) TBD	Works with the PI to find projects and partners and facilitate the matching of students with projects in teams, oversees each student's progress with a monthly individual check-in (by email or in person), and organizing the capstone event. PI and PC are responsible for cultivating our relationships with external partners, and expanding the network as much as possible. PC will maintain a database of partners.
Faculty advisor Various SENS faculty	Each team will have a faculty advisor who will likely be familiar with the partner organization. The faculty advisor will not normally be involved in the day to day running of the project (unless they choose to be), but should meet with the team at the outset of the project to discuss the plan, and will marking the project deliverables during the capstone event and at the end of the project.
External advisor From partner organization	A member of the partner organization who is the primary contact for the student team, organizes resources for the students (data, software, literature, other), facilitates meetings with the student team and organization, as appropriate, and helps determine the project deliverable such that it is useful to the partner organization. There should be monthly updates (by email or in person) from the team, with the external advisor member providing timely and meaningful feedback.
Student	Individual students are to take personal responsibility for their engagement in the team project. Each student will have an individual deliverable, as well as a group deliverable, and must work in a professional manner with their team-mates, advisors and the program coordinator.

Project matching

Stage 1. Behind the scenes, the PD, PI and PC are continuously building relationships with partners who can participate in projects. By the end of Term 1 a database of specific projects will be finalized, with the following details:

Partner project database details:

1. *Project title*
2. *Partner organization name, location, and type*
3. *Partner contact details*
4. *Faculty advisor*
5. *Project location, and working arrangements if students not based on campus*
6. *Location and approximate timing of any field work*
7. *Brief description of the problem to be addressed*
8. *Brief overview of the methods and disciplines that will be employed*
9. *List of any required resources, and how these will be provided (e.g. travel funding, equipment, software, etc.).*

The database will be shared with all students over the winter break, and they will be invited to apply for projects, either individually, or in self-organized groups.

Stage 2. At the end of Term 1, students complete the following questionnaire about their aspirations:

MWS Student Questionnaire:

1. *In terms of the range of content that we cover in the MWS, what area is of most interest to you?*
2. *Do you know what sector you wish to work after your MWS – consultancy, government, industry, academia, NGOs?*
3. *Do you know specifically what kind of job you would like – and if so can you provide some details, including the role (management, technical expert, etc)?*
4. *Where would you like to work: anywhere, in Saskatchewan, Canada or internationally (list ideal countries or areas. If you have specific organizations in mind, please list here)?*
5. *Would you to work in the field or in the office?*
6. *Do you want to be your own boss, work for a small company, or be part of a larger institution?*
7. *Anything else you would like to mention about your future plans, not captured above?*

These responses will be used by the PI/PC to assist in the project matching process and follow up on any additional suggested projects that the students may provide.

Stage 3. In January, the students apply for the projects. The application process is designed to emulate the job market and provide valuable job seeking experience to the students. The students must provide a short cover letter and a curriculum vitae. The most compelling applications will be offered interviews by the advisors, and those that pass the interview successfully will be given the projects of their choice. The PI and PD will oversee this process to ensure that the process is fair and that all students get projects that are acceptable to them in the end. In advance, a session provided by the Student Employment and Career Centre will be arranged to assist the students in preparing for the application and interview process.

Stage 4. In February, the students will be matched with projects and students and advisors will be notified. At this point, it is acceptable for the advisors (faculty and external) to provide reading materials to the students, but it is not expected that any project work will be undertaken until the start of the project, defined in the important dates on page 1 of the syllabus.

Working on the project

Students are expected to work full time (around 40 hours a week) for the 15-week duration of the project. The working arrangements (office space, location, field work logistics) are to be determined by the team, faculty advisor and external advisor. These arrangements must be documented in the project plan, which is to be drafted in the first two weeks of the project and included in Appendix A of the final project report.

The plan should include specific deliverables with deadlines, and individual's tasks. You will not lose marks in your project for not sticking rigidly to the original plan, but you should demonstrate in your reports (see next item below) that you have adapted and updated your planning as events and the project unfold.

Students are expected to manage their activities. As a team or individually, students must report to their advisors on a monthly basis, with a concise report that addresses each of the following headings:

Heading with the project title, report number, date, student names.

1. Work completed in the last reporting period
2. Team meetings held in the last reporting period (dates, times, attendance)
3. Planned work for the next reporting period
4. Information requested from advisors or partners
5. Summary of any challenges
6. Summary of progress against the project plan

This report can be short and relatively simple (these are live working documents and should reflect that), but must be clear. The report can be shared by email. These reports will also go into Appendix B in the final report.

Project deliverable

All student projects will deliver a report conforming to the content requirements laid out below. Document templates are provided in markdown language (https://github.com/adam-p/markdown-here/wiki/Markdown-Cheatsheet), which include the font styles to be used, the MWS logo and text, and scripts are available to convert the markdown into html and a word document (details are at https://git.cs.usask.ca/ani378/mws_992_report). To compile your markdown report to Word/html, the program pandoc is used, and a Makefile is provided to do this compilation (configured for a Mac/Linux operating system). You are not required to compile the documents yourself, and Andrew/Andrew's lab group are available to help with technical questions on this anytime. These reports will be archived electronically in SENS, and publicly available through the SENS website, which is why adherence to the style and content guidelines is so important. If you are working on an individual project, you will have to individually author all required sections of the report. The lengths of some individual sections are indicated below, and correspond to the page count when the document is compiled into Word. The overall report, not including appendices, should ideally be between 20 – 40 pages in length. These are guidelines and not strict limits, but marks can be deducted if the report is excessively lengthy, particularly if the writing is not concise, or if the report is insufficiently detailed in content.

Header page: Page 1. Title, student names, date of project, name of partner organization, name of faculty advisor, standard MWS logo and text.

Executive summary: Page 2. Assume that 90% of readers in future will only read this – must summarize the problem, what you did, how you did it, what you found, and what still needs to be done.

Table of contents: Page 3.

Introduction: Description of background to the problem, including a literature review. May include a short profile of the partner organization and their specific problem. End the introduction with a set of project objectives.

Site description: If applicable, the location of the field site where the project was based must be provided, with site coordinates (northings, eastings) and if applicable/available, an overview of the climate, vegetation, hydrology, geology, soils, and land use.

Next, ***individually authored sections*** should be included, which describe in detail the methods and results of various aspects of the work. In each case, the author should be identified, and each team member should lead one section. These sections should not exceed 6 pages in total, including figures, and can include any of the following:

Field work: Describe any field work that was undertaken, including the rationale, the experimental design, description of instrumentation, results, interpretation and conclusions. You must be concise. If additional details are generated which will be useful to future workers, these can be included in an appendix (after Appendix B).

Modelling exercise: Describe the objective of the modelling exercise, describe the model used and any relevant methods, provide results and a conclusion. You must be concise. If additional details are generated which will be useful to future workers, these can be included in an appendix (after Appendix B).

Data analysis: If a substantial component of the work involves statistical analysis of existing data, which could include environmental, economic or social data, and could be time series data or spatial (GIS) data, this should be written up as a separate section. Include the objectives of the analysis, the data available (including the source of the data), quality assurance and quality control activities that were performed on the data by you, methods of analysis, results, including figures, interpretation and conclusions. Often appropriate plots of data are preferable to formal statistical analyses. You must be concise. If additional details are generated which will be useful to future workers, these can be included in an appendix (after Appendix B).

Social science research: Investigation of a social phenomenon using conventional (i.e., interviews, focus groups) or engaged social science research methods (workshops in communities, arts-based methods, photovoice, sharing circles, etc.). Appropriate ethics certifications or waivers must be sought prior to data co-gathering. Reporting should be concise and include details on the approach, methods, results, analyses, conclusions and any recommendations arising from the work. An appendix may be included with ethics certification, interview or focus group guides, and exemplars of data (after Appendix B).

Policy Analysis: an analysis of existing or proposed policy could be completed using an established framework. Outputs may include but are not limited to: identification and characteristics of stakeholders in opposition on policy maps, policy comparisons, power analyses, SWOT, cost-benefit, drafting policy briefs, or compiling and analyzing measurements of policy progress.

The final sections are again ***authored by the team collectively*** and must include the following:

Summary of findings: 1 page of writing, with additional figures (i.e. you are encouraged to include figures, in particular conceptual diagrams, if these support your findings, and these don't count towards the page limit). In this section, the conclusions from the individual components are brought together, showing how these are related to one another and how they support, or contradict one another. The overall findings are summarized, concisely. Do not repeat the results from earlier sections, but emphasize take home messages and conclusions. The primary audience for this section is your faculty advisor and the academic community.

Towards a solution: 1 page of writing, with additional figures or tables. In this section, you have the opportunity to either present a prototype solution to the partner organization, or provide a number of

future recommendations for further research towards a solution. For the prototype solution, you might provide a detailed method or policy, which could be expressed as a conceptual diagram, a flow chart, a table, or as a single page of text. For the further research, you should outline the outstanding problems that need to be overcome or understood to solve this problem, and you should try to make concrete recommendations for what the partner organization should do next to move towards a solution. The primary audience for this section is your external advisor and partner organization.

Acknowledgements: short section thanking individuals and sources of funding, if applicable.

References: Use APA style for references and consider using a reference manager, such as Zotero.

Appendices will be included in the final report, and will be archived, but may not be shared publicly on the website (unless relevant to include). The appendices include the following sections:

Appendix A: Project plan *(drafted in the first 2 weeks of the project)*

Appendix B: Monthly advisor reports *(drafted throughout the project – important these are actually done)*

Capstone event

In the ½ day capstone event, MWS student present their work to each other, faculty, partner organizations and the SENS and GIWS student body. Note particularly that incoming MWS students for the next year will all be invited to attend this event. This will be held from 13:00 to 17:00 on Friday 23rd August, immediately followed by a social activity from 17:00 to 18:30 in room ESB 112. Students are to prepare a 10 minute powerpoint or pdf presentation, and the time limit is strict. There will be 5 minutes for questions for each presentation. Students should design presentations that convey the problem statement, the methods and results, the findings and proposed solution, and a personal reflection of what they learned over the course of the project. Marks will be given for the quality of presentation materials, clarity of delivery and engagement of the audience. Each MWS student must ask at least one question of another student during the Q&A periods. Also, each MWS student will be asked to write a single sentence that describes the take home message from each presentation, and these will be provided to the presenters, so that they learn what the audience takes away from their talk.

Detailed assessment of students

The ENVS 992 project is worth 6 credit units. The ENVS992 project are to be marked by two individuals: the external advisor and the faculty advisor. In the situation where only one individual is able to mark the project, the program director will provide the second mark. The program director will review the marks, and provide a final mark based on the two independent recommendations. An overview of the mark breakdown is given below, followed by the marking template with the detailed mark breakdown. The marking template will be used by the two markers.

Project management short courses (20%)

The project management short courses will be assessed by a single take home exam, to be completed after the courses have been completed. The exam will test students' understanding of the concepts covered by all instructors and guest lecturers, and will largely comprise short written answers. 48 hours will be allowed to complete the exam. The exam is work 20% of the grade for ENVS992. High marks will be given for clear answers that demonstrate understanding of the concepts, correct answers to questions, good English and evidence of critical thinking. Poor marks will be given for unclear explanations, contradictions, standard textbook answers that do not demonstrate individual understanding, incorrect

answers to questions, and poor English. Students should provide references if appropriate and plagiarism will not be tolerated and will result in a mark of zero.

Individual/Team project report (50%)

The team project report must conform to the style and content guidelines provided above to be acceptable. The detailed mark breakdown is provided below in the Marking template.

Project capstone event (20%)

The capstone event includes a team or individual presentation, worth 20%. These will be assessed by at least two of the following: the external advisor, the faculty advisor, the ____ and the program director. Good marks will be awarded for high quality presentation materials, clear communication, engagement of all team members, and for actively and effectively engaging the audience. Poor marks will be awarded for unclear presentations, with poor graphics, unorganized structure and unclear take home messages, and for failing to engage the audience in the activity.

Professional performance (10%)

This discretionary mark will be awarded to individuals by the MWS program director and faculty advisor, and reflects how effectively and enthusiastically the student engaged with the project. High marks will be given for good organizational skills, good time management, good attendance in team meetings, positive approaches to problem solving in the team and with the partners, proactive engagement in the project (e.g. actively contributing to discussions, having ideas and sharing them), and completing the planning documents (Appendix A and B). Poor marks will be given for missing meetings, missing deadlines and not planning effectively in response to this, failing to engage with team-mates and partners, and failing to complete the planning documents.

Marking template

Overview

The ENVS992 projects are to be marked by two individuals: the external advisor and the faculty advisor. In the situation where only one individual is able to mark the project, the program director will provide the second mark. The program director will review the marks, and provide a final mark based on the two independent recommendations.

The ENVS 992 project is worth 6 credit units, broken down as follows

Project management skills	20%
Project report	50%
Project presentation	20%
Professional performance	10%

Project management skills marks are provided by Dr Graham Strickert and are not addressed here.

For guidance for markers, a grade of less than 60% is a fail; 60-69% is poor; 70-79% is satisfactory to good; 80-89% is very good to excellent; and 90% and above is exceptional. 80% is an important threshold – grades above this may be required to qualify for entrance into further degree programs and/or scholarships in those programs. Note also that you do not have to give whole numbers for marks in the various sections – e.g. you could give someone 7.7 out of 10 to indicate an equivalent grade of 77%. For further guidance see Appendix II below.

Instructions

To mark the ENVS992 project, please complete the following marking template. The report deadline is August 23rd at midday, and the capstone event starts on the same day at 13:00. This completed document with recommended marks should be submitted to Andrew Ireson (andrew.ireson@usask.ca) by August 28th, 2019.

Your name:	
Organization:	
Student:	
Date:	

PROFESSIONAL PERFORMANCE (10% - 0.6 CU)

It is difficult to provide a prescribed mark breakdown for this section. It would be very helpful if markers could provide written feedback in the various categories and an overall mark out of 10 which broadly reflects the partner's level of satisfaction and impression of the student's performance.

Feedback to be shared with the student		
Are you happy with the student's level of contact/responsiveness during this project?		
Are you happy with the student's professionalism during this project?		
Did the student use creative approaches to solve problems? Did they show initiative and independence?		
Did the student face any particular challenges during the project and did they take a positive approach to overcome these?		
FINAL RECOMMENDED GRADE		/10

Private feedback for the Program Director/Staff only (optional)	
Is there anything you would like to share privately with the MWS staff? This will not be shared with the student.	

PROJECT REPORT (50% - 3 CU)

Use this table to mark the written project report. *Note the suggested mark breakdown for each individual question within the sections are recommendations only – if you feel more weight should be given to one category you are free to change the breakdown as you see fit. The only requirement is that a mark for each section ("SECTION RECOMMENDED GRADE") and the overall report ("FINAL RECOMMENDED GRADE") are graded out of the totals provided.

Section	Detail	Marker comments	Suggested mark*
Executive summary	Is the writing clear and within 1 page?		/3
	Can the problem be understood?		/2
	Are the methods described concisely?		/2
	Are there clear findings and recommendations?		/3
	SECTION RECOMMENDED GRADE		**/10**
Common sections	*Introduction* Does the Introduction describe the problem and background clearly? Is the literature review well-researched and comprehensive, with appropriate sources cited? Is the writing comprehensive and clear?		/7
	Site description Are adequate details provided?		/3
	Summary of findings Does the summary reflect the work that was done and draw viable conclusions? Is the writing comprehensive and clear?		/6

	Towards a solution Does the solution, which may be a recommendation for further research, address the partner's priorities and concerns directly? Is it credible? Is it well written?		/4
	SECTION RECOMMENDED GRADE		**/20**
Detailed section(s) (see Appendix I for examples of what these might be)	*Chosen approach* Has the student chosen an appropriate methodological approach to the partner's problem?		/2
	Methods Are the methods appropriate, and clearly described?		/6
	Results – use of figures Are high quality figures used to convey the results and/or summarize findings?		/4
	Results – general Do the results presented address the core problem? Are the interpretations appropriate and useful?		/4
	Quality of presentation Is the report generally well presented with good English, good structure, no formatting errors and appropriate figures?		/4
	SECTION RECOMMENDED GRADE		/20
FINAL RECOMMENDED GRADE			/50

CAPSTONE EVENT (20% - 1.2 CU)

Use this table to mark the presentations delivered at the capstone event. *Note, the mark breakdown is a recommendation only and can be modified if desired, as long as an overall grade out of 20 is provided.

Criteria	**Marker comments**	**Suggested mark***
Problem statement. The partner priorities and concerns are well expressed, and a clear problem statement is formulated.		/3
Methods and results. The methods selected are appropriate, a clear justification is provided and the methodological details are clearly explained. Appropriate figures/graphics are used to present the key results. Clear and appropriate interpretations are provided.		/3
Findings and solution. Conclusions are consistent with the results and recommendations are appropriate. There is a clear take home message.		/4
Quality of the presentation materials. The slides are readable, appropriate in number and well laid out with good English.		/6
Audience engagement. The presentation is well tailored to the audience and questions are responded to well.		/4
FINAL RECOMMENDED GRADE		/20

School and University policy statements

University of Saskatchewan Grading System (for graduate courses)

The following describes the relationship between literal descriptors and percentage scores for courses in the College of Graduate and Postdoctoral Studies:

90-100 Exceptional
A superior performance with consistent strong evidence of:

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent
A very good to excellent performance with strong evidence of:

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;
- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good
A satisfactory to good performance with evidence of:

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor
A generally weak performance, but with some evidence of:

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;

- some ability to examine the material in a critical and analytical manner.

<60 Failure
An unacceptable performance.

Program Requirements

- Percentage scores of at least 70% are required for a minimal pass performance in undergraduate courses taken by graduate students;
- Percentage scores of at least 70% are required for a minimal pass performance for each course which is included in a Ph.D. program;
- Percentage scores of at least 70% are required for a minimal pass performance in all courses used toward JSGS Public Policy and Public Administration programs and all core courses for Master of Public Health students, whether included in a Ph.D. program or a Master's program;
- For all other graduate courses, percentage scores of at least 60-69% are required for a minimal pass performance for each course which is included in a Master's program, provided that the student's Cumulative Weighted Average is at least 70%;
- Graduate courses for which students receive grades of 60-69% are minimally acceptable in a Postgraduate Diploma program, provided that the Cumulative Weighted Average is at least 65%;

Students should seek information on other program requirements in the Course & Program Catalogue and in academic unit publications.

Midterm and Final Examination Scheduling
Midterm and final examinations must be written on the date scheduled.

Final examinations may be scheduled at any time during the examination period (INSERT FIRST AND LAST DAY OF CURRENT EXAM PERIOD); students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures: https://students.usask.ca/academics/exams.php

Integrity Defined (from the Office of the University Secretary)
The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (https://secretariat.usask.ca/documents/student-conduct-appeals/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of

Complaints and Appeals (http://www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: http://www.usask.ca/secretariat/student-conduct-appeals/index.php

Examinations with Access and Equity Services (AES)
Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES policy and procedures. For more information, check www.students.usask.ca/aes, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations.
Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

Student Supports

Student Learning Services
Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site http://library.usask.ca/studentlearning/.

Student and Enrolment Services Division
The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the students' web site http://students.usask.ca.

Financial Support
Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (https://students.usask.ca/student-central.php).

Aboriginal Students Centre
The Aboriginal Students Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, brining Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful,

inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (https://www.facebook.com/aboriginalstudentscentre/) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success in their international education experiences at the U of S and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students and their families in their transition to the U of S and Saskatoon. ISSAC offers advising and support on all matters that affect international students and their families and on all matters related to studying abroad. Please visit students.usask.ca for more information.

AGENDA ITEM NO: 10.2

UNIVERSITY COUNCIL

ACADEMIC PROGRAMS COMMITTEE

REPORT FOR INFORMATION

PRESENTED BY: Susan Detmer; chair, academic programs committee

DATE OF MEETING: January 16, 2020

SUBJECT: **Changes to graduate programs in the Biomedical Science programs**

COUNCIL ACTION: **For Information Only**

SUMMARY:
At its December 18, 2019 meeting, the academic programs committee approved the following motions:

- *That the Academic Programs Committee approve the addition of Anatomy, Physiology, and Pharmacology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.*
- *That the Academic Programs Committee approve the addition of Biochemistry, Microbiology, and Immunology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.*
- *That the Academic Programs Committee approve the deletion of Anatomy and Cell Biology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.*
- *That the Academic Programs Committee approve the deletion of Physiology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.*
- *That the Academic Programs Committee approve the deletion of Pharmacology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.*
- *That the Academic Programs Committee approve the deletion of Biochemistry as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.*
- *That the Academic Programs Committee approve the deletion of Microbiology and Immunology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020*

In 2018, the five biomedical sciences (BMSC) departments were merged to form two new departments: the Department of Anatomy, Physiology and Pharmacology, and the Department of Biochemistry, Microbiology and Immunology. With the departmental mergers, the College of Graduate and Postdoctoral Studies proposed

changes to the names of their M.Sc. and Ph.D. programs to align with the new structures.

The two new graduate programs in 1) Anatomy, Physiology and Pharmacology; and 2) Biochemistry, Microbiology, and Immunology will utilize existing course offerings. It is anticipated that the merger of the programs will increase interdisciplinary opportunities, will help create a more cohesive student body, and will encourage faculty cooperation.

With the creation of the merged programs, the existing programs in 1) Anatomy and Cell Biology; 2) Biochemistry; 3) Physiology; 4) Pharmacology; and 5) Microbiology and Immunology are deleted. Students currently in these programs will be permitted to complete their program or to transfer to the new program, but no new students will be accepted into the existing programs.

These proposals were reviewed by the Graduate Programs Committee of CGPS on September 30, 2019 and by the Executive Committee of CGPS on November 26, 2019.

APC appreciated the thorough review that these proposals received at the committees of CGPS and that the new programs will mirror the undergraduate offerings as well as the departmental structures.

ATTACHMENTS:
1. Program Merger/New Field of Study – Anatomy, Physiology and Pharmacology
2. Program Merger/New Field of Study – Biochemistry and Microbiology& Immunology

UNIVERSITY OF SASKATCHEWAN
College of Graduate
and Postdoctoral Studies
GRAD.USASK.CA

116, 110 Science Place
Saskatoon SK S7N 5C9 Canada
Telephone: **306-966-5751**
Facsimile: **306-966-5756**
Email: **grad.studies@usask.ca**

M E M O R A N D U M

To: Academic Programs Committee of University Council

Copy: Dr. John Howland, Department of Anatomy, Physiology and Pharmacology

From: Martha Smith, Associate Dean, CGPS

Date: December 11, 2019

Re: Program Merger – Anatomy, Physiology and Pharmacology

As a result of the Graduate Program Review process and strategic planning processes in the College of Medicine, the three independent departments of Anatomy & Cell Biology, Physiology, and Pharmacology were merged effective July 1, 2018. Merging the three independent graduate programs would provide more cohesive programming and enrich the experience for the graduate students.

The merger of the three programs would have all graduate students entering a new field of study "Anatomy, Physiology and Pharmacology". Existing students would have the option to remain in their current program or transfer to the new field. The CGPS requests that APC approve the proposal effective May 1, 2020.

The Graduate Programs Committee first considered the proposal to merge the programs during the 2018/2019 academic year; however, it was determined that additional information was needed to respond to the Graduate Program Review process. The proposal to merge the three programs was approved by the Graduate Programs Committee on October 21, 2019. The proposal was subsequently approved by the Executive Committee of CGPS on November 25, 2019. Note that all recommendations by CGPS committees were accepted by the proponents and incorporated into the proposal as submitted.

Attached please find the full program proposal and supporting documents.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

UNIVERSITY OF SASKATCHEWAN

Memorandum

To: **Academic Programs Committee (APC)**

CC: Heather Heavin, Chair, Graduate Academic Affairs Committee, CGPS

From: Trever Crowe, Chair, Executive Committee, CGPS

Date: December 9, 2019

Re: **Merger of Anatomy, Physiology and Pharmacology graduate programs.**

On November 25, 2019, the Executive Committee (EC) of CGPS considered a recommendation from the Graduate Programs Committee (CGPS) to merge the Anatomy, Physiology and Pharmacology graduate programs.

There was extensive discussion at the Executive that included graduate program review outcomes directly impacting these graduate programs in which this proposal begins to address.

Accepted Motion: To recommend approval of the merged Anatomy, Physiology and Pharmacology graduate programs on the condition that corrections and clarifications be made to the policy manual. The committee recommends that the language on the comprehensive exam indicate that the exam should be completed within the first 2 years in program. *Misra/ McIntyre*

The accepted motion was the followed up by a second motion tasking the Dean, CGPS to ensure a process is clearly established in response to graduate program review (GPR) outcomes.

Motion: The EC tasks the CGPS Deans Office to establish a process to ensure that units adequately respond to recommendations from program reviews with a commitment to ensure programs are meeting expectations. *Heavin/Newton*

The attached appendix provides additional background for consideration. If you have any questions, please contact Dean Trever Crowe at trever.crowe@usask.ca or by phone at 966-5759.

/ll

UNIVERSITY OF SASKATCHEWAN
College of Graduate
and Postdoctoral Studies
GRAD.USASK.CA

116, 110 Science Place
Saskatoon SK S7N 5C9 Canada
Telephone: **306-966-5751**
Facsimile: **306-966-5756**
Email: **grad.studies@usask.ca**

M E M O R A N D U M

To: Executive Committee of CGPS

Copy: Dr. John Howland, Graduate Chair, Anatomy, Physiology & Pharmacology

From: Graduate Programs Committee

Date: October 28, 2019

Re: Merger of Graduate Programs in Anatomy & Cell Biology, Physiology, and Pharmacology

---

On October 21, 2019, the Graduate Programs Committee considered a proposal to merge existing programs in the fields of 1) Anatomy & Cell Biology, 2) Physiology, and 3) Pharmacology. The program merger proposal had been considered by the committee during the 2018/2019 year; however, there had been some concern that the proponents had not sufficiently responded to the graduate program review recommendations. The program merger was being proposed following the merger of the three departments that had been effective July 1, 2018. Overall, merging the graduate programs seemed logical to provide more cohesive programming for the graduate students.

Existing students would have the option to remain in their existing program, or transfer to the new field of study. New students would be admitted to the new field of study.

A graduate student handbook had been provided in the proposal, and that document was helpful in describing programmatic requirements and expectations.

The proposal included indication of existing course offerings along with indication of intended offerings for the future. It was noted that the new courses suggested would require approval, and since they would be elective options, the course proposals could be approved independent of the program merger.

The Graduate Programs Committee was satisfied with the proposal, and the following motion was passed unanimously:

Motion: *To recommend approval of the merged Anatomy, Physiology and Pharmacology graduate programs on the condition that corrections and clarifications be made to the policy manual as noted in the minutes. The committee recommends that the language on the*

comprehensive exam indicate that the exam should be completed within the first 2 years in program. Labrecque/Tanaka CARRIED

Following the motion, the following corrections and clarifications were incorporated into the policies and procedures section of the proposal:

- Information on the qualifying and comprehensive exams was revised for consistency with CGPS policy language and to provide additional information to students. Consistent with the recommendation from the Graduate Programs Committee, comprehensive exam language was revised to suggest the exam should be completed within the second year of the program.
- Information regarding defence processes was revised to align with CGPS policy changes that had occurred during the last year.
- Clarified that the program would require all admitted students to receive funding. Funding could be obtained through a variety of sources including scholarship, supervisor's research grant, devolved allocations, etc.

Attached please find the proposal for the program merger/name change including a comprehensive response to previous program concerns, as well as a handbook indicative of program expectations.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

UNIVERSITY OF SASKATCHEWAN	**Proposal for Academic or Curricular Change**

PROPOSAL IDENTIFICATION

Title of proposal: **Program Merger/New field of study – Anatomy, Physiology & Pharmacology**

Degree(s): Master of Science, Doctor of Philosophy

Field(s) of Specialization: Anatomy, Physiology & Pharmacology

Level(s) of Concentration: N/A

Option(s): N/A

Degree College: N/A

Contact person(s) (name, telephone, fax, e-mail):
Martha Smith, Acting Associate Dean, CGPS, 306-966-2229; kelly.clement@usask.ca

Proposed date of implementation: May 1, 2020

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.

1. **Academic justification:**
    a. *Describe why the program would be a useful addition to the university, from an academic programming perspective.*
    Merging the graduate programs was suggested in the Graduate Program Review process.
    Merging the three programs to a single program is expected to increase and improve opportunities for course delivery without duplication.
    With the rise in interdisciplinary research, the increased size and scope of the student population is expected to enrich the culture.

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.*
The three independent departments were merged effective July 1, 2018. Merging the graduate programming was part of the planning process.

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)*
There is no targeted demographic; however, discussions are underway regarding increasing indigenous student enrolment in graduate programming in the department.

d. *What are the most similar competing programs in Saskatchewan, and in Canada? How is this program different?*
Similar programming exists at almost all U15 institutions. Shared facilities, seminars, etc. provides increased opportunities for interdisciplinary work and novel research.

2. Admissions

a. *What are the admissions requirements of this program?*
Standard CGPS admission standards for Master's and PhD programs.

3. Description of the program

a. *What are the curricular objectives, and how are these accomplished?*
Master's students will complete coursework and other scholarly activities and complete the program by writing and defending a thesis to contribute knowledge to their discipline. Upon completion of a master's program, graduates will be prepared for doctoral study or employment opportunities contributing knowledge to the discipline.
Doctoral students will complete coursework along with oral and/or comprehensive exams and will complete the program by writing and defending a dissertation that provides an original contribution to knowledge in the discipline. Upon completion of a doctoral program, graduates will be prepared for an academic or applied career in the discipline.

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 program will be delivered in a traditional format. Modular condensed class options will be introduced. Cotutelle programming is possible.

c. *Provide an overview of the curriculum mapping.*
Master's students complete coursework, lab/field work, thesis proposal, thesis writing, and then oral thesis defence.
Doctoral students complete coursework and qualifying exams (where applicable), comprehensive exams, lab/field work, dissertation proposal, and then oral dissertation defence.

d. *Identify where the opportunities for synthesis, analysis, application, critical thinking, problem solving are, and other relevant identifiers.*

As these are research-based programs, those opportunities are woven throughout the program requirements.

e. *Explain the comprehensive breadth of the program.*
   Master's graduates will be able to demonstrate mastery of a specific sub-field of the discipline, while PhD graduates will have made a novel contribution to a specific sub-field and demonstrated mastery of cognate sub-fields.
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.*
   This question does not align with the current version of the learning charter.
g. *Describe how students can enter this program from other programs (program transferability).*
   Standard regulations for CGPS student program transfers would be applicable.
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 new program will be subject to program review processes managed through institutional planning and assessment.
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.*
   N/A

4. Consultation

The program merger is a result of the Graduate Program Review process and strategic planning processes in the College of Medicine.

	Existing Anatomy & Cell Biology Programs	Existing Pharmacology Programs	Existing Physiology Programs/Proposed requirements for Anatomy, Physiology, and Pharmacology programs
Master of Science (MSc)	Students must maintain continuous registration in the 994 course. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • a minimum of 9 credit units • ACB 990.0 • ACB 994.0 • thesis defense	Students must maintain continuous registration in PCOL 994.0. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • a minimum of 9 credit units • PCOL 990.0 • PCOL 994.0 • Oral Comprehensive Exam[1]	Students must maintain continuous registration in the 994 course. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • a minimum of 9 credit units at the 800-level[2] • ~~PHSI~~ APPY 990.0 • ~~PHSI~~ APPY 994.0 • Thesis Defence

[1] Oral comprehensive exams are not normally required in master's level programs

[2] In a master's program with less than 12 cu of minimum coursework required, all courses must be graduate (800) level

	Existing Anatomy & Cell Biology Programs	**Existing Pharmacology Programs**	**Existing Physiology Programs/Proposed requirements for Anatomy, Physiology, and Pharmacology programs**
Doctor of Philosophy (PhD) with earned Master's degree	Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • minimum of 3 credit units (if M.Sc. already completed) otherwise 12 credit units[3] • ACB 990.0 • ACB 996.0 • GPS 988.0 (if required)[4] • thesis defense • comprehensive examination	Students must maintain continuous registration in PCOL 996.0 • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • a minimum of 3 credit units • PCOL 990.0 • PCOL 996.0 • Oral Comprehensive Exam	Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • a minimum of 3 credit units • ~~PHSI~~ APPY 990.0 • ~~PHSI~~ APPY 996.0 • Qualifying Exam (may be waived if student successfully orally defended master's thesis in research area) • Comprehensive Exam • Thesis Defence

[3] Master's degree is required for admission; existing language regarding 12 cu is unnecessary

[4] Outdated. Previously 988 was the animal ethics course that is currently GPS 962.

	Existing Anatomy & Cell Biology Programs	Existing Pharmacology Programs	Existing Physiology Programs/Proposed requirements for Anatomy, Physiology, and Pharmacology programs
Direct-entry PhD	N/A	Students must maintain continuous registration in the 996 course. • At least 9 credit units of course work at the graduate level must be successfully completed in the first year of the program. • Within the first year of the program, successfully complete a Ph.D. Qualifying Examination that is at least as rigorous as the defence for a Master's thesis in the program area. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • A minimum of 12[5] credit units at the 800-level • PCOL 990.0 • PCOL 996.0 • a comprehensive examination • Write and successfully defend a thesis based on original investigation.	Students must maintain continuous registration in ~~PHSI~~ APPY 996.0. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • A minimum of ~~9~~ 12 credit units at the 800-level • ~~PHSI~~ APPY 990.0 • ~~PHSI~~ APPY qualifying exam • comprehensive exam • thesis defence

[5] CGPS maintains minimum programmatic requirements. Individual graduate programs may include requirements in excess of the minimum requirements listed.

	Existing Anatomy & Cell Biology Programs	Existing Pharmacology Programs	Existing Physiology Programs/Proposed requirements for Anatomy, Physiology, and Pharmacology programs
Transfer from MSc to PhD	Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • a minimum of 12 credit units of 800-level coursework • ACB 990.0 • ACB 996	Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • a minimum of 12[5] credit units • PCOL 990.0 • PCOL 996.0 • Oral Qualifying Exam[6] • Oral Comprehensive Exam	Students must maintain continuous registration • GPS 960.0 • GPS 961.0 if research involves human subjects • GPS 962.0 if research involves animal subjects • ~~9~~ 12 credit units at the 800-level, ~~including relevant credit units taken before transfer~~[7] • PHSI 990.0 • PHSI 996.0 • Qualifying examination prior to transfer from M.Sc. to Ph.D • Ph.D. Comprehensive Exam • Thesis Defence

[6] Qualifying exam required PRIOR to transfer

[7] A minimum of 9 credit units must be completed to be eligible for transfer

UNIVERSITY OF SASKATCHEWAN

Report Form for Program Termination

Program(s) to be deleted: The fields of 1) Anatomy and Cell Biology, 2) Physiology, and 3) Pharmacology on the Master of Science and Doctor of Philosophy degree programs

Effective date of termination: May 2020. Students already enrolled will be permitted to complete their programs

1. List reasons for termination and describe the background leading to this decision.

2. Technical information.

2.1 Courses offered in the program and faculty resources required for these courses.
All resources will be redirected to the new combined APPY graduate programs.

2.2 Other resources (staff, technology, physical resources, etc) used for this program.
All resources will be redirected to the new combined APPY graduate programs.

2.3 Courses to be deleted, if any.
Courses to be relabeled. The individual 99X courses will be replaced with APPY 99X courses.

2.4 Number of students presently enrolled.

2.5 Number of students enrolled and graduated over the last five years.

3. Impact of the termination.
Internal

3.1 What if any impact will this termination have on undergraduate and graduate students? How will they be advised to complete their programs?
Program mergers at the undergraduate level have already been approved. The combined program is anticipated to be an improvement over the three independent programs. Current students will have a choice to transfer to the new program or complete the program under the previous field of study.

3.2 What impact will this termination have on faculty and teaching assignments?
Combining the programs is anticipated to result in better utilization of teaching resources.

3.3 Will this termination affect other programs, departments or colleges?
No

3.4 If courses are also to be deleted, will these deletions affect any other programs?
N/A

3.5 Is it likely, or appropriate, that another department or college will develop a program to replace this one?

No. Three independent programs are being replaced by one cohesive program. Other units will not be impacted.

3.6 Is it likely, or appropriate, that another department or college will develop courses to replace the ones deleted?

N/A

3.7 Describe any impact on research projects.

N/A

3.8 Will this deletion affect resource areas such as library resources, physical facilities, and information technology?

Changes to physical facilities for the combined department are already in place to support the new combined program replacing the program deletions.

3.9 Describe the budgetary implications of this deletion.

While there are some initial in-kind contributions for system related work, overall budget implications would be negligible.

External

3.10 Describe any external impact (e.g. university reputation, accreditation, other institutions, high schools, community organizations, professional bodies).

N/A

3.11 Is it likely or appropriate that another educational institution will offer this program if it is deleted at the University of Saskatchewan?

N/A

Other

3.12 Are there any other relevant impacts or considerations?

3.13 Please provide any statements or opinions received about this termination.

(Optional)

4. Additional information. *Programs which have not undergone recent formal reviews should provide additional relevant information about quality, demand, efficiency, unique features, and relevance to the province.*

UNIVERSITY OF SASKATCHEWAN

Request for Change of Name

This Request form and attachments will be the basis for decision-making about this change.

Submitted by: John Howland Date: October 1, 2019

College: Medicine

College approval date: Documents have been submitted to College of Medicine Faculty Council for review.

Proposed effective date of the change: May 1, 2020

1. Proposed change of name

	From:	To:
College	**CGPS**	**no change**
Department	**Anatomy, Physiology, and Pharmacology**	**no change**
Program name	**Anatomy and Cell Biology (1), Pharmacology (2), Physiology (3)**	**Anatomy, Physiology, and Pharmacology (1)**
Degree name	**M.Sc., Ph.D.**	**M.Sc., Ph.D.**
Name of Field of Specialization (major, minor, concentration, etc)	**Anatomy and Cell Biology (1), Pharmacology (2), Physiology (3)**	**Anatomy, Physiology, and Pharmacology (1)**
Course label (alphabetic)	**ACB, PCOL, PHSI**	**APPY**
Building	**Health Sciences**	**no change**
Street	**107 Wiggins Rd**	**no change**
Other		

2. Documentation

Rationale: Provide a rationale for the change and describe the background leading to this decision.

On July 1, 2018, the departments of Anatomy and Cell Biology, Physiology, and Pharmacology merged to become Anatomy, Physiology, and Pharmacology (APP). Before the merger, the three departments each had an existing graduate program, all three of which remain in place today. In the winter of 2018, an external review of the three 'legacy' graduate programs was conducted and a number of shortcomings of the programs were identified. These included deficiencies in the program objectives and curriculum, program enrolment and student funding, student outcomes, and administration (see the appendix 'Response to Graduate Program External Review' for more details). Discussions held in APP graduate committee and department meetings over the past 15 months have revealed that faculty acknowledge many of these deficiencies and show considerable enthusiasm for correcting them. The information in this package summarizes efforts the APP department has already made and also plan to make to improve graduate programming in the department.

The present request relates to merging the three legacy programs into one, which was the main option suggested in the external review for improving graduate programs in the department. There is strong support from faculty for merging the graduate programs for a number of reasons including:

- A larger graduate program would enable the APP department to offer a wider slate of graduate courses without duplication.

- The student culture of a larger, single department will be stronger than three separate departments.

- Maintaining the discipline-specific departments is not necessary as interdisciplinary research in biomedical sciences is more widespread than in the past.

- The budget for the legacy programs comes from the single APP budget. It would be considerably simpler if one graduate program was managed as the resources could be best allocated to benefit the most students.

Since our merger, the APP department has undertaken a number of initiatives to enrich graduate programming in the department, most of which are in direct response to the suggestions of the external review. Most of these initiatives are designed with a single graduate program in mind. These include:

1. Formation of a single APP graduate committee that oversees operation of the three graduate programs in our department (ACB, Pharmacology, and Physiology). While three legacy graduate chairs are still formally in place (Brian Eames – ACB; Kash Desai – Pharmacology; John Howland – Physiology), all decisions are vetted at the level of the APP graduate committee with a single chair (Howland).

2. We have compiled a point-by-point response to the external review of our graduate programs (see appended document). We believe that we have addressed the most substantive criticisms of our legacy programs with changes that have been/will be implemented during the 2018-2019, 2019-2020, and 2020-2021 academic years.

3. We developed a common graduate student handbook for the 3 programs (appended). In the handbook, we detailed the harmonized requirements and policies among the three existing programs (course requirements, comprehensive exam requirements, minimum stipend for MSc and PhD programs).

4. We developed a common 990 graduate seminar for the 3 programs (syllabus appended). It has been conducted in this manner last year and this year. Feedback obtained from students and faculty suggest that holding this common seminar has increased collegiality and interaction among the streams.

5. We have offered substantial slate of graduate courses this academic year and have plans to implement a series of 1 c.u. courses next year (see appendix 'Response to External Graduate Program Review'). Our vision is to offer 'modular' courses in a manner similar to that which is in place in the Chemistry Department.

6. A signed student-supervisor agreement is required for any student starting after May 1, 2019 (see appended graduate student handbook).

Impact of the change: Please describe any potential impact of this change, including any of the following areas if relevant.

Graduate students enrolling in the new merged APP graduate program will benefit from the increase in course offerings, clearer statement of program requirements and expectations, more active culture, and increase in faculty complement of the APP department. Within the APP department, efficiencies in administration, course offerings, and financial issues identified in the previous section will be felt. The APP graduate committee perceives minimal changes to other units. Some additional notes are included below under each heading.

- Impact on students: Students already registered in one of the legacy programs will have the option to enter the new program or remain in the program in which they are currently enrolled. New, incoming students will enter the single APP graduate program. We expect the impact on existing students to be minimal as the general degree requirements for the three legacy programs are almost identical. The single merged graduate student handbook will be circulated to new students entering the program.

- Impact on faculty: Efforts will be made to advertise and promote the new program. Thus, faculty will see benefit in increased student applications and a stronger identity and culture of the program in the College and at the University. Faculty will also be expected to see larger enrolments in their graduate courses.

- Impact on staff: Impact on staff will be minimal as program requirements and numbers of students are unlikely to change dramatically.

- Impact on alumni: There will be no effect on alumni as the legacy program names and history are still captured in the new name. Increased efforts to engage past alumni and keep in contact with future alumni are being made (see appended Exit Interview).

- Effect on other programs, departments, colleges, centres: As the three legacy programs already exist, there will be minimal effect on other units.

- Impact on university-wide systems (e.g. SiRIUS, UniFi, PAWS, U-Friend, Library, About US, etc.): No change other than the administrative work required to update the systems and program of student enrolment.

- Resource areas such as library resources, physical facilities, and information technology: No effect as student needs will remain the same as if there were the three legacy programs operating.

- External impact (e.g. reputation, accreditation, other institutions, high schools, community organizations, professional bodies): In the future, it is our hope that a larger and more vibrant program will have a greater impact on external bodies than if the smaller legacy programs had remained intact. We believe that the diversity of research done in the larger program will attract more attention in Saskatoon and beyond.

Please attach any statements or opinions received about this change.

No formal statements of opinions have been received about this change. At a meeting the APP graduate committee held with the Dean of CGPS on August 27, 2019, Dean Crowe expressed his enthusiasm for merging the graduate programs and encouraged us to submit documentation supporting a name change to the CGPS during the fall, 2019. All APP faculty also support this name change request.

Costs: Please describe whether this change will result in any additional costs for the university (ie, repainting signs, technical changes in SiRIUS, PAWS, financial services, etc.).

Costs to the University will be minimal. Some changes to the course naming and course builds will be required. A new and improved website will also be needed but the costs for that will come from the department and college budgets.

Consultation: Please describe any consultation undertaken with other university offices, such as Student and Enrolment Services, Institutional Strategy and Analytics, Institutional Planning and Assessment, Financial Services, Facilities Management, Office of the University Secretary, Information Technology Services, etc. Please attach any memos or emails received about this consultation.

None attached. Discussions with the Dean of CGPS, Heather Lukey, and Kelly Clement were positive in this regard.

3. Review and Approval Authority

All changes of names for academic entities must be requested by the responsible college, following internal approval by its own approval procedures.

After submission of the Request by the College, the following approval procedures are used, and must be initiated by the College:

- **Changes of course labels** are approved by the Registrar in consultation with the college offering the courses. Any disputes arising over course label changes will be referred to the Academic Programs Committee for resolution. Course label changes are to be distributed for information through the Course Challenge system.
- **Changes of names for colleges and departments** are approved by University Council (following recommendation by the Planning & Priorities Committee) and by the Board of Governors, if the name is honorific.
- **Changes of names for degrees or a degree-level programs** are approved by University Council
- **Changes of names for fields of specialization** are approved by the Academic Programs Committee of Council.
- **Changes of names for buildings, streets and other physical entities** are approved by the Board of Governors (following recommendation by the Naming Committee).

If you have any questions about this form or these procedures, please contact the Office of the University Secretary or email university.secretary@usask.ca.

Response to Graduate Program External Review (Winter, 2018)

Prepared by the APP Graduate Committee (October, 2019)

Chair: John G. Howland

Members: Stan Bardal, Lane Bekar, Julia Boughner, Veronica Campanucci, Kash Desai, Brian Eames, Helen Nichol, Juan Ianowski

Student members: Raphela Grecco Machado, Andrew Roebuck, Caitlin Wotton

Preamble:

Since merging of the three Departments into Anatomy, Physiology, and Pharmacology (APP) on July 1st 2018, a new APP graduate committee was formed that includes three faculty and one graduate student from each of the three legacy graduate programs (12 members in total). The committee has met every 1-2 months throughout the 2018-19 academic year and has both planned and instituted many changes to existing programs in an effort to: 1) ease a merger into a single APP graduate program; and 2) address deficiencies outlined in the Graduate Programs Review. The program review evaluated programs in six categories, in four of which our graduate programs did not meet the standards for a quality graduate program or there was insufficient data to evaluate. The weaknesses highlighted in each category are summarized below for reference, followed by a point-by-point discussion of changes we have made (or plan to make) to address these deficiencies. In addition, the external review offered two alternative suggestions for envisioning graduate training in the department. Both suggestions involved some effort to identify 'graduate streams' or areas of concentration within the graduate program. We are working toward these suggestions in a number of ways including the formation of new course modules which will help to define future streams. In addition, we will have 5 new tenure track faculty in the department within the next 2 years (2 of the 5 have already started). Therefore, we believe that these new faculty will play major roles in defining the future of graduate programming in the department including new streams. As a result of these changes, we have not identified any specific streams at this time. Rather, we are working toward a unifying the three existing 'legacy' graduate programs at this time.

From the External Review Report:

1. **Program Objectives and Curriculum** (Does not meet standards)
    a) MSc/PhD program descriptions do not clearly identify/differentiate program objectives.
    b) Student learning outcomes are not adequately or specifically identified.
    c) Lack of student handbook in two programs related to confusion among student expectations.
    d) Insufficient number of courses offered, and consistently scheduled, that highlight faculty expertise.
    e) No indication of any course or program evaluation by students in the program.
2. **Program Enrolment and Student Funding** (Does not meet standards)
    a) Funding packages do not cover minimum period of time in program.
    b) Enrolment is low and decreasing.

c) Low number of PhD students limit project complexity and thus limit contributions to faculty research.
d) Eligible students are not consistently applying for scholarships.
e) Little recruiting effort and poor on-line information and resources for potential graduate students.

3. **Student Outcomes** (insufficient data)
   a) Graduate students are not publishing peer-reviewed journal articles in great numbers.
   b) Emphasis on MSc programs (including BSc/MSc) result in limited opportunities to publish.
   c) Program completion times are long, raising concern about differential standards/requirements.
4. **Learning Environment** (meets standards)
5. **Faculty Profile** (meets standards)
6. **Administration** (Does not meet standards)
   a) No evidence of coordinated graduate student recruitment efforts. Recruitment is targeted towards the BSc/MSc program. Number of international students is low.
   b) No evidence of forward planning for program advancement/improvement ("*where are we now?*" and "*where are we going?*")

Point-by-point response:

1a-c) Upon review of several graduate handbooks and information across campus (Anatomy & Cell Biology, Physiology, Veterinary Biomedical Sciences, College of Pharmacy and Nutrition), a new graduate student handbook for the APP graduate program has been created that clearly outlines and differentiates objectives and learning outcomes of both the MSc and PhD programs. This handbook outlines all timelines as well as student, supervisor, and advisory committee roles/expectations. A student/supervisor agreement form is also contained within this document as an appendix and is required for new students beginning a program after May 1, 2019. This handbook is sent to all (in-coming and current) graduate students each year in September and serves as the backbone of the programs to ensure consistency and reduce confusion surrounding expectations and timelines.

1d) For the 2019-20 academic year, 6 graduate courses are being offered by APP faculty (see list below). In addition, faculty commitments for the creation of 10 new single credit unit modules for 2020-21 academic year will further enhance student choice in graduate course selections.

2019-20 course offerings:

- ACB 801.6 (Gross Anatomy, Cooper)
- ACB 821.3 (Advanced Seminar in Developmental Biology, Boughner and Eames)
- ACB 824.3 (Current Topics in Myelinating Glia, Verge)
- ACB XXX.3 (Comparative Vertebrate Histology, Popescu)
- PCOL 850.6 (Graduate Pharmacology, Desai)
- PHSI 860.3 (Advanced Seminar in Neuroscience, Howland)

2020-21 course offerings:

One-credit modules (committed):

- Stan Bardal: Recent Advances in Drug Design

- Stan Bardal/Kash Desai/Lixin Liu: Advances in Cardiorespiratory Pharmacology
- Lane Bekar: Understanding Synaptic Electrophysiology
- Veronica Campanucci: Ion Channels and Receptors in Human Diseases
- Jen Chlan: Neuroanatomy
- Kash Desai: Role of Gastrotransmitters in the Cardiovascular System
- Brian Eames: Skeletal Cell and Developmental Biology
- John Howland: Systems Neuroscience I
- Juan Ianowski: Regulation and Coordination of Ion Channels, Transporters, and Pumps
- Val Verge: Basics of Cell Signaling in Neurobiology

1e) All students will be asked to complete course evaluations prior to submission of final grades to graduate studies. All students will be asked to evaluate the graduate program as part of a check list for completion of program requirements to be submitted with final thesis to graduate studies (see appended Exit Interview document).

2a) We have adopted a minimum funding model for all students in the APP graduate programs ($18,000/year for 2 years for the M.Sc.; $21,000/year for 4 years for the PhD).

2b,c) Despite the fact that the number of APP faculty taking on graduate students has been decreasing, the total student numbers within the three programs have remained consistent at around 40 for the past 5 years. It is true that the bulk of these are in the BSc/MSc and MSc programs. We hope the planned addition of the new one-credit module regarding careers in science will help show the students the value of obtaining a PhD and increase our PhD numbers. In addition, the hiring of new faculty (2 hires completed, 3 more expected in the near future) should increase the total number of students in our programs.

2d) Confusion surrounding scholarships will be reduced with the addition of a list of scholarships with typical deadlines as an appendix to out newly created Graduate Student Handbook (needs to be created). David Cooper, the Assistant Dean of Graduate Studies in the College of Medicine, has also worked to harmonize graduate scholarship applications with the College. However, it is really up to the Supervisors to ensure their students are funded to the minimum levels set out in the handbook. The required Student/Supervisor agreement at the outset of program study will help ensure these minimum funding levels are achieved and maintained.

2e) The first step required to improve recruiting is to overhaul the new APP program on-line information and resources. The College of Medicine has developed a new departmental website, which we will continue to update to provide the best information to prospective students. Unfortunately, we don't have control over our departmental website.

3a) We have compiled a list of peer-reviewed publications for all graduate students who have graduated from our legacy programs over the past 6 years (2014 to the present). During this time, 60 students have graduated from our programs (38 MSc; 22 PhD). These students contributed 160 peer-reviewed publications that could are indexed on PubMed. Publications per student averaged 2.2/MSc student (82 papers) and 3.5/PhD student (78 papers).

3b) Addressed in 2c above.

3c) Addressed in 1a-c above. The new handbook with clearly defined timelines and expectations of advisory committees will help ensure timely completion going forward.

6a) Addressed 2 above.

6b) As outlined in 1d above, course development has the largest impact on where we are going. Creation of the one-credit module format greatly increases the flexibility within the different streams and program in general.

6) A general comment regarding administrative matters: we have been fortunate this past year to have a single graduate administrator for the three legacy programs which has made streamlining our programs considerably easier and more efficient.

Preamble. The Dept of APP is continuously striving to meaningfully improve our graduate program's efficacy in teaching and training our MSc and PhD students in scientific research and communication.

One the most effective ways for our Grad Program to improve is to hear and thus have the opportunity to act upon constructive critiques from students who have recently journeyed through our program.

Collecting feedback, positive and negative, is the aim of this exit interview. You are not obliged to complete this form, but it would really help us if you accepted our invitation to do so.

Disclaimer: Completing this form will in no way affect your capacity to graduate from our program. All responses will be collated, anonymized and held by the Dept. of APP Graduate Program Administrator. Anonymized feedback will be shared and used within the Dept. of APP only.

Thanks in advance for your input!

Reflecting on your time in-program, including grad coursework, instructional training (e.g., T.A.'ing), hands-on research experience, mentoring in data collection and analysis, research article publication, thesis writing, and other skill development, as well as the administration of the grad program at the level of APP and at the level of the CGPS, what would you suggest that the APP Graduate Program:

(Please feel free to list more than one action item per category. It would be extra helpful if you would also share the reasoning behind your recommendations.)

STOP doing immediately?

START doing immediately?

CONTINUE doing?

Dear Recent Graduate of Anatomy, Physiology & Pharmacology,

CONGRATULATIONS on completing your graduate program of study in our department!

Keeping in touch with Alumni helps us to develop a more enriching, effective graduate program. This includes inviting our Alumni to come back and provide career advice to students; as well as helping us to understand the types of jobs and careers that our Alumni pursue and succeed in.

To that end, do we have your permission to contact you in future? Please circle your preference:

YES NO

If "YES" (thank you!), then please provide your preferred means of contact and contact details below:

Email _____

Phone (____) _____

Mailing address:

Street/house or apt #:_____

City: _____ Province/State: _____ Postal/Zip code: _____

Country: _____

Other contact info (including social media accounts) _____

UNIVERSITY OF SASKATCHEWAN

Policies and Procedures

Graduate Program in

Anatomy, Physiology, and Pharmacology

University of Saskatchewan

ANATOMY, PHYSIOLOGY, AND PHARMACOLOGY GRADUATE STUDENT HANDBOOK

1. Introduction

Welcome to graduate studies in the Department of Anatomy, Physiology and Pharmacology!

The purpose of this handbook is to provide you with basic information on the services available to you in your graduate program, as well as the duties and requirements that you will need to fulfill to complete your graduate degree in the Department of Anatomy, Physiology and Pharmacology. The Department offers opportunities to transition BSc. Hon. work into an MSc, along with regular MSc and PhD graduate programs. The Department has faculty and students with diverse research interests in neuroscience as well as cardiovascular, metabolic, developmental and respiratory sciences. You are expected to gain a detailed understanding of your area of research. Our graduate program consists of independent research as well as didactic work involving academic courses and reading of relevant literature. The didactic component is intended to provide a knowledge framework upon which your research is based. Nevertheless, your efforts in research training and preparation in your area of specialization are of paramount importance. In addition, every effort is made in this department to prepare you to teach and communicate scientific information.

The departmental Graduate Program Committee develops policy and administers the graduate program. Immediate oversight for each student is provided by a faculty Supervisor, and a faculty Advisory Committee. Direct financial support to graduate students is derived from a variety of sources. All aspects of the program, including conferral of degrees, are ultimately governed by the College of Graduate and Postdoctoral Studies, which sets or approves the policies and procedures that departments follow. The Policies and Procedures Manual of the College of Graduate and Postdoctoral Studies can be found at:

https://cgps.usask.ca/policy-and-procedure/index.php

2. How do I apply for graduate studies at the University of Saskatchewan?

There are three potential graduate training programs within the greater Department of Anatomy, Physiology and Pharmacology graduate program:

1. **Combined Bachelor of Science/Master of Science (B.Sc./MSc):** This is a project- and thesis-based program only offered to outstanding students enrolled in an APP undergraduate honours program. Students should inform their supervisors early in their program (first term) of their interest in continuing into the B.Sc./MSc Program. Admissions will be reviewed on a case-by-case basis by the Graduate Committee based on academic performance. Students must be admitted to the graduate program (and submit a program of studies) by June 1st. This combined program allows students to continue their undergraduate research project and fulfill additional requirements to obtain an MSc. A strict timeline is expected to not exceed 12-15 months immediately following BSc graduation.
2. **Master of Science (MSc):** This is a project- and thesis-based program offered to students holding a four-year degree from a recognized university in an academic discipline relevant to the proposed field of study. The expected length of the program is 2 years.
3. **Doctor of Philosophy (PhD):** This is a project- and thesis-based program offered to students holding a Master's degree, or equivalent, from a recognized university in an academic discipline relevant to the proposed field of study. The expected length of the program is 4 years.

Before applying for admission to graduate studies, prospective graduate students must first contact individual faculty members with research interests compatible with their own, to determine if that faculty member is willing to supervise the student. Information about the research interests of departmental faculty can be obtained from the Department web site (http://medicine.usask.ca/department/schools-divisions/biomedical..php). When you contact your prospective supervisor, include your career goals, your academic credentials, and curriculum vitae. Once a supervisor has been identified and they agree to supervise your graduate program, you should access the

website of the College of Graduate Studies and Postdoctoral Studies (CGPS) (http://www.usask.ca/cgps/) where complete information on requirements and procedures for admission are available. Those International students who must meet English Proficiency Requirements should arrange for testing in their home country. Please note that international students are charged additional fees. Students with external scholarship support are encouraged to include this information with their application.

After you are accepted into the CGPS, you will need to register with the University of Saskatchewan and pay your tuition and fees. Complete information is available at the CGPS website: http://grad.usask.ca/admissions/how-to-apply.php#Beforeyouapply. Students in the MSc programs need to register for APP 994 and APP 990. Students in the PhD program need to register for APP 996 and APP 990. You will need to register for additional courses throughout your graduate program according to your Program of Studies (see sections 4B and 6B below). Upon your arrival at the University of Saskatchewan, you will need to meet with the departmental Graduate Assistant who will help you get settled in the Department.

3. Who is involved in my graduate program?

In addition to yourself, your graduate program involves your research supervisor, your advisory committee members, the Department graduate chair, the Department graduate assistant and staff in the CGPS. As a graduate student at the University of Saskatchewan, you are enrolled in the CGPS, but your graduate program is administered at the Department level, which operates within the regulations provided by the CGPS.

A. Your role as a graduate student

You are responsible for the success of your program, although your supervisor, research advisory committee, the graduate chair and the graduate assistant will always be available to help with problems. Graduate students are specifically responsible for:

1. demonstrating a commitment to research through diligent and conscientious lab and/or field work
2. maintaining a spirit of collegiality with peers, laboratory co-workers, and faculty
3. adherence to University regulations concerning work safety, biosafety, ethical treatment of research animals, and Academic Integrity http://www.usask.ca/integrity/
4. timely registration for courses and payment of fees owing
5. maintaining of appropriate academic performance (minimum 70% GPA in coursework)
6. attending and participating in the departmental seminar series (APP 990)
7. in consultation with supervisor, establish members of advisory committee and arrange advisory committee meetings (minimum once/year) (see FAQ *How do I set up a committee meeting?*)
8. seeking advice from members of their advisory committee where appropriate
9. timely submission of scholarship applications/renewals and awareness/attendance to the stipend funding periods
10. timely submission of research proposal, annual progress reports, manuscripts, thesis, etc.

B. Your supervisor's role

The supervisor is responsible for providing supportive advice and discussions about the research, assistance with research design, and for timely review of research proposals, manuscripts and thesis drafts. Supervisors are also required to provide sufficient resources to ensure that the research can proceed as effectively as possible. These resources include research operating funds, and access to research space and equipment as necessary. Additional clarification of roles can be achieved by filling out the Student-Supervisor Agreement (Appendix C) and filing it along with your program of studies.

C. The roles of advisory committee members

The guiding principle underlying the advisory committee is that the student needs sustained advice from the beginning of their program if they are to move expeditiously and constructively through the program requirements. The advisory committee meets at least once each year to review and assess student progress and to offer advice. However, students are encouraged to arrange more frequent meetings and/or to contact individual members of their committee whenever they need assistance. The advisory committee also plays an important role in assessing student performance in qualifying and comprehensive examinations and thesis defenses.

The advisory committee consists of the following members (minimum of 3 for MSc, 5 for PhD):

1. Supervisor - a member of the faculty of the CGPS (adjunct professors included). Co-supervisors are counted along with the Supervisor as one member.
2. Advisory committee chair – the Department Graduate Chair or designate (typically a member of committee)
3. Additional Members - a minimum of 1 (MSc) or 2 (PhD) faculty members of the Department of Anatomy, Physiology and Pharmacology. Must be members of the graduate faculty of CGPS, adjunct professors, or professional affiliates.
4. Cognate Member – a minimum of one for a PhD program. The cognate member cannot be a member of the Department of Anatomy, Physiology and Pharmacology but must be a member of the graduate faculty of CGPS or else granted permission by the Dean, CGPS.
5. .

The supervisor, the student and the graduate chair most often guide the decision-making process for committee member selection. Collectively, committee members should have sufficient experience and knowledge to be able to effectively assist the student with research design, background, methods, and analysis.

D. Anatomy, Physiology and Pharmacology graduate chair

The graduate chair offers advice and information regarding Department and CGPS regulations to ensure consistency among advisory committees and among students within the Department. The graduate chair should be viewed as an advocate for the student and should be the first person that the student consults should problems arise that cannot be resolved with the supervisor and/or committee members. On an administrative level, the graduate chair is responsible for ensuring chairing and recording the minutes for annual advisory meetings, qualifying and comprehensive exams and defenses. The graduate chair also oversees administrative aspects of scholarship and stipend awards/distribution. At the university level, the chair acts as liaison between the Department and the CGPS.

E. Graduate assistant

The graduate assistant acts as the graduate student resource person, providing advice and guidance on procedures related to the Department, the graduate program, and CGPS requirements. The graduate assistant is responsible for scheduling meetings, exams/defenses, and for maintaining and submitting appropriate paperwork to CGPS, including relevant information regarding scholarships.

F. The Department graduate committee

The graduate committee meets as necessary to make decisions regarding the Department's graduate program, including decisions on scholarship competitions. In some cases, decisions made by the graduate committee are submitted for approval to Department faculty. Members of the graduate committee include the graduate chair,

the graduate assistant and at least one other Department faculty member.

4. Information for students in the MSc or PhD Programs

A. Program Objectives

The primary responsibility of the Department of Anatomy, Physiology and Pharmacology toward its graduate students is the provision of an environment that fosters scholarly development and experience that will enable gainful employment or continued training at an advanced stage. Additionally, the Department has the responsibility of ensuring that its graduates will reflect credit upon the Department and on the University. Below you will find specific student objectives for the graduate programs offered in the Department of Anatomy, Physiology and Pharmacology. A general description of learning outcomes are found in the College of Graduate and Postdoctoral Studies policy and procedure documents (https://cgps.usask.ca/policy-and-procedure/governance-membership/degree-level-learning-outcomes.php).

MSc Student objectives:

The overarching goal of the MSc program is to ensure that students are exposed to the scientific method and procedures/skills important in producing and publishing novel scientific information. Although publication at this level is not mandatory, demonstration of knowledge and skills necessary to take an experimental question to publication must be evident. In order to meet this goal, MSc students should:

1. Develop a generalized knowledge base sufficient for design, conduct, analysis and reporting of scientific experiments surrounding a well-defined experimental question/hypothesis.
2. Obtain practical experience in laboratory skills necessary to address the proposed experimental questions/hypotheses.
3. Develop proficiency in the collection, analysis and presentation of data to aid in final publication.
4. Acquire experience with oral presentation of scientific information sufficient to enable preparation and delivery of reports or presentations at scientific meetings.

PhD Student objectives:

In addition to meeting the main goal and specific objectives of the MSc program stated above, the major goal of the PhD program is to develop students into trained problem-solvers. This will include the development of a broadened knowledge base beyond their primary research focus and a mature understanding of the process of scientific inquiry sufficient to enable the assessment and constructive criticism of the work of others. Publication and presentation of results at scientific meetings is mandatory at this level. Given an experimental question in any scientific field, a PhD student should be able to:

1. Find relevant information to create/rationalize a hypothesis that will address the experimental question.
2. Seek out relevant information/resources concerning methodology necessary to adequately test the hypothesis.
3. Design, perform and overcome/circumvent problems associated with experimentation.
4. Analyze, interpret and discuss the results in the context of the current literature leading to publication.
5. Obtain familiarity with the process of scientific reporting sufficient to enable the independent preparation of manuscripts for journals, applications for research grants, and technical reports.

B. Within the first month of starting your program

1. You and your supervisor should meet to decide on committee members and identify some of the academic courses you feel that you need. Departmental course requirements for the MSc program is 9 credits at the

graduate level. Additional courses can be taken from any academic unit on campus as deemed appropriate to the students' specific program of studies. Students transferring to the PhD program from the MSc program do not require, but may be subject to, additional course work if the advisory committee deems it appropriate.

2. Arrange and hold your first introductory committee meeting (see FAQ *How do I set up a committee meeting*?). At this meeting, you will discuss your proposed research and the committee will provide advice on coursework. A progress report is not required for this meeting but you will need to send an email to your committee members prior to the meeting which indicates the area of your research and your proposed coursework, both credit and non-credit.
3. Coursework will include:
   - A list of academic courses which fulfill the credit requirements for your program.
   - Graduate Research (APP 994 for MSc or 996 for PhD) and Graduate Seminar (APP 990) courses.
   - Additional requirements such as Graduate Research Ethics and Integrity Training Course (GPS 960) required for all students, UCACS Education and Training Program (Animal Care/Handling GPS 962) required for students conducting research involving animal subjects, and/or Tri-Council Policy Statement: Ethics Conduct for Research involving Humans (TCPS) Tutorial (GPS 961) required for students conducting research involving human subjects.
   - Laboratory Safety, Biosafety, Radiation Safety and Ethics courses as required.
   - Students may also elect to complete non-credit courses offered by the CGPS, such as Thinking Critically: Professional Skills for Global Citizens (GPS 984); Introduction to University Teaching (GPS 989); Academic Preparation for International Graduate Students (GPS 981). These courses have no credit or fees, but require registration. Registration in these courses is limited to current graduate students and postdoctoral fellows and graduate students are encouraged to participate in these courses. The courses will appear on students' official transcripts.

C. Within the first 4 months of starting your program

1. Write your brief research proposal (see FAQ, *what should I include in a research proposal?).*
2. You will need to have a committee meeting to have your Program of Studies (POS) approved by your advisory committee (see FAQ *How do I set up a committee meeting*?). The Program of Studies lists courses required for your individualized research program, as well as the research proposal. When the committee has approved it, the POS is submitted to the graduate chair and graduate assistant who will submit it to CGPS.

D. Each year of your program:

1. Maintain your registration in the program, pay tuition and fees.
2. Call an advisory committee meeting. It is a requirement of your graduate program to have at least one advisory committee meeting each year (typically in May/June). Call extra advisory committee meetings as deemed necessary. It is the responsibility of the student and the supervisor to call the meeting (see FAQ *How do I set up a committee meeting*?). At least **5 working days** prior to meeting, provide your committee and the graduate assistant with an annual progress report (see FAQ *What should I include in my annual progress report?).* The Supervisor should review the written progress report before it is submitted. At this meeting, you will normally be expected to give a short (*e.g.* 20 min) presentation on your research progress. This presentation should provide a brief overview of your research but should focus on those issues which require input from your committee members. Remember that your committee members have already received and reviewed your progress report.

E. In the final year of your program

1. Call a permission-to-write meeting. The purpose of the permission-to-write meeting is to survey the structure and content of the thesis as a unified piece of work. The committee needs to be provided with a standard permission-to-write document at least **5 working days** before the meeting. The Supervisor should review the permission-to-write document before it is submitted. For details on what to include in

the document, see FAQ: *What should I include in my Permission to Write report?* At the meeting, you will normally be expected to give a short (less than 20 min) presentation on the proposed structure and content of your thesis.

2. Write your thesis (see FAQ: *How should I format my thesis*? and the CGPS website https://students.usask.ca/graduate/thesis-preparation.php#Beforebeginning and review recent theses from the Department available online through the library (http:/ecommons.usask.ca/handle/10388/381).
3. Once your supervisor has provided feedback on the written thesis and has approved it, the document is submitted to advisory committee members for reading and approval. Please allow the committee at least 2 weeks for MSc and 4 weeks for PhD to review the thesis.
4. After feedback from committee members (written and/or verbal) has been incorporated into the thesis, and each committee member has individually advised the committee chair that the thesis has met their approval, the thesis needs to be submitted to the graduate assistant who will deliver the thesis to the external examiner for MSc students, or submit it to CGPS for PhD students. External examiners participate in the examination of theses to provide an independent assessment of the quality of the graduate research. The external examiner, (faculty member at the UofS external to the department for MSc; external to University for PhD), will have been previously selected by the advisory committee as per CGPS guidelines. The student will not have any formal or informal communication with the external examiner until the date of the defense. CGPS requires 3 weeks' notice for an MSc thesis defense and 6 weeks' notice for a PhD thesis defense.
5. Defend the thesis. Students are required to give a public seminar (~20 minutes) prior to the defense of the thesis. After the seminar, the examining committee reconvenes with the student for the oral defense of the thesis. The oral defense can be open to the public, or can be closed, including only the student, advisory committee members and the external examiner. Open defenses are encouraged. The decision to have an open or closed defense lies with the student.
6. After successful defense of the thesis, students should be prepared to edit the final version of the thesis as directed by committee members and the external examiner. The normal recommendation is to allow either 2 or 6 weeks for the student to make the appropriate changes to the thesis. For full list of potential outcomes, consult CGPS guidelines.
7. Once the recommendations of the thesis examining committee have been met and the final version is approved by the supervisor, students who have met all other graduate program requirements on or before the April 15 (or the previous Friday if that date falls on a weekend) will be eligible to receive their degree at Spring Convocation. Note that an online application to graduate must be submitted online through PAWS by March 31. For Fall Convocation, the application to graduate must be submitted by August 31, and all graduate program requirements must be satisfied by the September term add/drop deadline. Students are responsible for ensuring the final copies of the electronic thesis submitted to the CGPS and members of their advisory committee meet all regulations as posted on the CGPS website. Students will arrange for hard copies of the thesis to be bound. The supervisor is normally expected to provide funds to cover the binding costs for copies of the theses (If requested). The student also should work closely with their advisory committee and with the graduate assistant in order to ensure all necessary documents have been received in Anatomy, Physiology and Pharmacology and in the CGPS office. Following the thesis defense, students will receive a *Convocation Checklist*. Students are strongly advised to pay close attention to this useful information.
8. Graduate!

5. Transfer from an MSc program to a PhD program

CGPS regulations regarding transfer from an MSc program to a PhD program state the following:

Transfer from an MSc program to a PhD program should take place after the end of the first year and no later than the end of the second year in the program. Recommendation to transfer from an MSc program to a PhD program must be initiated through a formal meeting of the student's advisory committee that forwards its recommendation through the academic unit to the CGPS. The following conditions must be met:

1. The student shows great promise both in terms of academic accomplishments and in potential for research. The student has completed at least 9 credit units, and has achieved a high-academic standing (>80% GPA) in these 9 credit units.
2. There is evidence of good writing and oral communication ability.
3. There is evidence the student has requisite research skills and knowledge to be able to successfully complete a PhD dissertation.
4. The student has successfully completed the PhD Qualifying Examination (see section 6 below) prior to being recommended for transfer.

Once permission to transfer is given, a new Program of Studies form must be submitted if applicable.

6. Qualifying and Comprehensive Examinations

Students in the MSc program are not required to take a qualifying or comprehensive examination.

Results of qualifying or comprehensive exams may be appealed on substantive or procedural grounds.

Qualifying Examination

This exam is used for MSc students wishing to transfer to a PhD program as outlined above (section 5), and it is a requirement for all PhD students; however, for student's with a defended MSc thesis in the research area, the advisory committee may waive that requirement. The Qualifying Examination is designed to test the student's general scientific knowledge, familiarity with the scientific literature in his or her area of interest, and suitability for study at the PhD level. It has both written and oral components. The written component is a formal proposal for the PhD research project. It must be given to members of the Advisory Committee a minimum of one week beforehand, and should contain the following components:

A. Descriptive Title, Name, and Date
B. Background
C. Specific Aims
D. Rationale
E. Preliminary Results (MSc work if transfer)
F. Proposed Research Plan and Methodology
G. Significance

The oral component includes a 15 – 20 minute oral presentation of the proposed research plan and methodology. This is followed by questions from members of the Advisory Committee. Questioning by the Advisory Committee is designed to determine whether the student has a sufficient command of the area of research interest to ensure that there is a high probability of success at the PhD level.
If the student fails the qualifying examination on the first try, a second examination can be undertaken within three months, with permission of the Dean of CGPS. Note that for the purpose of transferring from an MSc to a PhD, there is no opportunity for a second attempt. A second failure disqualifies the student from continuing in a PhD program.

Comprehensive Examination

The CGPS guidelines for PhD comprehensive examinations state that the comprehensive examination should cover topics cognate to the candidate's field of research and is used to determine whether the student has a mature and substantive grasp of the field as a whole. The Department should establish and make available clear, written and specific regulations regarding the comprehensive examination, within CGPS regulations.

All students in a PhD program are required to pass a Comprehensive Examination. The examination will be given by the advisory committee, with additional examiners added at the discretion of the advisory committee, and/or the Departmental Graduate committee (see below). The examination should be conducted after all course work has been completed and the research is well underway. The examination should be completed within the second year of the program, and not later than the third year in program. Sufficient time should be allotted in case there is a need for a re-examination. The student may choose (with approval of

Supervisor) to be examined in either an oral examination format, or a written/oral grant proposal format. The student should meet with their Advisory Committee to select their choice of exam format. The student will have a minimum of 60 days' notice for the comprehensive examination. The student must stop lab work four weeks prior to the exam and concentrate on studying for the oral or written examination.

1) ORAL EXAMINATION FORMAT

The oral format of the comprehensive examination is designed to test the student's general competence in three major sub-disciplines in one of anatomy, physiology or pharmacology cognate to the candidate's field of research chosen from a list provided by the thesis advisory committee. The student is also tested for specific knowledge in the area of research specialization.

The examining panel will be chaired by the Chair of the Advisory Committee. The Examiner in the area of research specialization will be the student's Supervisor. Additional Examiners will be chosen as appropriate for the selected sub-disciplines. The student should meet with the additional examiners assigned to the sub-discipline to determine the scope of the questions – usually a textbook is recommended. In general, questions of increasing difficulty are asked to assess the breadth of student knowledge. Following the oral examination, the examining panel assigns a grade of Pass or Fail. In the event of a failure, the student may request to retake the comprehensive examination in those sub-disciplines where performance is judged to be inadequate. A second attempt must be approved by the Dean of CGPS or designate. In this case, the second attempt must take place within two to six months following the first examination, depending on how many sub-disciplines require re- examination. The student will be required to discontinue and exit the PhD program in the event of a second failure.

2) GRANT PROPOSAL FORMAT

The objective of this examination format is to provide PhD candidates with an opportunity to apply their academic and practical scientific training toward the development and defense of a scientific research proposal. The examination will have both an oral and a written component. The written component will be a completed NSERC Discovery Grant application (Common CV, Research Proposal, Research Summary, Budget, etc.). The topic of the Research Proposal should be within the broader area of the student's training but should **not** be directly related to the thesis research. Prior to grant preparation, the student will identify **3 research ideas** they would be interested in pursuing and will circulate the title and major objectives for each project to their advisory committee members. Committee members will decide collectively on one of the topics and the student will then proceed to prepare the grant application. During grant preparation, the graduate chair can serve as a mentor but no intellectual input is allowed from committee members or other faculty members. The oral component of the comprehensive examination will be based on a defense of the grant application, and on knowledge of background information associated with the proposal and with the student's area of specialization. Other related research areas, and pertinent topics such as scientific methodology, experimental design, hypothesis formulation and testing, and statistical analysis would be included as appropriate. Depending upon the grant topic and the range of expertise of the advisory committee, members of the advisory committee and/or the Departmental Graduate committee may choose to select additional examiners. In addition, the student is required to present a brief (15 minute) summary of the research proposal at the beginning of the examination. The written component, grant application and proposal, must be provided to the committee members **5 working days** prior to the comprehensive exam meeting. The Comprehensive Examination may be repeated once with permission of the Dean of CGPS or designate. A second failure will result in the student being required to discontinue from the program.

7. Information on scholarships and graduate student stipend funding

The following list identifies the most common sources of stipend funding for graduate students in Anatomy, Physiology and Pharmacology, although they are not the only sources. Eligibility, stipend amounts, and application procedures for these and other sources of stipend funding are available on the CGPS website https://grad.usask.ca/funding/scholarships.php#University. **The graduate student funding situation should be clearly stipulated in the Graduate Student-Supervisor Agreement (Appendix C) that is signed and**

filed with your program of studies with CGPS. The Department will not allow a student to proceed with the formal application process until funding required for student stipend and operating funds for the project are secured. Students will not be admitted without funding.

a. Application to the College of Medicine Graduate Awards program (CoMGRAD) is strongly encouraged as this can be used as matching funds or top-up if other external awards are also granted.

b. NSERC/CIHR – The CGPS provides a $6,000 annual award for holders of NSERC-PGS and CIHR scholarships.

c. U of S Dean's scholarships, including International Dean's scholarships, are open to new students with a GPA of 85% or better. Students are nominated by faculty or the Department.

d. U of S Awards - open to all graduate students. Requirements for U of S Scholarships and Fellowships include a minimum 80% GPA. A call for applications from the Graduate chair is sent out to graduate students in March each year.

    i. U of S Graduate Scholarships (College of Medicine Devolved Scholarships)
    ii. GTF – Graduate Teaching Fellowships
    iii. GTA – Graduate Teaching Assistantships

e. College Awards – open to graduate students in the College of Medicine. Eligibility varies between awards. These awards are administered through the Vice Dean Research office, and a call for applications is made each year.

f. Research grants of supervising faculty – In some cases, student stipends arise solely from research grants.

8. Teaching opportunities

Graduate students, particularly those in the PhD program, are offered the opportunity to participate in teaching or to serve as demonstrators in laboratory sessions. To this end, the College of Medicine offers a number of Graduate Teaching Assistantships each year to students deemed to be making excellent progress in their thesis research.

Participation as a Graduate Teaching Assistant will bring the student into direct contact with undergraduate students and afford an appreciation of the complexities associated with the administration of courses. Individuals are typically offered teaching in specific courses within their general area of competence. The duties and approximate hours of the appointment will be outlined in writing in a letter of offer for casual employment through the collective agreement (PSAC). These duties may include attendance at lectures and meetings of course committees. Employees will complete and submit time sheets reporting actual hours worked.

Students who wish to obtain more extensive teaching experience may wish to apply for a Graduate Teaching Assistantship or a Graduate Teaching Fellowship (see Section 7.) A maximum of 10 hours/week may be spent in teaching. Duties assigned to students holding Graduate Teaching Appointments will be in accordance with collective agreement guidelines. Teaching assignments will be determined by the Department Head.

9. Time in program, leaves of absence

Official program time limits (maximum) are five years for the MSc program, and six years for the PhD program. However, the Department recommends a typical time of less than two years for an MSc and less than five years for a PhD. This time is measured from the beginning of the first term of registration for work which is included in the Program excluding any periods of approved leave. Typically May 1st following program completion for students transitioning from the BSc to the MSc program, or May 1st, September 1st or January 1st for MSc and PhD programs.

Leaves of absence are available to students for compassionate, medical, or parenting reasons (See parental leave policy - Appendix B). Reasonable accommodation is normally made. Where possible, leaves of absence from CGPS are granted in four-month blocks to coincide with the registration terms (Sept. 1 to Dec. 31; Jan. 1 to Apr. 30; May 1 to Aug. 31). Parental leave may be granted for up to 16 months.

Requests for leaves should be discussed as early as possible with supervisors so that appropriate accommodations can be made prior to the beginning of the leave. Requests should be made in writing by the student. The Dean of the CGPS, or designate, will consider any petitions arising from students whose request for leave has been denied by the supervisor or academic unit. The leave period is not included in the time period for completion of the degree, and tuition fees are not assessed during the leave though nominal student fees are assessed. While a student is on leave, all supervisory processes are suspended. Financial support offered to the student as a full-time, fully-qualified student is not normally available to students on leave. Every possible accommodation should be made, however, in assisting the student to delay for the period of the leave, rather than having to decline offers of financial assistance. Letters of support in this regard will be sent to external funding agencies. Additional information regarding registration, fees, and funding for students on leave may be obtained from CGPS.

Appendix A: Frequently Asked Questions (FAQ)

A.1 How do I set up a committee meeting?

In consultation with your supervisor, you are responsible for deciding when you should have a committee meeting. Remember that you are required to have at least one meeting each year to review your progress (typically May/June), although you can hold as many meetings per year as is deemed necessary. **All** scheduling should be done by the Department graduate assistant. Please refrain from scheduling your own meetings. When you have decided to have a meeting, contact the Departmental graduate assistant and provide the approximate dates (usually a 2-week window) and an agenda for the meeting. The graduate assistant will schedule the meeting when all or most of your committee members can attend and will find an available room. Suggested agendas are:

- For the first meeting (at 1 month):
  - Introduction of student
  - Introduction of research topic (be prepared to present an introduction and summary of the proposed research)
  - Proposed coursework
  - Source of research and stipend funding
- For the second meeting (within 4 months):
  - Proposal defense and approval
  - Program of Studies approval
- For annual meetings
  - Research progress
  - Progress in coursework
  - Stipend funding

A.2 What should I include in my research proposal?

The following is a suggested format for the research proposal – this can be modified as needed to adapt to different research questions and approaches.

1. Background information. (2 – 5 pages)
   The literature review should outline the relevant literature framework into which your work will fit. This review should essentially set up and provide a rationale for the experimental hypothesis (*i.e.* what you are setting out to demonstrate).
2. Experimental hypothesis and summary of rationale for the hypothesis.
   A hypothesis is a proposed, falsifiable explanation, made on the basis of limited evidence, as a starting point for further investigation. For example: **Estrogen maintains bone density**. Rationale for this hypothesis would be published studies that show a relationship between estrogen and bone density. A test of the hypothesis would be to manipulate estrogen and evaluate bone density. A prediction of the hypothesis would be that if you blocked estrogen, then you would lose bone density.
3. Objectives – how you will address your hypothesis

4. For each objective
    a. Rationale for experiment, and experimental hypotheses, if appropriate
    b. Design of experiment, including suitable control groups, sample sizes
    c. Proposed methods, including statistical analysis, power calculations if possible
    d. Anticipated results
    e. Anticipated problems and proposed solutions
    f. Proposed timeline
5. Actual results, if available.
6. Interpretation of results.

A.3 What should I include in my annual progress report?

A. Research Progress (4 pages max, excluding references):

1. Abbreviated literature review, providing the rationale for experiments
2. Thesis Objectives, Hypotheses
3. Progress on each objective – include summary of methods, provide results, indicate whether manuscript is being drafted, under review or published
4. An updated timeline.
5. Research presentations – posters or seminars, conferences attended, awards received etc.

B. Summary of non-research activities

1. Courses completed and marks, if available
2. Teaching responsibilities
3. Stipend funding
4. Any other activities which have an impact on your graduate program.

A.4 What should I include in my permission to write report?

The Permission-to-Write meeting allows the advisory committee to survey the structure of the thesis as a unified piece of work and allows committee members to provide input on how the student intends to structure the thesis. With this in mind, the Permission-to-Write report should include:

7. A table of contents formatted appropriately for a thesis.
8. A list of thesis objectives and hypotheses.
9. A 1-2 page summary for each proposed chapter, each of which should include
    a. the rationale, specific objectives and hypotheses for that chapter (if not included in (2) above) and
    b. a **summary** of the most significant findings for each chapter, illustrated with 1 - 3 pertinent figures with complete captions (*i.e.* NOT all the figures for each chapter). There should be an indication of which chapters are published, which are submitted and which have not yet been submitted for publication.
10. A final summary statement indicating whether the overall objectives/hypotheses of the thesis have been addressed.

A.5 How should I format my thesis?

Theses must follow a consistent editorial format. You should consult the CGPS guidelines (available at https://students.usask.ca/graduate/thesis-preparation.php, and review recent theses from the Department available through CGPS (http:/ecommons.usask.ca/handle/10388/381).

Normally the order in which the items are presented in the thesis is as follows:

1. title page,
2. abstract,
3. "permission to use the thesis",
4. table of contents,
5. list of tables,
6. list of figures, and
7. list of abbreviations.
8. The body of the thesis
    a. Introduction that gives in 1-2 paragraphs an overview of the rationale for the project
    b. Literature review, which should outline the relevant literature framework into which your work will fit. This review should in essence set up and provide a rationale for the experimental hypothesis (*i.e.* what you are setting out to demonstrate)
    c. Hypothesis and objectives. Remember, a hypothesis is a statement of what you predict will happen.
    d. The next portions of the thesis present your research, in one of two formats:
        i. If you have published much of your research, you may wish to use these publications as the individual chapters of your thesis. Within the thesis, each publication (or 'data chapter') therefore has its own introduction, materials and methods, results and figures/tables, and discussion section.

            A few important points:

            1. The references from each of the data chapters should **not** be included at the end of each chapter but be collected together in one common bibliography at the end of the thesis.
            2. Normally, methods common to different chapters should not be repeated in each chapter but included only once, and then cited as appropriate for subsequent chapters.

        ii. If you have not published your work, you may elect to use a more traditional thesis format, with one common material and methods section, several results subsections.
    e. A general discussion chapter is required following the last data chapter (i, above) or results section (ii, above). You will need to present a coherent discussion of all of your work in one common discussion, which needs to be more in-depth and insightful than a simple summary of the discussions of each of the data chapters, for example.
    f. Conclusions, future directions
    g. Bibliography
    h. Appendices

A.6 Going to conferences – who pays?

Your attendance and presentation of your research results at local, national and/or international scientific conferences is strongly encouraged. Normally, decisions on whether you will attend a particular conference are made jointly between you and your supervisor. It should be made clear in these discussions whether part or all of your expenses (*e.g.* registration, travel, accommodation and meals) will be paid through your supervisor's research grants, including how and when these expenses will be paid and/or reimbursed. In addition, travel awards are available from CGPS or from the College of Medicine. For information on these, contact the graduate assistant.

Appendix B: College of Medicine Parental leave policy

College of Medicine (CoM) Graduate Parental Leave Grant
This is a trial program being launched for a three year term beginning September 2018 and extending to August 2021. This program may be superseded by a University-level program during this term, at which point the CoM program will be revised and possibly withdrawn.

Description: A CoM graduate student may apply for financial assistance during a leave to serve as the primary care-giver immediately following the birth of a child occurring prior to the completion of the student's program.
Amount: $4000/6 month period paid via monthly installments. Renewable once with a lifetime total of $8000 per student.
Funding Source: OVDR (Assistant Dean Graduate Studies Discretionary Fund).
Eligibility Criteria:

- CoM Graduate Student in good standing for at least two terms (8 months) prior to the start of the leave
- M.Sc. student within first two years at start of leave
- Ph.D. or M.Sc./Ph.D. transfer student within first five years at start of leave
- Funding level of $16,000/yr or greater from scholarship(s), stipend, or employment in the CoM (e.g. as a TA or graduate teaching fellowship)
- Leave granted by CGPS
- Expected to return to full-time studies following the leave
- Primary caregiver
- Not receiving any additional parental benefits (e.g. Parental funding from Tri-council scholarships, EI etc.).

How to Apply:

- Completed CoM Graduate Parental Leave Grant Form
- Letter from Supervisor confirming funding level and duration for the student, student progress in program and expected time needed to complete their program upon the completion of the leave
- Doctor's note

Note: CoMGRAD scholarships may be deferred for the period of a leave approved by CGPS for parental reasons.

Appendix C: Student-Supervisor Agreement (SSA)

UNIVERSITY OF SASKATCHEWAN
College of Graduate and Postdoctoral Studies
GRAD.USASK.CA

Student-Supervisor Agreement

for thesis-based degree programs (May 2017)

This document has been adapted from guidelines created by the University of Manitoba Faculty of Graduate Studies and the Canadian Association of Graduate Studies.

NOTE:

The student should be the main party responsible for the study program and the performance of related activities, such as the submission of a Master's or Doctoral thesis, and should demonstrate a deep commitment to the program of study and interest in the selected research topic.

Introduction

- This form is designed to provide a framework for discussion between the Supervisor(s) and the Graduate Student and to establish guidelines to govern their relationship. It may be revisited at any stage of the Student's graduate program to accommodate for changes in the Student-Supervisor(s) relationship and/or the research project.

- The Supervisor(s)-Student relationship involves mentoring, support, career development, as well as academic oversight. The Supervisor(s) and Student should work together to arrive at jointly acceptable terms to establish their relationship.

- The completed form is to be regarded as an aid to planning and finishing the thesis project. It is not intended to be legally binding.

- It's anticipated that the discussion between Student and Supervisor(s) while completing this form will contribute to a healthy relationship, but completion of this agreement is not mandatory. This agreement is not a required element of a graduate student's program.

- The Supervisor and the Student are free to add items to the form to tailor it to their joint purposes.

- The Supervisor(s) is/are responsible for supervising the Student's graduate program. The Supervisor(s) is/are the Student's primary contact(s) at the University of Saskatchewan, and should be familiar with the general policies and regulations of the College of Graduate and Postdoctoral Studies as well as the specific supplementary regulations of their academic unit. This form does not replace official University of Saskatchewan statements of policy and procedure.

- If the Student or Supervisor(s) have any questions or concerns regarding their graduate program or this form, advice may be sought from the program graduate chair, unit head, or the College of Graduate and Postdoctoral Studies.

- Please visit the College of Graduate and Postdoctoral Studies website to find more information and guidance for both the Supervisor(s) and Student.

- The Supervisor(s) and the Student should review each of the points listed below and check off each box to confirm that the items have been discussed and understood by the Supervisor(s) and the Student. **Ideally, this document should be completed prior to the commencement of any research and no later than the submission of the first Progress Report for the Student.**

Part 1 | Supervisor(s) and Student

a. The supervisor(s), _____ (the "Supervisor(s)") is/are a member/s of the College of Graduate and Postdoctoral Studies and agree(s) to supervise the graduate program of the Student named below; and

b. The student _____(the "Student") is registered in the College of Graduate and Postdoctoral Studies, studying in _____ at the University of Saskatchewan and wishes to carry out a graduate program under the supervision of the above named Supervisor(s).

Part 2 | General Roles and Responsibilities

2.1 The Supervisor(s)

Please review the following points, and click each box to acknowledge that it was discussed. The

Supervisor(s) will:

☐ Guide the Student on degree requirements, appropriate elective course work, research, thesis proposal, thesis writing, suitable resources, and workspace.

☐ Assess and confer appropriate and fair acknowledgment of Student contributions to scholarly activity.

☐ Give reasonable notice to the Student of extended absences from campus, such as research leaves, and make satisfactory arrangements during such absences.

☐ Provide advice on the composition of the advisory and examining committees.

☐ Disclose any conflict of interest that may arise with respect to the Student.

The following are optional points to be discussed. If relevant, please review the following points, and click the box to acknowledge that it was discussed.

☐ Provide guidance on how to work effectively as a member of a team.

☐ Assist in providing infrastructure and facilities required for the Student to undertake scholarly activities.

☐ Any other mutually agreed upon responsibilities:

2.2 *The Student*

Please review the following points, and click each box to acknowledge that it was discussed.

The Student will:

- ☐ Familiarize themselves with the policies, procedures, regulations and deadlines established by the University of Saskatchewan, the College of Graduate and Postdoctoral Studies, and their respective unit.
- ☐ Seek the advice of the Supervisor(s) regarding required course work including appropriate electives, research, thesis proposal, thesis writing, suitable resources, and workspace.
- ☐ Demonstrate appropriate professional judgment, collegial behavior, academic rigor and integrity at all times and in every facet of the graduate program.
- ☐ Dedicate time to the graduate program to make timely and effective progress towards degree completion.
- ☐ Maintain contact with the Supervisor(s) and provide any changes in contact information.
- ☐ Consult with the Supervisor(s) regarding graduate program examiners and assessors.

The following are optional points to be discussed. If relevant, please review the following points, and click the box to acknowledge that it was discussed.

- ☐ Keep laboratory, research, and computer areas tidy, and respect the space and property of others.
- ☐ Strive to work effectively as a member of a team.
- ☐ Any other mutually agreed upon responsibilities:

2.3 *The College of Graduate and Postdoctoral Studies*

The College of Graduate and Postdoctoral Studies holds primary responsibility for ensuring that program policies, including admission criteria, program timelines, and requirements are clearly articulated and duly followed. The College also facilitates access to funding sources. Students and Supervisor(s) should be familiar with the College website, regulations, and resources.
See http://www.usask.ca/cgps/

Part 3 | Meetings

Please review the following points, and click each box to acknowledge that it was discussed.

- ☐ The Supervisor(s) and Student will arrange and attend regular meetings. The frequency of the meetings may vary, but at a minimum, meetings normally will be held every _____ (indicate weekly or monthly intervals and/or frequency).

- ☐ The Supervisor(s) will respond in a timely manner (normally not to exceed 30 days) with constructive suggestions/revisions to written work (including proposals, literature reviews, analysis, chapters), as well as research and scholarship applications, reports, manuscripts, or scholarly presentations.

- ☐ The Supervisor(s) and Student will organize and schedule an in-person meeting with the entire advisory committee at least once annually. Additional meetings may be held at the request of either the Student or the Supervisor(s). If appropriate, the Student will distribute reports in advance of scheduled meetings with the advisory committee.

- ☐ Any other mutually agreed upon responsibilities:

Part 4 | Publications

Please review the following points, and click each box to acknowledge that it was discussed.

- ☐ The Supervisor(s) will acknowledge the contribution of the Student in any publications and/or presentations, as appropriate.

- ☐ Order of authorship and the criteria to determine the order of authorship on any shared publications will be established.

- ☐ All University policies pertaining to attribution and/or authorship will be followed.

- ☐ The Student and the Supervisor(s) will discuss the patentability of any invention arising out of the research before any publication or presentation of the research in order to ensure that the patentability of the invention is not jeopardized.

- ☐ Any other mutually agreed upon responsibilities:

Part 5 | Intellectual Property, Academic Integrity, and Ethics

Please review the following points, and click each box to acknowledge that it was discussed.

- ☐ The Student will hold the copyright of their thesis.
- ☐ The Supervisor(s) and Student will abide by the specific guidelines and rules for copyright and intellectual property at the University of Saskatchewan.
- ☐ The Student will keep orderly records of all research data produced or developed.
- ☐ Where research data is produced or developed, both the Student and Supervisor(s) will have access to the data at all times.
- ☐ Both Student and Supervisor(s) understand that the provisions of the University's Intellectual Property Policy pertaining to work done while a graduate student, as well as the guidelines around publication and access to research data, remain in place even after the Student is no longer attending the University.
- ☐ The Student is responsible for understanding the meaning of academic integrity at the Uni- versity of Saskatchewan and ensuring it is applied to all their work.
- ☐ The Supervisor(s) and the Student will adhere to the University's policies and procedures related to the conduct of research, including any necessary human ethics review procedures, and animal care ethics, that must be completed.
- ☐ Where the Supervisor(s) is/are a member(s) of the University of Saskatchewan Faculty Association ("USFA"), the provisions of the USFA collective agreement will apply to the Supervisor(s).
- ☐ The following are optional points to be discussed if relevant. Please review the following points and click the box to acknowledge that it was discussed.
- ☐ The Student must complete appropriate courses on the use of animals or humans in research. Any
- ☐ other mutually agreed upon responsibilities:

Part 6 | Timelines and Completion

Please review the following points, and click each box to acknowledge that it was discussed.

☐ Progress Report forms are to be submitted at least once per 12-month period. More frequent updates may be necessary. The Advisory Committee and the Supervisor(s) must jointly complete this form.

☐ The maximum time period, including course work, examinations, research, thesis writing and defence (if applicable) permitted for the Student's graduate program is ____ years (please con- sult your specific program regulations as set by the College of Graduate and Postdoctoral Studies). It is anticipated that the Student should complete the graduate program within ____ years.

The following are optional points to be discussed. If relevant, please review the following points, and click the box to acknowledge that it was discussed.

☐ Student commitments for other duties such as non-degree research, teaching and teaching assistantships, or other responsibilities, should not delay efforts to complete the graduate program.

☐ Any other mutually agreed upon responsibilities:

Part 7 | Funding

Please review the following points, and click each box to acknowledge that it was discussed.

☐ The Student will seek opportunities for scholarships appropriate to their program, aided by the Supervisor(s).

If relevant, please review the following points, and click the box to acknowledge that it was discussed.

☐ The student will receive $ _____ per month for _____ (duration) from _____ (source) subject to satisfactory progress in program requirements.

☐ Any other mutually agreed upon responsibilities:

Part 8 | Safety

If relevant, please review the following points, and click the box to acknowledge that it was discussed.

- ☐ The Student will be subject to appropriate safety courses or requirements at the University of Saskatchewan, including those pertaining to workplace and fieldwork protection, hazardous materials, radioisotopes, laboratory and environmental waste management, or others.

- ☐ The Supervisor(s) and Student will seek input and direction from safety officers or other appropriate personnel within their unit if further training is required.

Part 9 | Privacy and Confidentiality

Please review the following points, and click each box to acknowledge that it was discussed.

- ☐ If confidential information is provided to a student in the program, the student will not disclose the confidential information to any third parties, except as required by law or as permitted by agreement pursuant to which the confidential information was shared.

- ☐ The U of S Freedom of Information and Protection of Privacy Policy applies to the Student's program along with provincial and federal legislation.

Part 10 | Professional Development

Please review the following points, and click each box to acknowledge that it was discussed.

- ☐ Opportunities for the Student to attend suitable conferences and present scholarly work will be sought.

- ☐ Sources of funding for Student travel should be investigated and applied for.

- ☐ Professional development programs, such as effective writing courses, teaching training, academic integrity, and workshops on research grants and career opportunities will be encouraged.

- ☐ Any other mutually agreed upon responsibilities:
  -

Part 11 | Vacation

Please review the following points, and click each box to acknowledge that it was discussed.

- ☐ Graduate students are entitled to a minimum of 2 weeks vacation per year in addition to weekends, statutory holidays, and university closures. Vacation time will be scheduled at times that are mutually agreed upon by the student and supervisor(s).

- ☐ Where program requirements necessitate working during weekends, statutory holidays, or university closures, alternate time off will be provided as mutually agreed.

- ☐ Students receiving funding with a service requirement may not take vacation at a time that causes disruption to the service requirement unless approved by the person/unit in charge of

the service.

Part 12 | Other

Any other mutually agreed upon responsibilities:

The Student and Supervisor(s) have reviewed and understand these guidelines.

By checking this box, you agree that you have read and understood this form, and that the information provided within is true and accurate to the best of your knowledge.

☐

student signature

student printed name

Date: _____

☐

supervisor signature

supervisor printed name

Date: _____

☐

supervisor signature

supervisor printed name

Date: _____

Copies of these signed guidelines will be kept by the Supervisor(s) and the Student, the unit (in the Student's file), and the College of Graduate and Postdoctoral Studies.

Appendix D: List of available scholarships

To be developed

Consultation with the Registrar Form

This form is to be completed by the Registrar (or his/her designate) during an in-person consultation with the faculty member responsible for the proposal. Please consider the questions on this form prior to the meeting.

Section 1: New Degree / Diploma / Certificate Information or Renaming of Existing

1 Is this a new degree, diploma, or certificate? Yes [ ] No [X]
Is an existing degree, diploma, or certificate being renamed? Yes [ ] No [X]
If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new degree, diploma, or certificate?

3 What is the credential of this new degree, diploma, or certificate? [Example - D.M.D. = Doctor of Dental Medicine]

4 If you have renamed an existing degree, diploma, or certificate, what is the current name?

5 Does this new or renamed degree / diploma / certificate require completion of degree level courses or non-degree level courses, thus implying the attainment of either a degree level or non-degree level standard of achievement?

6 If this is a new degree level certificate, can a student take it at the same time as pursuing another degree level program? Yes [ ] No [ ]

7 If YES, a student attribute will be created and used to track students who are in this certificate alongside another program. The attribute code will be:

8 Which College is responsible for the awarding of this degree, diploma, or certificate?

9 Is there more than one program to fulfill the requirements for this degree, diploma, or certificate? If yes, please list these programs.

10 Are there any new majors, minors, or concentrations associated with this new degree / diploma / certificate? Please list the name(s) and whether it is a major, minor, or concentration, along with the sponsoring department.
One major is required on all programs [4 characters for code and 30 characters for description]

11 If this is a new graduate degree, is it thesis-based, course-based, or project-based?

Section 2: New / Revised Program for Existing or New Degree / Diploma / Certificate Information

1 Is this a new program? Yes [ ] No [X]

Is an existing program being revised? Yes [ ] No [X]

If you've answered NO to each of the previous two questions, please continue on to the next section.

2 If YES, what degree, diploma, or certificate does this new/revised program meet requirements for?

3 What is the name of this new/revised program?

4 What other program(s) currently exist that will also meet the requirements for this same degree(s)?

5 What College/Department is the academic authority for this program?

6 Is this a replacement for a current program? Yes [ ] No [ ]

7 If YES, will students in the current program complete that program or be grandfathered?

8 If this is a new graduate program, is it thesis-based, course-based, or project-based?

Section 3: Mobility

Mobility is the ability to move freely from one jurisdiction to another and to gain entry into an academic institution or to participate in a learning experience without undue obstacles or hindrances.

1 Does the proposed degree, program, major, minor, concentration, or course involve mobility? Yes [ ] No [X]

If yes, choose one of the following?

- Domestic Mobility (both jurisdictions are within Canada) [ ]
- International Mobility (one jurisdiction is outside of Canada) [ ]

2 Please indicate the mobility type (refer to Nomenclature for definitions).

- Joint Program [ ]
- Joint Degree [ ]
- Dual Degree [ ]
- Professional Internship Program [ ]
- Faculty-Led Course Abroad [ ]
- Term Abroad Program [ ]

3 The U of S enters into partnerships or agreements with external partners for the above mobility types in order to allow students collaborative opportunities for research, studies, or activities. Has an agreement been signed? Yes [ ] No [ ]

4 Please state the full name of the agreement that the U of S is entering into.

5 What is the name of the external partner?

6 What is the jurisdiction for the external partner?

Section 4: New / Revised Major, Minor, or Concentration for Existing Degree Information (Undergraduate)

1 Is this a new or revised major, minor, or concentration attached to an existing degree program? Yes [ ] No [X] Revised [ ]
If you've answered NO, please continue on to the next section.

2 If YES, please specify whether it is a major, minor, or concentration. If it is more than one, please fill out a separate form for each.

3 What is the name of this new / revised major, minor, or concentration?

4 Which department is the authority for this major, minor, or concentration? If this is a cross-College relationship, please state the Jurisdictional College and the Adopting College.

5 Which current program(s), degree(s), and/or program type(s) is this new / revised major, minor, or concentration attached to?

Section 5: New / Revised Disciplinary Area for Existing Degree Information (Graduate)

1 Is this a new or revised disciplinary area attached to an existing graduate degree program? Yes [X] No [ ] Revised [ ]
If you've answered NO, please continue on to the next section.

2 If YES, what is the name of this new / revised disciplinary area?
Anatomy Physiology Pharmacology [APPY - Anat Physio Pharma - code and description for student system]

3 Which Department / School is the authority for this new / revised disciplinary area? (NOTE - if this disciplinary area is being offered by multiple departments see question below.)
Anat Physio Pharma [APPY] - currently exists in student system

4 Which **multiple** Departments / Schools are the authority for this new / revised disciplinary area?

4a Of the **multiple** Departments / Schools who are the authority for this new / revised disciplinary area and what allocation percentage is assigned to each? (Note - must be whole numbers and must equal 100.)

4b Of the **multiple** Departments / Schools who is the primary department? The primary department specifies which department / school policies will be followed in academic matters (ex. late adds, re-read policies, or academic misconduct). If no department / school is considered the primary, please indicate that. (In normal circumstances, a department / school with a greater percentage of responsibility - see question above - will be designated the primary department.)

5 Which current program(s) and / or degree(s) is this new / revised disciplinary area attached to?
Master of Science-Thesis [MSC-T-GP], Doctor of Philosophy(Transfer) [PHD-TRANS-GP], Doctor of Philosophy [PHD-GP]

Section 6: New College / School / Center / Department or Renaming of Existing

1 Is this a new college, school, center, or department?	Yes	No X
Is an existing college, school, center, or department being renamed?	Yes	No X
Is an existing college, school, center, or department being deleted?	Yes	No X

If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new (or renamed or deleted) college, school, center, or department?

3 If you have renamed an existing college, school, center, or department, what is the current name?

4 What is the effective term of this new (renamed or deleted) college, school, center, or department?

5 Will any programs be created, changed, or moved to a new authority, removed, relabelled?

6 Will any courses be created, changed, or moved to a new authority, removed, relabelled?

7 Are there any ceremonial consequences for Convocation (ie. New degree hood, adjustment to parchments, etc.)?

Section 7: Course Information

1 Is there a new subject area(s) of course offering proposed for this new degree? If so, what is the subject area(s) and the suggested four (4) character abbreviation(s) to be used in course listings?

Yes - Anatomy Physiology Pharmacology [APPY - Anat Physio Pharma - code and description for student system]

2 If there is a new subject area(s) of offerings what College / Department is the academic authority for this new subject area?

College of GP / Department of APPY - both currently exist in student system

3 Have the subject area identifier and course number(s) for new and revised courses been cleared by the Registrar?

Yes

4 Does the program timetable use standard class time slots, terms, and sessions? Yes [X] No [ ]

If NO, please describe.

5 Does this program, due to pedagogical reasons, require any special space or type or rooms? Yes [ ] No [X]

If YES, please describe.

NOTE: Please remember to submit a new "Course Creation Form" for every new course required for this new program / major. Attached completed "Course Creation Forms" to this document would be helpful.

Section 8: Admissions, Recruitment, and Quota Information - as per current set-up

1 Will students apply on-line? If not, how will they apply?

2 What term(s) can students be admitted to?

3 Does this impact enrollment?

4 How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

5 Can classes towards this program be taken at the same time as another program?

6 What is the application deadline?

7 What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)

8 What is the selection criteria? (IE. If only average then 100% weighting; if other factors such as interview, essay, etc. what is the weighting of each of these in the admission decision.)

9 What are the admission categories and admit types? (IE. High school students and transfer students or one group? Special admission? Aboriginal equity program?)

10 What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

11 Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

12 Letter of acceptance - are there any special requirements for communication to newly admitted students?

13 Will the standard application fee apply?

14 Will all applicants be charged the fee or will current, active students be exempt?

15 Are international students admissible to this program?

Section 9: Government Loan Information - as per current set-up

NOTE: Federal / provincial government loan programs require students to be full-time in order to be eligible for funding. The University of Saskatchewan defines full-time as enrollment in a minimum of 9 credit units (operational) in the fall and/or winter term(s) depending on the length of the loan.

1 If this is a change to an existing program, will the program change have any impact on student loan eligibility?

2 If this is a new program, do you intend that students be eligible for student loans?

Section 10: Convocation Information (only for new degrees) - not applicable

1 Are there any 'ceremonial consequences' of this proposal (ie. New degree hood, special convocation, etc.)?

2 If YES, has the Office of the University Secretary been notified?

3 When is the first class expected to graduate?

4 What is the maximum number of students you anticipate/project will graduate per year (please consider the next 5-10 years)?

Section 11: Schedule of Implementation Information

1 What is the start term?

202005 [May 2020]

2 Are students required to do anything prior to the above date (in addition to applying for admission)? Yes [ ] No [X]

If YES, what and by what date?

Section 12: Registration Information - as per current set-up

1 What year in program is appropriate for this program (NA or a numeric year)?
(General rule = NA for programs and categories of students not working toward a degree level qualification.)

2 Will students register themselves? Yes [ ] No [ ]
If YES, what priority group should they be in?

Section 13: Academic History Information - as per current set-up

1 Will instructors submit grades through self-serve? Yes [ ] No [ ]
2 Who will approve grades (Department Head, Assistant Dean, etc.)?

Section 14: T2202 Information (tax form) - as per current set-up

1 Should classes count towards T2202s? Yes [ ] No [ ]

Section 15: Awards Information

1 Will terms of reference for existing awards need to be amended? Yes [ ] No [X]
2 If this is a new undergraduate program, will students in this program be eligible for College-specific awards?

Section 16: Government of Saskatchewan Graduate Retention (Tax) Program - as per current set-up

1 Will this program qualify for the Government of Saskatchewan graduate retention (tax) program? Yes [ ] No [ ]
To qualify the program must meet the following requirements:
- be equivalent to at least 6 months of full-time study, and
- result in a certificate, diploma, or undergraduate degree.

Section 17: Program Termination

1 Is this a program termination? Yes [X] No [ ]

If yes, what is the name of the program?

Majors of Anatomy and Cell Biology [ACB], Physiology [PHSI], and Pharmacology [PCOL] in the Master of Science-Thesis [MSC-T-GP], Doctor of Philosophy (Direct) [PHD-DIRCT-GP], Doctor of Philosophy(Transfer) [PHD-TRANS-GP], Doctor of Philosophy [PHD-GP] programs

2 What is the effective date of this termination?

202005 [May 2020]

3 Will there be any courses closed as a result of this termination? Yes [X] No [ ]

If yes, what courses?

Will be closed through the moribund process

4 Are there currently any students enrolled in the program? Yes [X] No [ ]

If yes, will they be able to complete the program?

Students will be allowed to complete their current program or move to the new program

5 If not, what alternate arrangements are being made for these students?

6 When do you expect the last student to complete this program?

2025 - students have 6 years to complete

7 Is there mobility associated with this program termination? Yes [ ] No [X]

If yes, please select one of the following mobility activity types.

- Dual Degree Program [ ]
- Joint Degree Program [ ]
- Internship Abroad Program [ ]
- Term Abroad Program [ ]
- Taught Abroad Course [ ]
- Student Exchange Program [ ]

Partnership agreements, coordinated by the International Office, are signed for these types of mobility activities. Has the International Office been informed of this program termination? Yes [ ] No [ ]

Section 18: Proposed Tuition and Student Fees Information - as per current set-up

1 How will tuition be assessed?

Standard Undergraduate per credit ☐
Standard Graduate per credit ☐
Standard Graduate per term ☐
Non standard per credit* ☐
Non standard per term* ☐
Other * ☐
Program Based* ☐
* See attached documents for further details

2 If fees are per credit, do they conform to existing categories for per credit tuition? If YES, what category or rate?

3 If program based tuition, how will it be assessed? By credit unit? By term? Elsehow?

4 Does proponent's proposal contain detailed information regarding requested tuition? Yes ☐ No ☐

If NO, please describe.

5 What is IPA's recommendation regarding tuition assessment? When is it expected to receive approval?

6 IPA Additional comments?

7 Will students outside the program be allowed to take the classes?

8 If YES, what should they be assessed? (This is especially important for program based.)

9 Do standard student fee assessment criteria apply (full-time, part-time, on-campus versus off-campus)?

10 Do standard cancellation fee rules apply?

11 Are there any additional fees (e.g. materials, excursion)? If yes, see NOTE below.

12 Are you moving from one tuition code (TC) to another tuition code? Yes ☐ No ☐

If YES, from which tuition code to which tuition code?

13 Are international students admissible to the program? If yes, will they pay the international tuition differential?

NOTE: Please remember to submit a completed "Application for New Fee or Fee Change Form" for every new course with additional fees.

Section 19: TLSE - Information Dissemination (internal for TLSE use only)

1	Has TLSE, Marketing and Student Recruitment, been informed about this new / revised program?	Yes ☐ No ☐
2	Has TLSE, Admissions, been informed about this new / revised program?	Yes ☐ No ☐
3	Has TLSE, Student Finance and Awards, been informed about this new / revised program?	Yes ☐ No ☐
4	Has CGPS been informed about this new / revised program?	Yes ☐ No ☐
5	Has TLSE, Transfer Credit, been informed about any new / revised courses?	Yes ☐ No ☐
6	Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?	Yes ☐ No ☐
7	Has the Library been informed about this new / revised program?	Yes ☐ No ☐
8	Has ISA been informed of the CIP code for new degree / program / major?	Yes ☐ No ☐
9	Has Room Scheduling/Scheduling Hub/Senior Coordinator of Scheduling been informed of unique space requirements for the new courses and/or informed of program, course, college, and department changes?	Yes ☐ No ☐
10	Has the Convocation Coordinator been notified of a new degree?	Yes ☐ No ☐
11	What is the highest level of financial approval required for this submission? Check all that apply.	
	a. None - as it has no financial implications	☐
	OR	
	b. Fee Review Committee	☐
	c. Institutional Planning and Assessment (IPA)	☐
	d. Provost's Committee on Integrated Planning (PCIP)	☐
	e. Board of Governors	☐
	f. Other	☐

SIGNED

Date: December 9, 2019

Registrar (Russell Isinger): Russell Isinger

College / Department Representative(s): Martha Smith

IPA Representative(s):

UNIVERSITY OF SASKATCHEWAN
College of Graduate and Postdoctoral Studies
GRAD.USASK.CA

116, 110 Science Place
Saskatoon SK S7N 5C9 Canada
Telephone: **306-966-5751**
Facsimile: **306-966-5756**
Email: **grad.studies@usask.ca**

M E M O R A N D U M

To: Academic Programs Committee of University Council

Copy: Dr. Jeremy Lee, Department of Biochemistry, Microbiology & Immunology

From: Martha Smith, Associate Dean, CGPS

Date: December 11, 2019

Re: Program Merger – Biochemistry and Microbiology & Immunology

---

As a result of the Graduate Program Review process and strategic planning processes in the College of Medicine, the two independent departments of Biochemistry, and Microbiology & Immunology were merged effective July 1, 2018. Merging the two independent graduate programs would provide more cohesive programming and enrich the experience for the graduate students.

The merger of the two programs would have all graduate students entering a new field of study "Biochemistry, Microbiology & Immunology". Existing students would have the option to remain in their current program or transfer to the new field. The CGPS requests that APC approve the proposal effective May 1, 2020.

The proposal to merge the two programs was approved by the Graduate Programs Committee on September 30, 2019. The proposal was subsequently approved by the Executive Committee of CGPS on November 25, 2019.

Attached please find the full program proposal and supporting documents.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

UNIVERSITY OF SASKATCHEWAN

Memorandum

To: **Academic Programs Committee (APC)**

CC: Heather Heavin, Chair, Graduate Academic Affairs Committee, CGPS

From: Trever Crowe, Chair, Executive Committee, CGPS

Date: December 9, 2019

Re: **Merger of Biochemistry and Microbiology & Immunology graduate programs.**

On November 25, 2019, the Executive Committee (EC) of CGPS considered a recommendation from the Graduate Programs Committee (CGPS) to merge the Biochemistry and the Microbiology & Immunology graduate programs..

There was extensive discussion at the Executive that included reminders that multiple graduate programs can be housed within the same academic unit. The EC tasked the Dean to ensure clarification on the program merger process has a clear process. The question at hand is that this is not 'new programming' but rather merged programming within an already established administrative structure.

Accepted Motion: To approve the merger of Biochemistry and Microbiology & Immunology graduate programs on the condition that the corrections and clarifications to their policies identified by the graduate programs committee be incorporated and on the condition that BIOC/MCIM have identified the duration of financial support and the process of renewal of support at the Masters and at the PhD level. *Heavin/Misra*

Members agreed that this merger makes a lot of sense as one of the reasons for the amalgamation of BIOC and MCIM in the first place was to have a stronger department and stronger graduate student base while increasing collaborative efforts between the legacy departments.

The attached appendix provides additional background for consideration. If you have any questions, please contact Dean Trever Crowe at trever.crowe@usask.ca or by phone at 966-5759.

/ll

UNIVERSITY OF SASKATCHEWAN
College of Graduate
and Postdoctoral Studies
GRAD.USASK.CA

116, 110 Science Place
Saskatoon SK S7N 5C9 Canada
Telephone: **306-966-5751**
Facsimile: **306-966-5756**
Email: **grad.studies@usask.ca**

M E M O R A N D U M

To: Executive Committee of CGPS

Copy: Dr. Jeremy Lee, Graduate Chair, Biochemistry, Microbiology & Immunology

From: Graduate Programs Committee

Date: October 28, 2019

Re: Merger of Graduate Programs in Biochemistry and Microbiology & Immunology

---

On September 30, 2019, the Graduate Programs Committee considered a proposal to merge existing programs in the fields of 1) Biochemistry and 2) Microbiology & Immunology. The program merger proposal follows the departmental merger that was effective July 1, 2018. Overall, merging the graduate programs seemed logical to provide more cohesive programming for the graduate students.

Existing students would have the option to remain in their existing program, or transfer to the new field of study. New students would be admitted to the new field. The new field of study would have options for Master of Science and Doctor of Philosophy program. While previously, the Biochemistry program had opportunities for Postgraduate Diploma and Direct-entry PhD admissions, those options were not utilized, and the department does not wish to offer those options at this time.

The Graduate Programs Committee was satisfied with the proposal, and the following motion was passed unanimously:

To recommend approval of the merger of Biochemistry and Microbiology & Immunology graduate programs on the condition that the corrections and clarifications to their policies be incorporated. Tanaka/Morrison CARRIED

Following the motion, the following corrections and clarifications were incorporated into the policies and procedures section of the proposal:

- Information regarding leaves of absence was removed and replaced with language to indicate that leaves could be granted in accordance with CGPS policies.

- Information regarding qualifying exams was clarified to indicate that a second attempt was not possible for the purpose of transferring from a master's program to a PhD program.

- Information regarding comprehensive exams was clarified to indicate that students had an option to choose from two format options, and additional information on each format option was incorporated.

- Additional minor changes were incorporated for readability and language currency.

Attached please find:

- The proposal for the program merger with a table demonstrating existing requirements of the two separate fields in comparison to the new merged field.

- Support from David Cooper, Assistant Dean of Graduate Studies in the College of Medicine.

- The Graduate Program Reviews for each of the independent programs are included as well as the responses.

- The policies and procedures for the merged program provide more comprehensive information on the program.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

Biochemistry, Microbiology and Immunology Graduate Programs—Request for name change/program merger/replacement program

The following documents are attached:

1. Request for program merger (Form).

2. Biochemistry, Graduate program review 2018.

3. Comments on Biochemistry Graduate Program review-May 2018.

4. Microbiology and Immunology Graduate Program Review.

5. Comments on Microbiology and Immunology Program review – May 2018

6. Policies and Procedures Manual.
Graduate Program in Biochemistry, Microbiology and Immunology.

Commentary

The intention is to merge the existing programs into one to align with the departmental merger that became effective July 1, 2018. The current Biochemistry program will be the model for the proposed BMI program. Students in both the current Microbiology and Immunology program as well as the Biochemistry program will have the opportunity to complete their program under the new BMI field of study. If any do not wish to transfer to BMI, they will have the opportunity to complete their program under the field of study they were admitted. All new students would enter the BMI program.

As can be seen from Documents 2 and 4, the external reviews of both Departments were generally favourable. The rebuttals (Documents 3 and 5) outline the issues and how they are going to be addressed.

Perhaps the most important issue is faculty renewal. Fortunately, BMI has been given permission to hire two new faculty and three more positions are under discussion (one a Canada Research Chair in cancer biology, a retirement, and a replacement for a member who moved to a clinical department who is also retiring). Also when the Departments were reorganized, one faculty from the original Department of Anatomy decided to move to BMI. Therefore, we are expecting an influx of 5 new faculty members within 2 years. Since the total faculty at present is 28 (with 5 retiring within 2 years) this represents a large turnover. It should also be pointed out, that the issue of new faculty also drove the decision to merge the graduate programs. Simply put, it would be difficult to have a cohesive Department with new faculty having to choose between two graduate programs with which to be affiliated. Moreover, there are a number of shared research interests that span both disciplines. Additionally, the joint graduate program is expected to have 40-50 students which will provide a dynamic research force.

The need for student recruitment was also mentioned as an important issue. To address this we have already recruited 9 new students to the current MCIM M.Sc./Ph.D program this past year. Similarly, 5 have been added to the current Biochemistry program.

In September 2019, the seminar programs (990.0) for the existing programs will be merged so that each student will present their research once per year to the whole Department.

We expect that this will help to forge a Departmental unity and enhance graduate program cohesiveness, another issue that was identified and needed to be addressed.

Another gap identified by the Graduate Review was Professional Development. In 2018, Microbiology and Immunology started to offer some Professional Development and Skills lectures (some with outside speakers) as part of their 990.0 course. This was well received and we intend to have a stand-alone PDS course for BMI graduate students (perhaps with APP graduate students as well) beginning in September 2019. The intention is to involve the students in the choice of some of the speakers as recommended by the reviewers.

Finally, Document 6 is the new Policy and Procedures manual for the merged programs. In general, the Qualifying and Comprehensive exams have been made more flexible as recommended by the reviewers and admission requirements are expected to be tightened subsequent to the merger (e.g. the TOEFL test and GPA averages). As well we have introduced minimum stipends for graduate students which will be consistent across the merged program.

UNIVERSITY OF SASKATCHEWAN

Proposal for Academic or Curricular Change

PROPOSAL IDENTIFICATION

Title of proposal: Merging of the Biochemistry and the Microbiology and Immunology Graduate Programs

Degree(s): MSc., PhD.

Field(s) of Specialization: Biochemistry, Microbiology and Immunology.

Level(s) of Concentration:

Option(s):

Degree College: CGPS

Contact person(s) (name, telephone, fax, e-mail): Jeremy Lee (4371) and Sylvia van den Hurk (1559)

Proposed date of implementation: May 1 2020.

Proposal Document

Rationale

The Biochemistry Department and the Microbiology and Immunology Department merged on July 1st 2018 to form a new Department called BMI. The new BMI Department will offer a single undergraduate program in 2021 which prompted consideration for merging the Graduate programs as well. At the first meeting of the new Department in September 2018, there was a proposal for merging the graduate programs for which there was a positive unanimous vote. It is anticipated that there will be several positive impacts as detailed below.

Impact of the change

- impact on students: It is envisaged that many graduate student activities will be merged. These include seminars, research presentations, professional development and faculty/student BBQ's. The merger will help to provide a more cohesive student body with increased morale.
- impact on faculty: Improved faculty cooperation is to be expected.
- impact on staff: At present the two graduate programs are administered differently. E.g Admissions and regulations for the qualifying and comprehensive exams have different requirements. Merging the programs will lead to simplified procedures and administrative efficiency.

- impact on alumni: None
- affect on other programs, departments, colleges, centres: None
- impact on university-wide systems (e.g. SiRIUS, UniFi, PAWS, U-Friend, Library, About US, etc.): implementation of new program and course codes, and possible one-time update to existing student records
- resource areas such as library resources, physical facilities, and information technology: None
- external impact (e.g. reputation, accreditation, other institutions, high schools, community organizations, professional bodies): A larger merged program is expected to have a larger impact.

Costs

Please describe whether this change will result in any additional costs for the university (ie, repainting signs, technical changes in SiRIUS, PAWS, financial services, etc.):
There will be minor in-kind costs associated with modifications to the Graduate Programs listed in the University Catalogue and updates to the student information system.

Consultation

Please describe any consultation undertaken with other university offices, such as Student and Enrolment Services, Institutional Strategy and Analytics, Institutional Planning and Assessment, Financial Services, Facilities Management, Office of the University Secretary, Information Technology Services, etc. Please attach any memos or emails received about this consultation.

Please also note the “Commentary” and other attached documents.

	Existing Biochemistry Programs	Existing Microbiology and Immunology Programs	Proposed Biochemistry, Microbiology and Immunology Programs
Postgraduate Diploma	<u>Admission Requirements</u> • Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. • a cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. 60 credit units) • a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study <u>Diploma Requirements</u> • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects • a minimum of 30 credit units	N/A	*We wish to delete this program. There have been very few students (perhaps 2?) in the last twenty years and it does not serve a useful purpose.*
Master of Science	<u>Admission Requirements</u> • Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for	<u>Admission Requirements</u> • Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for	<u>Admission Requirements</u> • Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language

	applicants whose first language is not English. • a cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. 60 credit units) • a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study <u>Degree Requirements</u> Students must maintain continuous registration in the 994 course. • GPS 960.0 • GPS 961.0, if research involves human subjects	applicants whose first language is not English. • a cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. 60 credit units) • a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study <u>Degree Requirements</u> Students must maintain continuous registration in the 994 course.[1] • GPS 960.0 • GPS 961.0, if research involves human subjects	is not English. • a cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. 60 credit units). • a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study <u>Degree Requirements</u> Students must maintain continuous registration in the 994 course. • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects

[1] This is required, though not formally noted in the catalogue description.

	• GPS 962.0, if research involves animal subjects • BIOC 990.0 • BIOC 994.0 • a minimum of 9 credit units at the 800-level • thesis defense	• GPS 962.0, if research involves animal subjects • MCIM 990.0 • MCIM 994.0 • a minimum of 9 credit units of graduate courses • thesis defence	• BMIS 990.0 • BMIS 994.0 • a minimum of 9 credit units at the 800-level • thesis defense
Direct-Entry Doctor of Philosophy	<u>Admission Requirements</u> With the recommendation of the unit, direct entry Ph.D. admission is available to exceptionally strong students, who show great promise in terms of academic accomplishments and potential for research. • Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. • a cumulative weighted average of at least a 80% (U of S grade system equivalent) in the last two years of study (i.e. 60 credit units) • a four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study		• We have decided not to allow direct entry without a MSc.

	Degree Requirements Students must maintain continuous registration in the BIOC 996 course. • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects • At least 9 credit units of course work at the graduate level must be successfully completed in the first year of the program. • Students must enroll in BIOC 990.0 in the Fall and Winter terms. • BIOC 996[2] • comprehensive examination • qualifying examination • thesis defense		
Doctor of Philosophy (with earned	Admission Requirements • Language Proficiency Requirements: Proof of English proficiency may be required for	Admission Requirements • Language Proficiency Requirements: Proof of English proficiency may be required for	Admission Requirements • Language Proficiency Requirements: Proof of English proficiency may be required for

[2] This is required, though not included in the bulleted list in the catalogue

Master's degree)	international applicants and for applicants whose first language is not English. • Master's degree, or equivalent, from a recognized university in a relevant academic discipline • a cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. coursework required in Master's program) <u>Degree Requirements</u> Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects • A minimum of 9 credit units at the 800-level including any such	international applicants and for applicants whose first language is not English. • Master's degree, or equivalent, from a recognized university in a relevant academic discipline • a cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. coursework required in Master's program) <u>Degree Requirements</u> Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects • MCIM 990.0 • MCIM 996.0	international applicants and for applicants whose first language is not English. • Master's degree, or equivalent, from a recognized university in a relevant academic discipline • a cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. coursework required in Master's program) <u>Degree Requirements</u> Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects • BMIS 990.0 • BMIS 996.0 • comprehensive examination

	courses taken at the M.Sc. level.[3] • BIOC 990.0 • BIOC 996.0 • comprehensive examination • qualifying examinations • thesis defense Note: the advisory committee may recommend courses to address specific deficiencies of the student.	• a comprehensive examination to establish candidacy for the awarding of the Ph.D. • if the student entered the Ph.D. program directly from another institution, a minimum of 3 credit units • thesis defence	• qualifying examinations • thesis defense Note: the advisory committee may recommend courses to address specific deficiencies of the student and/or to complement the research program.
Transfer from Master's to PhD	Degree Requirements Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects • BIOC 990.0 • BIOC 996.0 • a minimum of 9 credit units at the 800-level • comprehensive examination • thesis defense Note: the advisory committee may recommend courses to address specific deficiencies of the student.	Degree Requirements Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects • MCIM 990.0 • MCIM 996.0 • a comprehensive examination to establish candidacy for the awarding of the Ph.D. • a minimum of 9 credit units • thesis defence	Degree Requirements Students must maintain continuous registration in the 996 course. • GPS 960.0 • GPS 961.0, if research involves human subjects • GPS 962.0, if research involves animal subjects • BMIS 990.0 • BMIS 996.0 • a minimum of 9 credit units at the 800-level • comprehensive examination • thesis defense Note: the advisory committee may recommend courses to address specific deficiencies of the student.

[3] This language is unusual. There is no minimum cu required for PhD students in Biochem currently.

UNIVERSITY OF SASKATCHEWAN

Report Form for Program Termination

Program(s) to be deleted: The fields of 1) Biochemistry, and 2) Microbiology on the Master of Science and Doctor of Philosophy degree programs

Effective date of termination: May 2020. Students already enrolled will be permitted to complete their programs

1. List reasons for termination and describe the background leading to this decision.

2. Technical information.

2.1 Courses offered in the program and faculty resources required for these courses.
All resources will be redirected to the new combined BMIS graduate programs.

2.2 Other resources (staff, technology, physical resources, etc) used for this program.
All resources will be redirected to the new combined BMIS graduate programs.

2.3 Courses to be deleted, if any.
Courses to be relabeled. The individual 99X courses will be replaced with BMIS 99X courses.

2.4 Number of students presently enrolled.

2.5 Number of students enrolled and graduated over the last five years.

3. Impact of the termination.
Internal

3.1 What if any impact will this termination have on undergraduate and graduate students? How will they be advised to complete their programs?
Program mergers at the undergraduate level have already been approved. The combined program is anticipated to be an improvement over the three independent programs. Current students will have a choice to transfer to the new program or complete the program under the previous field of study.

3.2 What impact will this termination have on faculty and teaching assignments?
Combining the programs is anticipated to result in better utilization of teaching resources.

3.3 Will this termination affect other programs, departments or colleges?
No

3.4 If courses are also to be deleted, will these deletions affect any other programs?
N/A

3.5 Is it likely, or appropriate, that another department or college will develop a program to replace this one?

No. Three independent programs are being replaced by one cohesive program. Other units will not be impacted.

3.6 Is it likely, or appropriate, that another department or college will develop courses to replace the ones deleted?

N/A

3.7 Describe any impact on research projects.

N/A

3.8 Will this deletion affect resource areas such as library resources, physical facilities, and information technology?

Changes to physical facilities for the combined department are already in place to support the new combined program replacing the program deletions.

3.9 Describe the budgetary implications of this deletion.

While there are some initial in-kind contributions for system related work, overall budget implications would be negligible.

External

3.10 Describe any external impact (e.g. university reputation, accreditation, other institutions, high schools, community organizations, professional bodies).

N/A

3.11 Is it likely or appropriate that another educational institution will offer this program if it is deleted at the University of Saskatchewan?

N/A

Other

3.12 Are there any other relevant impacts or considerations?

3.13 Please provide any statements or opinions received about this termination.

(Optional)

4. Additional information. *Programs which have not undergone recent formal reviews should provide additional relevant information about quality, demand, efficiency, unique features, and relevance to the province.*

UNIVERSITY OF SASKATCHEWAN

Department of APP
Anatomy, Physiology & Pharmacology
College of Medicine

2D01 HLTH – 107 Wiggins Road
Saskatoon SK S7N 5E5
Telephone: (306) 966-6292
Facsimile: (306) 966-6220

November 05, 2018

Kelly Clement
Assistant to the Associate Dean,
Graduate Academic Affairs and Programs
College of Graduate and Postdoctoral Studies
University of Saskatchewan

RE: College of Medicine Support for the BMI graduate programs merger

Dear Ms. Clement:

I am writing confirm that the College of Medicine supports the proposed merger of graduate programs within the new Department of Biochemistry, Microbiology and Immunology (BMI). This fusion of their two graduate programs has long been anticipated as an outcome of the BMI merger.

Sincerely,

David M.L. Cooper, PhD
Assistant Dean Graduate Studies College of Medicine
Professor & Canada Research Chair
Department of Anatomy, Physiology and Pharmacology
College of Medicine
University of Saskatchewan
107 Wiggins Road
Saskatoon, SK, S7L 5E5

Summary Assessment - Biochemistry

Does this program, as it is resourced, meet the expectations of quality as compared to other similar programs delivered at other institutes across Canada?

☒Meets the expectations for a quality graduate program

What did you find most commendable about the program (maximum two)?

1. High quality of graduate students in the program.
2. Access to high quality equipment and resources for many research areas

What, if any, enhancements would you recommend at this time (maximum two)?

1. Renewal of faculty complement.
2. Continue to improve graduate student funding.

Would you recommend that students apply to this program? Would you considering hiring, recommending, or recruiting one of its graduates to your academic or research unit?

Yes

We provide a summary assessment in each sub-category, with further details provided in the full report.

1. Program Objectives and Curriculum

Quality Standards

☒ Meets
☐ Does Not Meet

The program meets the standards expected of a modern graduate program in Biochemistry, with clear goals and a solid curriculum. Some minor adjustments might be considered, as detailed in the attachment.

2. Program Enrolment and Student Funding

Quality Standards

☒ Meets
☐ Does Not Meet

The overall quality of the graduate student population was impressive as was their devotion to the Department. The Review Committee (RC) was concerned about the clear downward trend in student numbers, which is likely linked to reduced levels of research funding and the number of research active faculty in this Department. Recent improvements to graduate student funding is very good, and should continue. The international student tuition differential poses a very significant threat to this program and this must be seriously reconsidered.

3. Student Outcomes

Quality Standards

☒ Meets
☐ Does Not Meet

Overall student outcomes, including number of publications upon graduation and fraction of cohort who find work in relevant fields appears entirely reasonable. The RC had some concerns about typical time in program for the MSc, while the typical time in program for the PhD was appropriate.

4. Learning Environment

QUALITY STANDARDS

☒ Meets
☐ Does Not Meet

There was a strong sense of program ownership, pride and identity amongst the graduate students, which belied the concerns of the faculty noted in the self-assessment document. The RC had major concerns about the current and proposed methods for allocating student office space; this has the potential to be very negative for the Department and must be reconsidered.

A small number of alumni raised the spectre of discriminatory treatment of some international students. Discussions with current graduate students, including a one-on-one conversation with an international student who claimed knowledge of the source of these complaints, strongly suggests this is a case of a very small number of disgruntled former students. To the best of our ability to judge, current international students feel both supported and respected by the faculty and there is no systematic issue to be addressed. There was strong support from the graduate students in favour of the current two committee meetings per year format.

5. Faculty Profile

QUALITY STANDARDS

☒ Meets
☐ Does Not Meet

The faculty demonstrate research strength as evidenced by a good publication record, both in terms of quality and quantity of publications in the peer-reviewed literature. As noted above, faculty renewal will be crucial for continued success of the Department. Enhancing faculty diversity will also be critical, and there is significant support in the Department for this renewal.

6. Administration

QUALITY STANDARDS

☒ Meets
☐ Does Not Meet

Administrative support for the program appears to be adequate, though the upcoming merger of the Department with Microbiology and Immunology might cause significant administrative challenges. The faculty have a number of concerns as to how this merger will be carried out and affect the graduate program. Significant care and attention will be required in order to ensure what is a successful research program in the College of Medicine continues and builds upon its success.

REVIEWERS

Name	Date
Mark Glover, Dept. of Biochemistry, University of Alberta.	May 3rd / 2018
Matthew Paige, Dept. of Chemistry, University of Saskatchewan.	May 3rd / 2018
Jan Rainey, Dept. of Biochemistry and Molecular Biology, Dalhousie University.	May 3rd / 2018

Review Report – Biochemistry

Overview

Over a period of two days, the Review Committee (RC) met with members of the College of Graduate and Postdoctoral Studies (CGPS) – namely, the Interim Dean and Associate Acting Dean – and the College of Medicine (CoM) – namely, the Assistant Dean Graduate Studies. The RC also met with the Departmental Graduate Studies and Research Committee, including the Department Head as an *ex officio* member, and with members of the faculty. Facility tours of the Health Sciences complex and of the Canadian Light Source, a unique and internationally-renowned research facility that provides strong support to the graduate program, were also valuable components of the review. Finally, opportunities to meet with students from all stages of the graduate program were provided, both in an informal (lunch) setting and in a more formal session open to any interested students. The latter session was very well attended, with ~12 graduate students, giving the RC an opportunity to discuss the program with almost 2/3 of the current graduate student roster. The review concluded with exit meetings with representatives of the Department (Head and Graduate Chair) and with the CGPS (Acting Associate Dean). In all, the RC felt that it was able to develop an excellent understanding of functioning of this graduate program over the course of this intensive visit. The RC was particularly appreciative of the efforts of Mr. Nathan Risling from CGPS in coordinating the review.

The RC's overall assessment is that the Department of Biochemistry runs a strong graduate program that is generating well-educated and trained students, produces high-quality research and provides adequate financial support to its students. Overall student outcomes are positive and the students have a strong sense of pride, program ownership and unit identity. The principal challenge faced by this program going forward is that enrollment is systematically dropping and there is an increasingly urgent need for faculty renewal to re-invigorate graduate research. Financial support for graduate students must be maintained and scaled with cost of living, which may be difficult given the current state of federal research grant support. Continued CoM graduate funding support will be crucial here, as will re-consideration of the international student differential tuition. The RC also reviewed available data to assess several alumni comments related to potential discrimination against international students. The RC was of the opinion that this was likely a case of a very small number of disgruntled students and that international students generally felt respected and supported within the Department of Biochemistry.

1. Program Objectives and Curriculum

The program meets the standards expected of a modern graduate program in Biochemistry. The curriculum is very solid with a diverse and fairly comprehensive set of course offerings. Courses are typically cross-listed with upper year undergraduate courses, with most offered every year. Students typically had no issues finding courses to complete their program though, as is often the case, available courses were not always aligned with their specific research interests. Some specialized areas were mentioned as lacking by faculty members, for example plans are in the works for an additional graduate-level course offering in the field of metabolism. Students coming from the Biochemistry BSc program at U of S also noted issues in finding courses, given the cross-listing of almost all courses with undergraduate courses. This is not an unusual situation, however, and students noted that appropriate courses were always found following some searching of offerings in other academic units. Students noted that information regarding which courses are available outside of the Department and appropriate for their programs of study is not always

communicated as effectively as possible. The Department should consider mechanisms to improve this communication.

Both students and faculty showed significant interest in developing a professional skills course. Such a course could include training in grant writing, presentation skills, teamwork, career advancement and similar areas. Direct exposure to people in the field who have chosen a variety of career paths, both the "traditional" academic stream and those outside of academia, was also considered to be an important element of such a course. The Department might consider offering this as a mandatory course for all entry level graduate students, which would serve a dual-purpose of helping to build a sense of community within a given cohort of students and in the Department more generally. There was little enthusiasm amongst the graduate students to make this an additional course requirement, as this would cut into research time; instead, students felt that this should replace one of the more traditional courses required by the program. This latter point may be particularly beneficial to students coming from the U of S BSc program, where course selection is sometimes already noted as a challenge. Faculty might consider this replacement of a traditional course, but there is reasonable concern about overly diluting core academic content.

Some students were concerned that the current structure of the qualifying exam was too focused on memorization of undergraduate-level information and not particularly useful for modern research. The faculty did not necessarily agree, seeing much of the material in the exam as core, essential biochemistry content. The RC members certainly see both sides of this issue and recognize that this is not an easy balance to maintain but encourage the faculty to ensure that the content of the qualifying exam is well-matched to the admissions expectations of the program. For example, if a BSc degree in a field other than biochemistry is considered as appropriate preparation for the graduate program, is it reasonable to expect that [all] students in the program have a comprehensive knowledge of the field or would a somewhat more focused examination that targets testing of knowledge in appropriate sub-disciplines be equally beneficial?

Finally, improvements might be made in how program guidelines and expectations are communicated to the students. Whilst a written PDF description of the program is generally given to new students, this can often be lost, forgotten or become quickly outdated. From student descriptions of the general process, it seems to often fall upon supervisors to provide program guidance. This leads to considerable variability in the quality and quantity of guidance provided. It is recommended that the new Department website provide a detailed guide to the graduate program, as well as clearly state performance expectations on programmatic exams and other formal program requirements. Having formal expectation documents readily available might help to alleviate any perception of unfairness in evaluation of students. Having clear program expectations articulated to incoming students would be likely to minimize potential issues before they arise.

2. Program Enrolment and Student Funding

While the Biochemistry graduate program continues to be one of the strongest in the College of Medicine, there is a clear downwards trend in student numbers over the last few years. This worrisome trend appears to be linked to reduced levels of external research funding, which is a problem across the country, not just in this program. However, another important factor here is a documented decrease in the number of research active faculty. Beyond recent retirements, a significant fraction of the faculty are approaching retirement age and have ramped down research intensity. Thus, there is a clear and urgent need for faculty renewal in order to ensure a vibrant graduate program. This will also provide an opportunity to improve diversity of the faculty which might, in turn, be a major asset for graduate student recruiting.

The Department offers a nationally-competitive annual stipend to its students, particularly those in the PhD program, through a combination of external scholarships, internal scholarships, devolved funds and supervisor research grant contributions. There have been recent advances in terms of student support through CoM Graduate Scholarships. This program, in particular, is an excellent initiative by the CoM and should be continued. The graduate students appreciated the recent improvements to stipend levels, and are grateful that their stipends are at the highest level in the CoM. Students also appreciated recent changes to Department policies that allowed major scholarship winners to see an increase in take-home stipends as opposed to simply benefiting their supervisors' grant.

The Department must avoid complacency here, however. Stipend levels should be reviewed regularly to ensure that they keep pace with cost of living and fee increases. There are also major concerns related to future tuition hikes and the associated fee differential for international students. This effectively leads to an increased per-student operating grant cost to researchers, an increasingly problematic situation in the present national funding climate. This differential fee was also specifically highlighted by faculty members as a policy that is making it increasingly difficult to attract top-caliber international graduate students, particularly in a landscape where some other U15 universities have entirely done away with graduate student differential fees. The graduate students themselves also noted this as being a major barrier for recruitment and attracting students to U of S. The argument that these fees increase availability of scholarships and potentially improve funding opportunities for international students was viewed by the RC as disingenuous and that the international tuition differential represents a significant threat to this graduate research program.

The RC was somewhat surprised by the complete lack of tri-council scholarships held by graduate students in the Department. This is a concern, but not entirely surprising given the relatively small total number of students in the program and the ineligibility of international students for these awards. RC members from outside of Saskatchewan also noted that an apparent lack of graduate scholarships from the Province is unusual. This is an area of government support where the RC feels that the CGPS and/or University upper administration could seek improvement, assisting in sustainability and competitiveness of the Biochemistry graduate program.

Lack of funding for conference travel for students is an ongoing concern for the Department and students. There are clearly too few opportunities for students to network and present their work at international venues, but again, funding remains an ongoing challenge. There were several locally-organized symposia which were noted by the RC as being very positive. The RC encourages organizers to continue this very solid initiative. The CoM and/or CGPS could also consider providing additional travel support opportunities for graduate students; this would, in turn, be likely to augment tri-council scholarship success rates.

3. Student Outcomes

Outcomes for graduates from this program are in line with typical outcomes in Canada, with a high percentage of graduates being employed and a reasonable number being employed in a field related to their research. Students generally published a good to very good number of papers in peer-reviewed journals during their degree, which improves potential employment outcomes. As noted in section **2**, conference participation levels are less competitive; however, the development of high-quality local symposia is a noted significant improvement given an ongoing lack of travel funds.

The RC's main concern in this evaluation area was the length of time in program for MSc students, which has historically been too long. The cause of the long time in program was unclear, but the RC recommends that careful attention be paid by the Department to this issue. The recently implemented increase in frequency of advisory committee meetings to twice per year might help keep students' programs on track. The time to completion for the PhD program did not suffer from this issue and meets typical program expectations.

4. Learning Environment

The self-study document suggested that the Department is suffering from low morale and is in danger of losing cohesion as a unit because of the CoM-level decision to merge Biochemistry with Microbiology and Immunology, and because the spatial separation between different labs provided minimal opportunities to interact as a single unit. However, the graduate students still had a clear sense of belonging to the Department and, indeed, strongly identity as members of the Biochemistry Department as opposed to with their various research clusters that span Departments.

The students had a strong desire to build on this sense of community within the Department. Suggestions for how to do this included consistently having graduate students take visiting speakers out to lunch; implementation of one or more student organized and hosted seminar speaker visits per academic year; and, a common course that all incoming graduate students are required take. The latter may fit well with the desire for a professional skills course, as described in section **1**. The RC feels, in particular, that efforts to increase student involvement with and engagement in seminars by external speakers should be a short-term priority for the Department as this is something that could be implemented very rapidly; a common year-one course would be a longer-term priority.

There was also a strongly-expressed desire for visible celebrations of student success. For example, successful PhD defences should be publically recognized, as should publications, scholarships and similar positive results. It was also suggested that the presentation portion of thesis defences should be public, to increase visibility. The RC supports these suggestions and believes that these are simple and inexpensive ways of building a sense of community within the Department. A common poster board, computer display or similar in a prominent location might be well-suited to some of this. E-mail digests of "good news stories" to the Department as a whole would also be an effective means of communicating, given the non-centralized location of students and faculty.

An important issue that drew the RC's attention was a small number of comments from the alumni poll that suggested the existence of discrimination against international students. The RC took this very seriously and discussed the issue with faculty, administration and graduate students. All of these meetings were informative, and we found the gravity with which these comments were treated reassuring. In particular, the RC found the meeting with graduate students to be highly informative. The RC invited international students who might have concerns about discrimination to meet with us individually, and one student approached the RC for a private discussion. The student believed they knew the source of the claims of discrimination (likely two or three students who had struggled academically with the program) and passionately defended the Department's support for international students. As an example of this support, the student had developed some communication problems with their supervisor, and sought assistance from the Department Head to help resolve the issue. The student felt that they were listened to and treated very respectfully by all parties involved, particularly the Head, and the issue was successfully resolved. The end result was a productive, healthy and mutually-respectful student-supervisor relationship. In total, the RC

found no evidence of systematic discrimination in the Department and while our ability to thoroughly assess this during a brief review is limited, we can reasonably attribute the comments on this subject to a small number of disgruntled students. While this is not ideal, of course, it is an almost inevitable occurrence in any graduate program.

The RC has major concerns as to the current and future approach to allocating space to student offices. At present, four students are assigned to an office, with new students typically assigned to the next available space in the building, without any clear priority to locate them with group members. Available space is often far from their group's laboratory. There appears to be a seniority system in place where students who arrived earlier are moved to more "prime" space first regardless of whether this will locate them with their research group or not. As a whole, centralized decisions of where to locate students seems deleterious. Newly arrived students, many of whom are new not only to the Department but also to Canada, are those in most need of peer-support and development of working relationships with their research group. Instead, these students appear to have the absolute lowest priority for being situated with their research group even when, anecdotally, there is a free desk available in an office where they would be co-located with their group. The RC strongly recommends decentralization of control over office space to the Department; this will allow for research groups to have their own office space and foster a closer sense of community. Issues were also raised by students about a lack of personalization of office space being allowed (e.g., nothing on the walls, no window coverings allowed despite students being required to sit next to windows that allow anyone walking by able to look in, etc.) These concerns are independent of the lack of control over space allocation, but are very "real" in terms of student comfort, academic experience and overall productivity.

The RC also heard from faculty, students, and administration about a proposed initiative for "hoteling" office space, with students no longer having an assigned desk but rather a locker. In this initiative, students would simply take whichever desk was available when they arrived in their office on a given day. In our view, this is potentially very negative for the students and the Department as a whole. An even further eroding of the sense of "home" for students (notwithstanding the issues noted above) would be extremely off-putting and risks entirely disrupting any sense of ownership and community. This goes against what the Department hopes to achieve. Students and faculty alike were highly dismayed by this idea; students want a "home" in the Department and a permanent office is essential for this. The RC strongly recommends that hoteling not be implemented, at least in Biochemistry where students generally need to spend a great deal of time in the office as well as in the lab and require a dedicated space for data analysis, literature research and writing.

The Department recently changed their program to require two advisory committee meetings per year. This as seen by both students and the RC as a positive development, and this policy should continue.

5. Faculty profile

Despite the challenges associated with faculty renewal (section **2**), there is still significant research strength within the Department. This is evidenced by a strong ongoing publication record in high-quality, peer-reviewed journals. While this is a relatively small department and graduate program, it nevertheless represents a broad range of biochemical research areas, with corresponding graduate teaching covering most of these, and does so successfully. There are particular strengths and, perhaps, opportunities related to the Canadian Light Source and these might be pursued more closely. Nonetheless, the challenges posed by imminent retirements and difficult federal and provincial funding environments are growing and faculty renewal will be crucial for the continued success of the Department. As noted above, a more gender-diverse

faculty complement is of growing importance with the faculty complement currently being entirely male. Faculty members also noted that some particularly important infrastructure supports are currently lacking (e.g., proteomics capabilities). This, correspondingly, was noted as a limiting factor in past recruitments which have been seen as infeasible at the CoM-level due to the up-front cost required in order to successfully develop a research program in these areas. The RC recommends that the CoM consider the degree to which infrastructure may have widespread applicability (vs. only the cost-intensive nature), even if this is initially required primarily to support a given faculty recruitment, rather than dismissing proposals for hiring outright simply based on up-front costs of that recruitment.

6. Administration

Administrative support for the program appears to be adequate, though this may change if the graduate program shows future growth. In addition, the upcoming merger of Departments could result in further stress on administration of the program, though inadequate information is currently available to analyze this in any depth. Concerns were expressed by current faculty about how the graduate program will have to change and how the merger will be carried out. The RC is of the opinion that this must be done with great care and attention to ensure that the program retains its Biochemistry focus. Recruitment and program structure both strongly hinge upon program identity as a Biochemistry program and the RC is concerned that, for example, a "Biochemistry, Microbiology & Immunology" program would not serve either academic unit well. Further loss of identity in a broader "Medical Sciences" graduate program, one of the options that the RC heard mentioned, would likely be even more deleterious for recruitment of students with the requisite training and motivation to succeed in a rigorous biochemistry-focused research-based graduate degree. The graduate program is very solid and with thoughtful renewal could further improve its success. This should be viewed as a priority for the CoM, given its stated desire to improve research intensity within the CoM. The Department of Biochemistry's graduate program is a true research asset that can be further improved through CoM support.

Comments on Biochemistry Graduate Program Review—May 2018

In general, the Biochemistry Department is in agreement with the findings of the Review Committee. The following comments apply to the review assessments in each sub-category.

1. Program objectives and curriculum. (a) The department agrees that improved communication to students and faculty about graduate courses that are available to students is required. A strategy to achieve this will be developed. (b) We agree that development of a "Professional Skills Course" would be helpful in broadening the student's perspective. The format is currently under discussion, with possible solutions being to develop a stand-alone course(s) which deals with this, incorporating Professional Skills into some of the existing courses, and/or using some of the Mitacs workshops that are available. (c) The qualifying exam may be too broad-based and might be better if it concentrated on the student's sub-specialties in their area of research. This concern has in the past been expressed by some faculty in the department, and given the comments by the review team, is something that the Graduate Committee will investigate in earnest. (d) The review team suggested that better communication of program guidelines and expectations be provided to students, and not rely solely on supervisors who themselves may be unclear on some aspects. This may include placing some detailed documents on the department website. The department has been frustrated with the College by the lack of control it has over content placed on the Departmental website. A more general concern is the poor design of the College website. The Assistant Dean of Grad Studies in the College is aware of our concerns and has committed to improving the department's ability to control its content on the College website.

2. Program enrollment and student funding. (a) We agree that the only way to reverse the downward trend in enrollment is to reverse the loss of faculty which has occurred over the last 5 years and rapidly replace retiring faculty. (b) The department commits to regularly reviewing the stipend levels to ensure that they keep pace with inflation and tuition increases. It should be noted that the department in the last year established minimum stipend levels of $19,000 and $24,000 for MSc and PhD students, respectively. (d) The differential tuition fee for foreign students is a major concern for both students and faculty. Ultimately, this money will be paid from research funds, further reducing our competitiveness.

3. Student outcomes. While we agree that the average length of the MSc. is too long and needs to be addressed, at least some of this problem can be attributed to a number of unusual cases that fell within the time period assessed. These included several cases of students transferred from a PhD to a MSc program, and a case of plagiarism that resulted in a significant extension to the time in program. We are hoping that increasing the advisory committee meetings to two per year will help to keep the students on track. We also feel that an area where we have been too complacent is the monitoring of thesis writing. Past practice has often been to essentially ignore student progress in thesis writing once permission to write has been granted, and this has often resulted in students taking far too long to complete the writing process. It is clear that we cannot rely on supervisors alone to monitor this progress, and some policy regarding monitoring of thesis writing by the advisory committee will be looked into.

4. Learning environment. (a) We agree that increasing student interaction with visiting speakers, and having students organize and host a seminar speaker, are great ways to build a sense of community amongst the students themselves and the department in general. This will be pursued in the upcoming year. (b) We agree that finding ways to celebrate student successes is a great idea and will implement some of the suggestions in the upcoming year. (c) We agree that the "hotel" model for student office space is a major concern for students and faculty and must be reconsidered. It will only lead to further erosion of a sense of "home" for students. The department, however, has little if any control over this and thus needs the attention of senior administrators in the College. (d) We were pleased to hear that complaints of systemic discrimination were likely restricted to a few disgruntled former students.

5. Faculty profile. As noted above, the aging faculty profile is a very serious issue and faculty renewal should start immediately.

6. Administration. (a) There is uncertainty as to what impact the merger of the Biochemistry and Microbiology & Immunology departments will have on the administrative load of the graduate secretary. This will be closely monitored by the two graduate chairs and the department head. (b) We agree that given the strength of the Biochemistry graduate programs, that they should be maintained separate from those of the Microbiology & Immunology department. Any future consideration of merging the graduate programs will be done with great care and attention, and should only be pursued if clear and tangible benefits can be identified.

Summary Assessment - Microbiology and Immunology

Does this program, as it is resourced, meet the expectations of quality as compared to other similar programs delivered at other institutes across Canada?

☒Meets the expectations for a quality graduate program

What did you find most commendable about the program (maximum two)?

1. **High caliber junior faculty:** The department has attracted and retained several high caliber junior faculty members over the last 10 years who continue to receive funding from several national agencies. These faculty are actively training graduate students and are contributing new expertise to the department.
2. **Impressive science** is being done by these scientists and their trainees despite the fairly modest facilities available to them.

What, if any, enhancements would you recommend at this time (maximum two)?

1. Continue to **rejuvenate the faculty**, increase research income and graduate student numbers
2. **Enhance graduate student program cohesiveness** (exams, scheduling of meetings, clear articulation of expectations, timeliness of programs) and strengthen pipeline to attract undergraduates into graduate programs

Would you recommend that students apply to this program? Would you considering hiring, recommending, or recruiting one of its graduates to your academic or research unit?

Yes. The best students from the department would be competitive in the field, nationally and internationally.

Reviewers

Name	Date
Sabine Banniza (University of Saskatchewan)	April 26, 2018
Tom Hobman (University of Alberta)	April 26, 2018
Alice Telesnitsky (University of Michigan)	April 26, 2018

Review Report – Microbiology and Immunology

1. Program Objectives and Curriculum

Quality Standards

☒ Meets
☐ Does Not Meet

1.1 Do the program objectives and the program curriculum meet the expectations of the discipline in terms of breadth, depth of coverage and interdisciplinary nature; currency of content and theory; research design and analysis (where appropriate)? To what extent does the curriculum demonstrate innovation and creativity in program design?

We don't think so. The program purports to offer graduate studies in four general areas; Diagnosis, Epidemiology and Pathogenesis of Infectious Disease, Immunology/Virology, Molecular Genetics/Microbial Physiology and Tumor Biology/Immunology. With only 7-8 faculty members with active research programs it does not seem feasible to maintain cutting edge expertise in all of these areas. It would be better to recruit strategically and align with other microbiology/immunology strengths on the U of S campus (Veterinary College and VIDO) to develop true areas of strength.

1.2 Is the curriculum effective in content and/or delivery? Are courses sequenced and offered such that students are able to complete their programs in a timely manner? Does the program offer opportunities for meaningful specialization within the discipline?

Courses are currently taken within the first 18 months but appear to be selected based on availability rather than the specific needs of a student or his/her program. In general, the curriculum is strong but has an obvious gap in statistics/bioinformatics/big data management, which will be of increasing importance with the ubiquity of growing data sets. This has been recognized by the department, but it is not clear how the gap will be filled.

1.3 Does the program engage in a breadth and depth of interdisciplinary collaboration that stimulates the intellectual development of students and program faculty?

Considering expertise in the field is dispersed across Colleges and VIDO, better integration of the personnel, resources and facilities available on campus could build synergy and create a unique and exciting environment for graduate training in microbiology and immunology. Faculty are certainly aware of this (in part through associate appointments in other departments), but other than participation in a seminar series, students do not appear to have regular interactions with faculty members from these other programs.

1.4 Are the degree requirements appropriate in the academic context of the discipline and/or the expectations of the profession?

Yes

1.5 Are students engaged in various activities to develop and demonstrate learning (e.g. experiential learning, practica, field experiences, internships), where appropriate?

Travel grants are available to students to attend conferences and they are encouraged to do so as evidenced by the 11 to 18 conference presentations per year. Other such opportunities appear to have not been tapped into and students primarily learn in their research groups and through their course work.

1.6 Are the student learning outcomes (SLOs), knowledge and attributes for the program clearly articulated (e.g. conceptual and critical thinking, research skills and methodologies, specific skills and abilities central to the discipline, ethics, written and oral language abilities?

Students were somewhat unsure what the expectations (e.g. manuscripts, conference papers) were in their

programs. Nonetheless, the publication records for several of the research groups appears to be strong so we are left to conclude that there is an implied expectation by supervisors in some groups.

1.7 Are the SLOs evaluated in a manner that is effective and representative of the progressive learning outcome expectations between Masters' and PhD programs?

The program descriptions of both degrees only differ in admission standards and degree requirements. Students in both programs have to provide annual progress reports to their advisory committees through which SLOs are assessed. MSc students transitioning into a PhD program must pass a qualifying exam after 18 months that requires the critical reading of selected manuscripts and answering questions either orally or both orally and in writing. PhD students undergo an additional comprehensive exam, usually administered towards the end of the degree. Both examinations evaluate SLOs, but comprehensive exams elsewhere are considered candidacy exams and are scheduled in the first trimester of a PhD degree. PhD stream students may be better served by a qualifying/candidacy exam earlier in the program (in 3rd year for example) rather than having to pass two separate exams.

2. Program Enrolment and Student Funding

QUALITY STANDARDS

☒ Meets
☐ Does Not Meet

2.1 Is the quality of the applicants regarding admission averages; proportion of students with national scholarships acceptable? Is the unit making decisions that are consistent with attracting students of promise?

Students admitted to the program often have averages below 80% and thus do not qualify for a number of internal awards such as the Dean's Scholarship and devolved scholarships. It was felt that the expansion of the medical school from 50 to 100 seats and lowering of the average to 78% for entry has diverted students away from M&I, and the success rate of attracting students from the U of S M&I undergraduate degree has decreased. Furthermore, the majority of students in the graduate program are international students and thus do not qualify for national scholarships. Faculty members felt that students with a 78-79% average are still of high quality, but their ineligibility for scholarships complicated securing financial support for them. It will be imperative to explore other avenues to ensure adequate and secure financial support for desirable students who do not meet the minimum 80% average for internal scholarship programs.

2.2 Does this program have a national reputation as a high quality program that attracts students from outside Saskatchewan or from outside of Canada?

The interest in the program from outside the country appears to be strong, but faculty struggle to attract national and U of S undergraduate students into the graduate program. While the program is rigorous in nature, it would not be considered in the top 5 programs of its nature in Canada. Unfortunately, many of the local undergraduate and MSc students transfer into professional colleges, possibly because they are unaware of the diverse career opportunities for microbiology and immunology PhDs inside and outside of academia. Strengthening undergraduate and graduate interactions and including undergrad students in upcoming seminar series in which alumni are invited back to speak about their career paths and successes may attract more local students into the PhD program.

2.3 What is your assessment of the level of graduate student support from external awards? Is it what you would expect given the scope and profile of the program?

It is below average, in part because of the difficulty to attract students with above 80% averages, and because the majority of students are international students who are not eligible for national scholarships. Furthermore, the rule of not admitting international students directly into PhD programs has prevented admission of students with international scholarships in some cases.

2.4 Is the level of student funding available through internal scholarships, awards and teaching fellowships and other sources within the norm of what is available to comparable programs at other institutions?

Yes, at present, adequate funding appears to be in place for the duration of graduate programs, but concerns were raised that impending changes in department-specific funding may jeopardize this in the near future.

3. Student Outcomes

QUALITY STANDARDS

☒ Meets
☐ Does Not Meet

3.1 Are the learning outcomes for the graduate degrees in the program clearly identified and comparable to other similar graduate programs?

No. At least not to the review committee. Moreover, based on our discussions with representative graduate students in this program, there is significant confusion among the trainees as well. For example, major outcomes of graduate research are publications and conference presentations. Neither we nor the students were clear as to whether first or co-author publications are a requirement or expectation for a PhD or MSc degree.

3.2. Are the student outcomes assessed regularly and effectively, with evidence that the outcome assessment is being used to inform changes or enhancements to the program?

No. Students are required to have yearly supervisory committee meetings however, these meetings do not seem to adequately fulfill their intended purposes. For example, some students expressed uncertainty and angst about moving goal posts that would extend their programs. Again, this relates back to lack of clarity with respect to expected outcomes.

3.3 Are completion rates and times reasonable in light of national or international standards?

For PhD programs yes, but MSc completion times (~35-36 months average based on last 5 years) is too long. One would expect average time of no more than 30 months to complete a MSc program.

3.4. Are the percentages of students who withdraw from the program reasonable in light of national or international standards?

No concerns.

3.5 Is the quantity and quality of student publications, presentations and awards reflective of a top quality program? Are student's works published in peer-reviewed journals and conference proceedings.

The review committee was not provided with a separate list of student publications and without student names, it was not possible to cross reference this information from the faculty CVs of which we received only 8 of 13 faculty members. However, the aggregate total publications indicated in Table 3.4 of the Self-Study Report suggest strong productivity from the faculty of this department. But, without doing extensive Pubmed searching, it is not possible to assess the quality of student publications. We suggest that a list of student publications be provided for subsequent reviews.

3.6 Are graduates from the program successful in gaining entry into advanced graduate study (doctoral study, postdoctoral fellows, research in industry, or research institutes), entering academia, being licensed to practice or accredited for service? (whichever is discipline appropriate)

The committee felt that the information provided in Table 3.6 of the Self-Student Report was not sufficient

to understand how many MSc student applied to PhD programs but rather, only those that were admitted to PhD programs. Furthermore, the response rate (<25%) of the alumni (Table 3.7) is too low to gauge how successful graduates were in the work place.

3.7. Are the employment prospects in the areas of concentration [Microbiology and Immunology] and emphasis on this program the same, better or worse than those of comparable programs?

Because of the relation to health, agriculture, biotech, government and funding administration, the employment prospects for Microbiology and Immunology graduates is very high. This should be stressed to incoming graduate students and senior undergraduate students to retain and attract talent in this discipline.

3.8. Is the level of student satisfaction with their graduate experience and learning outcomes reflective of a quality program and a quality educational experience?

There is definitely room for improvement in this area. While the representative students were very proud of their association with the Microbiology and Immunology program, there was a palpable lack of social engagement among the trainees and faculty. This could be improved by providing regular and structured venues to facilitate more interaction between students and faculty and just as importantly, among trainees themselves.

4. Learning Environment

QUALITY STANDARDS

☒ Meets
☐ Does Not Meet

4.1 Are students adequately prepared and mentored in the development of critical thinking and research skills, and teaching and supervisory skills? Are there sufficient opportunities for knowledge transfer and are students participating in these activities to a high degree?

Unclear. The review committee is under the impression that this type of evaluation normally occurs during qualifying exams. However, based on student responses, it was unclear whether or not this is the case at U of S. Coupled with the fact that the comprehensive exam often occurs late in the program, the ability to assess students' critical thinking at an early stage may be lacking. All students mentioned positive experiences in TAing.

4.2 Is there an appropriate ratio of students to active graduate faculty?

Yes. Based on the information provided to us, the department has ~20 graduate students and 7 highly active research faculty. The ratio of 3 students/faculty member seems like a healthy ratio. Please note that our assessment of the faculty members research programs was based on the 8 faculty CVs that we had access to.

4.3 What is the quality of supervision students receive from their supervisor and advisory committee? Is there sufficient evidence for appropriate oversight of graduate student mentoring and scholarly and creative activities?

While the students appreciated the ability to approach and interact with their supervisors and committee members, on a variety of topics, the expectations with respect to publications, supervisory committee meetings and completion timelines were not clear to the students that we met with. In fact, there was a notable collective frustration among the students in this regard.

4.4 How accessible and effective are the information tools (website, graduate handbook, etc.) used by the program to inform students?

Again students were confused about these issues even though much of the information is readily available

on the department website. Some of these gaps may be related to the fact that the department shares a Graduate Secretary with other departments and furthermore, this person is new in the role. Also, we were initially concerned by the fact the Graduate Chair (Sylvia) spends most of her time at VIDO however, the students were adamant that they had ready access to her and that this geographical situation was not viewed as a negative.

4.5 Do the students and faculty have access to appropriate learning and information resources such as library resources, computers, classroom equipment and laboratory facilities?

Yes except that students were very concerned about losing their "permanent" desk space. The review committee shares these concerns and challenged the students to provide alternative solutions. They responded by suggesting smaller desks and more students per office is one possible solution.

4.6 How effective are the steps being taken to improve instruction based on regular and appropriate evaluation of graduate course instruction?

We were not provided with sufficient information to answer this question.

5. Faculty Profile

QUALITY STANDARDS

☒ Meets
☐ Does Not Meet

5.1 Is the level of overall faculty scholarship and creative productivity within the norms for a program of this size and scope, with respect to both the quantity and quality of the work?

No. The department includes some very productive junior to mid-career investigators. However, overall, they are underachieving as a department and fall below the norms for a program of this size and scope. It appears that some members of the department are on subsistence funding. Presently, there is not enough funding to allow research expansion in the department.

5.2 Are the faculty sufficiently engaged in research, scholarship or artistic work such that the environment created enables high quality theses and dissertations?

No. A number of faculty are very active in research, but this does not seem to translate into a vibrant and exciting atmosphere in the department. The students appreciate the approachability and informal nature of faculty-student interactions, but the students convey that they are not adequately challenged and scientific passion is uneven but overall seems low.

5.3 Is the majority of graduate teaching and supervising of graduate students being done by faculty with active and productive research programs?

Yes. Because of the linkage of funding with admission, most graduate students are engaged in active and productive labs.

5.4 Is there integration between scholarship and teaching? Does faculty bring their scholarship to their graduate teaching and mentorship?

Most of the graduate courses taught in the department are essentially dual undergraduate/graduate courses. As such, graduate students who attended the U of S as undergrads took departmental offerings as undergrads and therefore do not enroll in M&I graduate courses for the most part. In this sense, teaching and scholarship are separated, but this is fairly standard for a Canadian system.

5.5 Is the number of faculty members holding grants proportionate to the averages of other units in the discipline in competitive awards?

No, this is due to the current demographics where about 40% of the faculty appear to be winding down their programs. This underscores the urgent need to recruit new research-intensive faculty.

Active:

Linda Chelico - CIHR funding

Joyce Wilson - CIHR funding

Silvia van den Hurk - NSERC funding, recent CIHR

Jo-Ann Dillon - recent CIHR funding NSERC

Wei Xiao - large NSERC grant, recent foundation support. Significant contributions to collaborations and solid contributions as corresponding author in signalling and FEBS journals.

Kerri Kobrin: NSERC good recent papers (NAR, etc)

Sidney Hayes: low recent NSERC funding; smattering of first author virology papers—looks unlikely to renew

Newly recruited:

Kerry Lavender

5.6 Is the level of unit and/or faculty contribution to graduate student support reflective of discipline appropriate norms?

Yes, the well-funded faculty are devoting appropriate funds to graduate training.

6. Administration

QUALITY STANDARDS

☒ Meets
☐ Does Not Meet

6.1 Is the financial assistance package (scholarships, GTFs, GTAs) available to graduate students adequate?

Yes, students are currently supported through scholarships, GTFs and GTAs, as well as stipends paid from grants. Concerns were expressed that withdrawal of $87K for GTAs by the College will jeopardize the financial stability for graduate student support.

6.2 Are the operating procedures and structures of the unit sponsoring the program consistent with discipline appropriate norms?

We are not sure what information is being sought here and as such, are not able to provide an informed opinion.

6.3 Does the grad program engage, appropriate to the norms of the discipline, in a self -reflection on "where are we now" and in a planning effort on " where do we want to go " within the discipline?

We got the impression that the department is aware of its weak points and have put thought into strategies to change this. They recognize that a major impediment for further development will be the hiring of new faculty, which may or may not happen considering the financial situation of the university. They were less aware of how the department is perceived by the graduate students who thought that although faculty members were very approachable, the department as a whole did not feel like one unit. They thought that more social interactions as a group would be very good.

6.4 Is there concern with the number of problems or issues referred to the College of Graduate and Postdoctoral Studies?

The self-study document did not indicate any unusual problems and the drop-out number and causes appear to be within the norms of similar programs.

6.5 Are there sustained, effective and purposeful recruitment and admission efforts?

The department is very keen to increase the number of local students and has been engaging more with undergraduates through presentations on research programs, hiring undergraduate students as summer students, and establishing an undergraduate research project course. Regarding the latter, they are developing a third-year research-based course that will allow students to connect with the ongoing research in the department. Enhancing interactions with second-year students enrolled in a popular M & I course during their annual poster session also is encouraged.

6.6 Is there evidence that the unit sponsoring the program is dealing with program and students issues effectively and efficiently?

In general, yes. The six graduate students (out of 20 total) that attended the meeting with the review committee were happy to be in the department. However, contact with alumni appears to be weak considering the low response to the survey.

6.7 Is there evidence that the strategic vision of the program is aligned with the broader integrated planning environment at the university?

Yes, young and mid-career faculty have tri-council funding, they are keen to attract undergraduate students and the large cohort of international graduate students certainly contributes to the internationalisation of the university.

UNIVERSITY OF SASKATCHEWAN

MEMORANDUM

TO: Dr. Sylvia van den Hurk – Graduate Chair, Microbiology and Immunology

CC: Dr. Jo-Ann Dillion – Department Head, Microbiology and Immunology
Dr. David Cooper – Assistant Dean Graduate Studies, College of Medicine
Dr. Preston Smith – Dean, College of Medicine

FROM: Dr. Trever Crowe – Interim Dean, College of Graduate and Postdoctoral Studies
Dr. Tony Vannelli – Provost and Vice-President Academic

DATE: 29 October 2018

SUBJECT: **Graduate Program Review of M.Sc. and Ph.D. in Microbiology and Immunology**

The University of Saskatchewan is committed to being a major presence in graduate education and adhering to international standards in all that we do. Graduate Program Review is an important tool for measuring our success against those goals. We would like to take this opportunity to thank you and your colleagues for participating in this review process.

The reviewers stated that your program meets expectations for a quality graduate program. The Review Report provided evidence of program quality in several key areas, including

- the Department's success in attracting and retaining high quality junior faculty
- the "impressive science" being done by faculty and students

The Report also provides recommendations to help the program evolve and grow. These recommendations include:

- a need for faculty renewal
- a need for increased recruitment of undergraduate and M.Sc. students
- a need to clarify student expectations and enhance program cohesiveness

You have acknowledged the validity of these concerns and provided additional clarification where necessary. Several initiatives to improve the student experience were identified in your response to the review. You might consult with the Gwenna Moss Centre for Teaching and Learning to support your plans for curriculum enhancement. There may be mechanisms to support student recruitment, and we invite you to engage with the College of Graduate and Postdoctoral Studies on this topic. Consistent with targets set out in the University's Strategic Enrolment Management plan, we expect that the Microbiology and Immunology program will support the College of Medicine's efforts to increase graduate student enrolment. We encourage the College of Medicine to promptly respond to concerns about the general issue of space allocation for graduate students and research activity within the college.

Though the schedule has not been confirmed, it is likely that the next review of your program will take place in 2025-26. In advance of your next review, we anticipate that you will have systematically and strategically explored ways to incorporate the reviewers' recommendations into the development of your program.

We encourage you to engage the College of Graduate and Postdoctoral Studies in your program improvement processes. The College is eager to support in the continued growth of your program. In

addition, you may be able to draw on financial support from the Curriculum Innovation Fund. The fund will provide matching contributions to unit investments in program enhancements. The fund is coordinated through the office of the Vice-Provost, Teaching, Learning and Student Experience.

In addition, you may be able to draw on financial support from funds coordinated by the Gwenna Moss Centre for Teaching and Learning. These funds include the Experiential Learning Fund, the Provost's Prize for Collaborative Teaching and Learning, and the Open Educational Resources Fund.

In closing, we would like to again thank you for your very effective engagement in the graduate program review process over the past year.

Sincerely,

Trever Crowe
Interim Dean, College of Graduate and Postdoctoral Studies

Tony Vannelli
Provost and Vice-President Academic

Policies and Procedures

Graduate Programs in Biochemistry, Microbiology and Immunology.
University of Saskatchewan

September 2019

Table of Contents

1. Introduction

The Biochemistry, Microbiology and Immunology (BMI) Department offers both M.Sc. and Ph.D. degrees. The purpose of this manual is to provide additional information concerning these programs which may not be available on the College of Graduate and Postdoctoral studies (CGPS) web site (see https://www.usask.ca/cgps/policy-and-procedure/index.php) or the Departmental web site (https://medicine.usask.ca/department/schools-divisions/biomed/biochemistry,-microbiology-and-immunology.php).

2. Application and admission

Prospective students interested in BMI should learn about the department, its research activities, and the availability of opportunities by visiting its web site at: https://medicine.usask.ca/department/schools-divisions/biomed/biochemistry,-microbiology-and-immunology.php**.** This site also provides a list of "research-active" faculty.

[a] Eligibility;

***note: current CGPS minimum admission standards apply. The qualifications indicated below are being proposed for the 2021-2022 admission cycle. They indicate standards to be competetive.**

M.Sc. admission requires an honours Baccalaureate (or equivalent) from a college or university of acceptable standing, and equivalent to the degree at this university with a specialization in BMI or a related discipline. A cumulative weighted average of at least 75% (U of S grade system equivalent) is the minimum standard. (Students with a lower average may be accepted under exceptional circumstances).

Ph.D. admission requires a Master's degree, or equivalent, from a recognized university in an academic discipline relevant to the proposed field and a cumulative weighted average of at least 80% (U of S grade system equivalent) In order to assess the quality of the student's M.Sc. degree the BMI Graduate Committee will review the thesis and any published papers. If the M.Sc. is not deemed to be equivalent, then the applicant must enroll as a M.Sc. student and take a Ph.D. qualifying exam within the first 2 years (see regulations for this below).

If English is not your native language, you must arrange for a certified result of the "Test of English as a Foreign Language" (TOEFL) or International English Learning Test Score (IELTS) to be sent directly to us. Note that our department requires a minimum score of 90 (TOEFL, with a minimum of 20 in each area) and 6.5 (IELTS, with a minimum of 6.5 in each area). For those who are unable to get access to TOEFL or IELTS exams, alternative English language exams recognized by the CGPS are acceptable. Please visit the above web site for more information https://grad.usask.ca/admissions/admission-requirements.php#11Englishlanguageproficiencyrequirements.

[b] How to apply;

1. If you intend to apply to the BMI graduate program, it is required that you first find a faculty member in our Department who will agree in advance to be your research supervisor (assuming that all other conditions are met). Please contact those individuals whose research you find interesting. Applications can be made at any time.

2. Once you have identified a faculty member who is willing to be your supervisor, you will have to formally apply to the graduate program through the CGPS. The graduate studies application fee is $90 CDN and is NOT refundable. Completion of CGPS's online application form requires that original academic transcripts and formal proof of English proficiency be provided.

3. Once the BMI Department has recommended admission to CGPS, the CGPS will need to

approve the admission and issue an offer of admission before you can begin your studies.

Although students may apply to enter our graduate program at any time, the university calendar year begins in September and graduate classes are offered either in September (Term 1) or in January (Term 2). The first round of the Dean's Scholarship is due on December 1st but in any event, complete applications for admission must be received by February 1 in order to be considered for scholarship funding beginning the following September. North American applicants should apply a minimum of 4 months prior to anticipated start date, while due to visa processing, international applicants should apply a minimum of 6 months prior to your anticipated start date.

3. Graduate program

[a] Minimum program requirements;

At the beginning of the program, the student in consultation with the supervisor will prepare a research proposal that will be submitted to the graduate advisory committee to assess its suitability (Guidelines attached). A new graduate student should have the first Advisory Committee meeting within four months after registration to establish a Program of Studies (POS) outlining the research, ethics requirements, course work, and committee members.

For both M.Sc. and Ph.D. programs the major requirement for continuation in the program is progress in all components. This includes progress in course work, research, written and oral presentation skills, and thesis writing. If, at any time, the supervisor, committee chair or any other member of the student's advisory committee has reason to believe that progress is not satisfactory then a committee meeting should be called immediately to discuss and address the issue(s).

Course work: For the M.Sc. program the student must take 9 credit units consisting of graduate level (800) courses with a 70% cumulative grade point average, with no individual mark being below 60%. The committee may recommend additional courses at any level in order to bolster a student's knowledge in perceived areas of weakness and/or to complement the research program.

For the Ph.D., no graduate level (800) courses are required. In some cases, additional courses may be recommended by the student's committee to bolster a student's knowledge in perceived areas of weakness and/or to complement the research program. (Note: It may be beneficial for students to take several 800 level courses to increase their chances of winning scholarships but a cumulative gpa of 80% is required with no individual mark being below 70%).

Graduate Student seminars: Graduate students are required to present one seminar each year on their research progress as part of a graduate seminar course (BMI990). Yearly registration and attendance in BMI990 is required throughout the graduate program.

Research progress: Progress in research will be assessed by the committee annually (usually in May) on the basis of a short but formal presentation and by submission of a progress report to the advisory committee at least one week before the scheduled committee meeting. The written report should contain a brief overview of relevant background, hypotheses, experimental methods, results and future plans. A list of

references is required. The report should include background, hypotheses, experimental methods, results and future plans. A list of references is required. The report should also include a list of courses completed and those remaining to be taken, and achievements (e.g., publications, conferences and awards) during the past year.

The students should address the questions raised in previous meeting(s) in their progress report. It is the responsibility of the supervisor to make sure that the questions previously raised have been addressed. (A section "issues to be addressed prior to next meeting" will be added to the minutes to help address this problem.)

Please remember to follow the guidelines (see attached). The report is not supposed to be a mini-thesis so the **introduction** should be brief (maximum 4 pages, 1.5 spacing). The committee is trying to assess the progress in the last year so it is helpful to start the **results** with a brief overview of the previous results. Please make it absolutely clear which are the new results.

The Progress report should be submitted to the supervisor in early April at least 3 weeks before the meeting date for a thorough review and suggested revisions should be made before it is submitted to the members of the committee at least 7 days before the meeting date. If the guidelines are not followed it will be returned to the student for revision and the meeting will be rescheduled. The main committee meeting will be held in May.

In addition, there will be a second, shorter meeting in November at which the student will again present a short talk and an addendum to the progress report (submitted by November 1st) which only describes progress in the last 6 months (maximum 2 pages, 1.5 spacing, + figures).

Presentation skills: Oral communication skills will be assessed on the basis of the talks to the committee as well as the formal presentations in journal club (BMI890 or equivalent). Written communication skills will be assessed on the quality of the initial proposal and the subsequent progress reports. If required, the committee should expect to see a significant improvement in both oral and written abilities as the student progresses through the program. (Note: Many language courses are available on campus particularly for foreign students and the advisory committee should recommend these when deficiencies are noted or difficulties are encountered. Information can be found at (https://students.usask.ca/international/#InternationalStudentandStudyAbroadCentre)

Student progress with respect to course requirements and other exams will be discussed during the meeting. At the end of the meeting, the student MAY be asked to leave the room for the Committee to discuss relevant issues. The Chair of the committee should provide a written report of the meeting to be sent to the Committee members for review, then the Graduate Secretary for data entry, submission to CGPS and filing. If necessary, the Chair may delegate a Committee member to take scientific minutes to be communicated to both Committee members and the student. The written minutes of the meeting will be made available to the Supervisor, Grad Chair and the graduate student through PAWS (online).

Thesis writing: (See attached guidelines and section [3f] below) In general, it should require between 3 to 4 months to write the thesis for MSc and PhD students respectively. Progress should be monitored initially by the supervisor with guidance from the committee if there are delays. Students should understand that the thesis must be approved, first by the supervisor, second by the advisory committee chair and finally by the committee before being sent to the external examiner. Each step takes time, usually a minimum of three weeks, and revisions may be required at each step. Even after the thesis defence, major revisions may be required. Therefore, PLEASE allow 3-4 months after submission of the thesis to the supervisor before

accepting another appointment or leaving the country!

When the student has finished or nearly finished his or her research, an Advisory Committee meeting will be held at which the student will present major experimental data to be included in the thesis along with a draft Abstract and Table of Contents to the committee members. The committee members will discuss the proposed thesis content and indicate their approval for the preparation of the thesis. This committee meeting will be independent of the student's mandatory annual committee meeting, although it may take place concurrently. (If deemed reasonable the discussion can also take place by email). Three possible outcomes may arise from this meeting:

- The student is given unconditional permission to write thesis.
- The student is given permission to write thesis pending completion of certain set(s) of experimental data.
- The content is deemed insufficient for writing thesis and additional experimental data are required for the Committee to review the progress.

Once a student has begun writing the thesis, it is in the student's as well as the department's interest that the writing and defence proceed efficiently. Recognizing that the mode of interactions between supervisors and students varies considerably, the following guidelines are expected to be adhered to once a complete draft of the thesis is in the hands of the supervisor.

- Review of a first complete draft by the supervisor; four weeks.
- Review of a second complete draft by the Advisory Committee; three weeks.
- Review of a third draft by the Advisory Committee; two weeks (optional)
- Review by the External examiner; three weeks (M.Sc..) or six weeks (Ph.D.)

Students should take account of these timelines when planning the final preparation and defence of their thesis. For example, once the thesis draft is ready for submission to the Advisory Committee, the student can expect a time lag of a minimum of 3 + 2 + 4 weeks (a total of 8 to 10 weeks) before the date of the defence, the last three or four weeks being required for the reading of the thesis by the external examiner for M.Sc. and Ph.D. theses respectively.

[b] Duration;

In general, it is expected that a M.Sc. should be completed in 2.5 to 3 years. Extension beyond 5 years requires the permission of CGPS. For completion of a Ph.D. the time frame is longer, between 4.5 to 5.5 years. Extension beyond 6 years requires the permission of CGPS. Students can request a leave of absence due to health or compassionate reasons. It is important to make arrangements with your supervisor and chair of the advisory committee well in advance if possible. Leaves must be approved in accordance with CGPS policy.

[c] Teaching;

All students are encouraged to amass as much teaching experience as possible.

As part of the program, all students will be expected to demonstrate in one of the lab courses. This involves helping the undergraduates in the lab one afternoon/week as well as marking lab reports. There is a stipend for this work that is dictated by the PSAC collective agreement. All MSc students should have a minimum of one and PhD students a minimum of two TA experiences during their respective programs. A student can exceed this minimum level as long as there is mutual agreement between the supervisor and student.

In addition, the BMI Department offers several online courses in which graduate students may participate by acting as mentors and leading small-group discussions. (Refer to PSAC for the salary, but it is restricted to BMI students.)

It is expected that time spent teaching/demonstrating will not come at the expense of the student's research.

[d] Transfer from M.Sc. to Ph.D.

Some students may seek permission from their supervisor and Advisory Committee to transfer from a M.Sc. program to a Ph.D. program before completing the requirements of the M.Sc. program, and without preparing and defending a M.Sc. thesis. This option is normally reserved for students who are doing very well in the M.Sc. program as demonstrated by a well-developed research project that can form the basis for a Ph.D. and who show great promise for success at the Ph.D. level as demonstrated by above average written and oral communication and demonstration of critical thinking skills. M.Sc. students who have completed at least 9 credits of graduate coursework, with a grade point average of 80% or higher with no mark below 70% may seek permission to transfer to the Ph.D. program as early as one year after entering the program but must do so before the end of their second year. M.Sc. students who have been in the program more than two years will not be permitted to transfer to the Ph.D. program. M.Sc. students must also pass a qualifying exam (see below). For the purpose of transferring, a student will not be permitted a second attempt at the qualifying exam. Transfers from the M.Sc. program to the Ph.D. program will be processed by CGPS once the student meets the eligibility requirements.

[e] Ph.D. qualifying exam;

The Ph.D. qualifying exam is an oral exam and is designed to test the student's general scientific knowledge in two areas which are preselected by the supervisor and Advisory Committee.

The BMI Graduate Affairs committee will appoint two faculty members who are members of the advisory committee, the Graduate Affairs committee, or BMI faculty members, to be examiners. Each examiner will provide a short list, often 2-3 references (research article and/or review article) related to the subject, with a few sample questions to focus the students' preparation for the oral examination. A minimum of 60 days will be provided for the scheduled exam date. The examination will take place three weeks after the student receives all references and sample questions. The examination questions will be related, but not limited, to the references provided. The purpose of the examination is to assess the student's ability to synthesize scientific knowledge, to analyze the experimental data, and to apply the knowledge to critical thinking. The examination will be a maximum of 3 hours.

The examination Committee consists of the two subject examiners and the Chair of the advisory committee. After the oral examination is complete, the Committee will discuss and vote Pass or Fail on each subject. If a student fails one or both subjects, she/he may request a second examination which also requires permission of CGPS. The examination will take the

same format.

Please note that the student's supervisor is not allowed to attend this exam. It is expected that time spent preparing for the exam will not come at the expense of the student's research.

Once the student has passed the qualifying exam, he/she must submit a PhD program of study. A committee meeting including required new members must take place to approve the student's Program of Study (POS).

[e] Ph.D. comprehensive exam;

All candidates for the Ph.D. degree are required to pass a comprehensive examination. This examination is usually on topics cognate to the candidate's field of research and is used as a means of judging whether the individual has a mature and substantive grasp of the discipline as a whole. A comprehensive knowledge of the subject will not only help to validate the Ph.D. student as an expert in the general field of choice, but will also complement research activity in the specific area under investigation. Normally, the comprehensive exam should be held within 2-3 years of admission into the Ph.D. program or transfer from the M.Sc. program but before submission of a Table of Contents and formal "Permission to write" (see below). The comprehensive exam will be scheduled 60 days in advance and will consist of a written and oral examination conducted by the Advisory Committee. The student, in consultation with his/her supervisor, will choose from one of two formats:

1. Question based.

Each Advisory Committee member will provide two questions related to the student's research interest to the Committee Chair, who will assemble them into 8 questions and pass them on to the student. The student's written response to each question (approximately 1 to 3 pages double-spaced per question) will be submitted to all the Committee members three weeks after receiving the questions and the oral examination will then take place one further week later.

2. Grant proposal.

The Advisory Committee will decide a subject area related to the student's research interest in consultation with the student. Once the subject has been approved, the student will have up to three weeks to prepare the proposal and distribute it to the Advisory Committee. The format of the grant proposal will be that required for NSERC as found on the current NSERC website, and comprised of the Summary of Research Proposal and Research Proposal sections (i.e. 10 pages double-spaced plus references and figures). The oral examination of the proposal will take place one week after it has been submitted to the Advisory Committee.

The oral examination involves all the Advisory Committee members and questions will be related, but not limited, to the written response or grant. After oral examination, the student will be asked to leave the room and the Advisory Committee members will discuss and vote for both written and oral components of the examination. Written comments on the examination may be provided to the student by the Chair.

Candidates will be assessed on the oral and written components on a pass/fail basis.

Only upon successful completion of the comprehensive examination at an appropriate time during the program is a student permitted to continue scholarly activity towards the Ph.D. degree. The comprehensive examination may be repeated once with the permission of the Dean of CGPS. The results of all comprehensive examinations must be reported to the CGPS. A second failure will result in the student being required to withdraw from the program. This failure may be appealed to the Graduate Academic Affairs Committee on substantive or procedural grounds.

[f] Preparation and thesis defense. (See "Progress in thesis" for time line and guidelines);

When a student and his or her Supervisor believe that the research work is complete, the student must ask the Advisory Committee for permission to write a thesis. This request can be made at any time. A table of contents must be sent to the advisory committee for approval. The Advisory Committee must satisfy itself that the quantity and quality of the research is adequate, and that the student has a good grasp of his or her own work in relation to the existing knowledge base in the area of specialization. The Advisory Committee will either grant permission to stop research and concentrate on data analysis and thesis preparation, or specify additional research work that must be carried out.

Theses may be produced in either the traditional style or the 'manuscript' style, which consists of a manuscript, or cohesive series of manuscripts, written in a style suitable for publication in appropriate venues.

A final oral defense of the M.Sc. thesis will be conducted with an Examining Committee that includes the members of the Advisory Committee plus an External Examiner who is a member of another Department of the University, and who has not been a member of the student's Advisory Committee and is approved beforehand by the graduate chair. . The Examining Committee for a M.Sc. defense will be chaired by the Chair of the Advisory Committee.

A final oral defense of the Ph.D. thesis will be conducted with an Examining Committee that includes the members of the Advisory Committee plus an External Examiner from outside the University and approved beforehand by the CGPS. A designate of the Dean of CGPS acts as Chair of the Examining Committee at a Ph.D. defense.

Both the M.Sc. and Ph.D. thesis defense are in the form of an oral examination, up to three hours in length. Immediately before the oral thesis defense, the student will present a 45 minute open seminar on the thesis work, to satisfy the final requirements for BMI 990. The seminar is followed by a closed question and answer defense of the thesis work.

4. Administration of the program

[a] Departmental Graduate committee;

The general functions of the Graduate Committee of the Department of BMI are to administer the graduate programs, to ensure that each graduate student fulfills the requirements necessary for an advanced degree in BMI, and to ensure that the standards of the Departmental graduate program are maintained.

[a] Supervisor:

The supervisor is the faculty member directly responsible for overseeing your research. The selection of a supervisor should be completed by mutual agreement among student, supervisor and the Department. The supervisor must be a faculty member of the CGPS and should be familiar with the rules and procedures of the department, the CGPS and those of the

university. Both student and supervisor are responsible for ensuring that all CGPS and departmental regulations and requirements are observed and met.

[b] Advisory committee;

The Advisory Committee for each graduate student functions to approve the Program of Study (course work and research program) as well as to ensure that the student satisfies all of the requirements of the Graduate Program in BMI. Major changes in the student's program requires the approval of the Advisory Committee. The Advisory Committee also provides a source of information and counsel for graduate students. In this way, the graduate student will be exposed to a variety of opinions and ideas and can obtain help from individuals with particular expertise required for some aspect of the research project. Members of the Advisory Committee are also available for consultation concerning problems in situations where the student does not wish to approach their supervisor. If a conflict arises between the supervisor and the student, the supervisor should attempt first to resolve any problems informally with the student. If informal discussion does not lead to a resolution, then the Graduate Chair and advisory committee should be consulted. If this is not successful, then the Dean of Graduate and Postdoctoral Studies will be consulted. Similarly, if the student encounters problems then he/she should contact the chair of the advisory committee who will advise accordingly.

The Advisory Committee is composed of the Supervisor (and any Co-Supervisor), a Chair, and other faculty members of this or other departments, chosen by the Grad Chair and the Supervisor. The minimum number of members of a M.Sc. Advisory Committee is three. The minimum number of members of a Ph.D. Advisory Committee is five, including at least one member from another, cognate department. A Supervisor and a Co-Supervisor count as one member in terms of voting.

The Advisory Committees will meet regularly in May of each year to receive the Annual Progress Report from each graduate student. A second shorter meeting will also be required in November. The Advisory Committee may also meet at any other time at the request of the graduate student, the Supervisor, the Chair of the Advisory Committee, or the Chair of the Graduate Program Committee.

[c] Student/supervisor agreement;

See attached appendix.

5. Financing graduate school

[a] Sources of funding;

Supervisors are responsible for ensuring that each graduate student receives a stipend which meets a minimum departmental standard. Currently, departmental minimums are $19,000 per year for M.Sc. students and $24,000 per year for Ph.D. students. Termination of funding cannot be made unilaterally by the supervisor and requires a meeting of the advisory committee. In the absence of any scholarships or bursaries, this stipend will usually come from research grants held by the Supervisor. However, it is beneficial for both the student and the Supervisor if some or all of the support for the student is derived from scholarship or assistantship funds. Support from external sources generally provides a higher stipend than support from internal (University of Saskatchewan) sources. In particular, a student who wins a scholarship (e.g. CoMGrad, Sask. Innovation or federal funding) will have their minimum stipend increased as follows:

MSc. $19K + 50% of the non-matched portion of the award to a maximum of $29K.

Ph.D. $24K + 50% of the non-matched portion of the award to a maximum of $36K.
For example: If a MSc. student gets a CoMGrad award (unmatched amount of $10K) then the stipend will increase to $24K of which the supervisor is responsible for $14K. i.e. both the student and supervisor benefit.
It should be noted that [a] these stipends are subject to the conditions of the award; for example, some fellowships cannot be held simultaneously, [b] devolved funds are not included and [c] stipends will revert to the base line if the fellowship is terminated.

Special case of CSC students.

The CSC PhD scholarship funding (currently $19,200/annum) requires the supervisor to pay the tuition of the student (in addition to topping up the salary to $24K as per departmental guidelines). Therefore, CSC students will be excluded from the 50% top-up stipend policy that is in place for other external scholarships.

Departmental Assistance.

The department awards scholarships in August, adjudicated by the chair of the Graduate Committee in consultation with the head. These scholarships are supported by devolved University Graduate Scholarship funds, devolved College of Medicine Graduate Scholarship funds, and departmental funds. Further information can be found in the appendix.

Financial assistance from the College of Medicine.

A limited number of Graduate Teaching Fellowships and Graduate Teaching Assistantships are awarded by the College of Medicine. Applications are submitted through the departmental Graduate Committee.

A limited number of Graduate Research Fellowships are awarded by the College of Medicine. Applications are submitted through the departmental Graduate Committee.

The Arthur Smyth Memorial Scholarship is available through the College of Medicine. These awards are intended for especially meritorious students who are nearing the end of a Ph.D. program. Applications are submitted through the departmental Graduate Program Committee.

CoMGrad scholarships are awarded biannually. Submission dates and application forms will be circulated to students when available.

Financial assistance available from the College of Graduate and Postdoctoral Studies

The CGPS offers the Dean's Scholarship for especially meritorious students. Preference is given to students entering the first year of a Ph.D. program, although entering M.Sc. students are also eligible. Applications are submitted through the departmental Graduate Program Committee.

From time to time, the CGPS announces the availability of Graduate Service Fellowships, which involve payment for various tasks or service within the University of Saskatchewan. Students who are receiving major support from other sources are ineligible, so it is unlikely that our graduate students will be able to take advantage of this program.

The Saskatchewan Innovation and Opportunity Graduate Scholarship is offered for graduate students conducting research in specific priority areas. Eligible current students will be invited to apply online. The department will also be invited to nominate a restricted number of external applicants each year. www.saskatchewan.ca/residents/education-and-learning/scholarships-bursaries-grants/scholarships/saskatchewan-innovation-and-opportunity-scholarship

Financial assistance available from external sources

A. National Science and Engineering Research Council (NSERC). Students may apply for M.Sc. or Ph.D. level awards to support their studies. Generally, students must be working in a NSERC-funded laboratory to be eligible for these awards. Application guidelines, materials and instructions are available at: http://www.nserc-crsng.gc.ca/Students-Etudiants/index_eng.asp (available to Canadian residents only)
B. Canadian Institutes for Health Research (CIHR). Students may apply for M.Sc. or Ph.D. level awards to support their studies. Generally, students must be working in a CIHR-funded laboratory to be eligible for these awards. Application guidelines, materials and instructions are available at (click 'funding opportunities'): http://www.cihr-irsc.gc.ca/e/37788.html (available to Canadian residents only)
C. A wide variety of additional internal and external awards are available, most of which are directed towards particular areas of study or particular categories of applicants. Students are strongly encouraged to explore the opportunities available. A comprehensive list of additional scholarship opportunities is maintained by the CGPS at: http://grad.usask.ca/awards/index.html

[b] Travel funds;

Students are encouraged to go to conferences. Approximately $1500 may be available from the college and $350 (Canadian) or $550 (international) from the University at least once during the program.

BMI Graduate Application Checklist

___ Application Form Online at http://www.usask.ca/CGPS/applying/index.php

___ Three Recommenders - provide 3 email addresses into the online application

___ Curriculum vitae/résumé

___ Statement of research interest/research experience

___ $90 Canadian application fee paid on line

Required, but sent separately

___ Sealed, Official versions of all transcripts

___ Official English Test score (GSR English Language Requirement Information)

Please mail the completed application package to:

Graduate Programs
BMI
College of Medicine
University of Saskatchewan
2D01 HLTH, 107 Wiggins Road
Saskatoon, Saskatchewan, Canada

Consultation with the Registrar Form

This form is to be completed by the Registrar (or his/her designate) during an in-person consultation with the faculty member responsible for the proposal. Please consider the questions on this form prior to the meeting.

Section 1: New Degree / Diploma / Certificate Information or Renaming of Existing

1 Is this a new degree, diploma, or certificate? Yes [ ] No [X]
Is an existing degree, diploma, or certificate being renamed? Yes [ ] No [X]
If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new degree, diploma, or certificate?

3 What is the credential of this new degree, diploma, or certificate? [Example - D.M.D. = Doctor of Dental Medicine]

4 If you have renamed an existing degree, diploma, or certificate, what is the current name?

5 Does this new or renamed degree / diploma / certificate require completion of degree level courses or non-degree level courses, thus implying the attainment of either a degree level or non-degree level standard of achievement?

6 If this is a new degree level certificate, can a student take it at the same time as pursuing another degree level program? Yes [ ] No [ ]

7 If YES, a student attribute will be created and used to track students who are in this certificate alongside another program. The attribute code will be:

8 Which College is responsible for the awarding of this degree, diploma, or certificate?

9 Is there more than one program to fulfill the requirements for this degree, diploma, or certificate? If yes, please list these programs.

10 Are there any new majors, minors, or concentrations associated with this new degree / diploma / certificate? Please list the name(s) and whether it is a major, minor, or concentration, along with the sponsoring department.
One major is required on all programs [4 characters for code and 30 characters for description]

11 If this is a new graduate degree, is it thesis-based, course-based, or project-based?

Section 2: New / Revised Program for Existing or New Degree / Diploma / Certificate Information

1 Is this a new program? Yes [ ] No [X]
Is an existing program being revised? Yes [ ] No [X]
If you've answered NO to each of the previous two questions, please continue on to the next section.

2 If YES, what degree, diploma, or certificate does this new/revised program meet requirements for?

3 What is the name of this new/revised program?

4 What other program(s) currently exist that will also meet the requirements for this same degree(s)?

5 What College/Department is the academic authority for this program?

6 Is this a replacement for a current program? Yes [ ] No [ ]

7 If YES, will students in the current program complete that program or be grandfathered?

8 If this is a new graduate program, is it thesis-based, course-based, or project-based?

Section 3: Mobility

Mobility is the ability to move freely from one jurisdiction to another and to gain entry into an academic institution or to participate in a learning experience without undue obstacles or hindrances.

1 Does the proposed degree, program, major, minor, concentration, or course involve mobility? Yes [ ] No [X]

If yes, choose one of the following?

- Domestic Mobility (both jurisdictions are within Canada) [ ]
- International Mobility (one jurisdiction is outside of Canada) [ ]

2 Please indicate the mobility type (refer to Nomenclature for definitions).

- Joint Program [ ]
- Joint Degree [ ]
- Dual Degree [ ]
- Professional Internship Program [ ]
- Faculty-Led Course Abroad [ ]
- Term Abroad Program [ ]

3 The U of S enters into partnerships or agreements with external partners for the above mobility types in order to allow students collaborative opportunities for research, studies, or activities. Has an agreement been signed? Yes [ ] No [ ]

4 Please state the full name of the agreement that the U of S is entering into.

5 What is the name of the external partner?

6 What is the jurisdiction for the external partner?

Section 4: New / Revised Major, Minor, or Concentration for Existing Degree Information (Undergraduate)

1 Is this a new or revised major, minor, or concentration attached to an existing degree program? If you've answered NO, please continue on to the next section. Yes [ ] No [X] Revised [ ]

2 If YES, please specify whether it is a major, minor, or concentration. If it is more than one, please fill out a separate form for each.

3 What is the name of this new / revised major, minor, or concentration?

4 Which department is the authority for this major, minor, or concentration? If this is a cross-College relationship, please state the Jurisdictional College and the Adopting College.

5 Which current program(s), degree(s), and/or program type(s) is this new / revised major, minor, or concentration attached to?

Section 5: New / Revised Disciplinary Area for Existing Degree Information (Graduate)

1 Is this a new or revised disciplinary area attached to an existing graduate degree program? If you've answered NO, please continue on to the next section. Yes [X] No [ ] Revised [ ]

2 If YES, what is the name of this new / revised disciplinary area?

Biochemistry, Microbiology and Immunology [~~BIMI~~ - Bioch Micro Immuno - code and description for student system] BMI

3 Which Department / School is the authority for this new / revised disciplinary area? (NOTE - if this disciplinary area is being offered by multiple departments see question below.)

Bioch Micro Immuno [~~BIMI~~] - currently exists in student system BMI

4 Which **multiple** Departments / Schools are the authority for this new / revised disciplinary area?

4a Of the **multiple** Departments / Schools who are the authority for this new / revised disciplinary area and what allocation percentage is assigned to each? (Note - must be whole numbers and must equal 100.)

4b Of the **multiple** Departments / Schools who is the primary department? The primary department specifies which department / school policies will be followed in academic matters (ex. late adds, re-read policies, or academic misconduct). If no department / school is considered the primary, please indicate that. (In normal circumstances, a department / school with a greater percentage of responsibility - see question above - will be designated the primary department.)

5 Which current program(s) and / or degree(s) is this new / revised disciplinary area attached to?

Master of Science-Thesis [MSC-T-GP], Doctor of Philosophy(Transfer) [PHD-TRANS-GP], Doctor of Philosophy [PHD-GP]

Section 6: New College / School / Center / Department or Renaming of Existing

1 Is this a new college, school, center, or department?	Yes	No X
Is an existing college, school, center, or department being renamed?	Yes	No X
Is an existing college, school, center, or department being deleted?	Yes	No X

If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new (or renamed or deleted) college, school, center, or department?

3 If you have renamed an existing college, school, center, or department, what is the current name?

4 What is the effective term of this new (renamed or deleted) college, school, center, or department?

5 Will any programs be created, changed, or moved to a new authority, removed, relabelled?

6 Will any courses be created, changed, or moved to a new authority, removed, relabelled?

7 Are there any ceremonial consequences for Convocation (ie. New degree hood, adjustment to parchments, etc.)?

Section 7: Course Information

1 Is there a new subject area(s) of course offering proposed for this new degree? If so, what is the subject area(s) and the suggested four (4) character abbreviation(s) to be used in course listings?

No

2 If there is a new subject area(s) of offerings what College / Department is the academic authority for this new subject area?

3 Have the subject area identifier and course number(s) for new and revised courses been cleared by the Registrar?

4 Does the program timetable use standard class time slots, terms, and sessions? Yes ☐ No ☐

If NO, please describe.

5 Does this program, due to pedagogical reasons, require any special space or type or rooms? Yes ☐ No ☐

If YES, please describe.

NOTE: Please remember to submit a new "Course Creation Form" for every new course required for this new program / major. Attached completed "Course Creation Forms" to this document would be helpful.

Section 8: Admissions, Recruitment, and Quota Information - as per current set-up other than admission qualifications

1 Will students apply on-line? If not, how will they apply?

2 What term(s) can students be admitted to?

3 Does this impact enrollment?

4 How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

5 Can classes towards this program be taken at the same time as another program?

6 What is the application deadline?

7 What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)

English proficiency requirement of minimum overall TOEFL score of 90 with a minimum of 20 in each area or a minimum overall IELTS score of 6.5 with a minimum of 6.5 in each area.
Minimum average of 75% for Master of Science and 80% for Doctor of Philosophy.

8 What is the selection criteria? (IE. If only average then 100% weighting; if other factors such as interview, essay, etc. what is the weighting of each of these in the admission decision.)

9 What are the admission categories and admit types? (IE. High school students and transfer students or one group? Special admission? Aboriginal equity program?)

10 What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

11 Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

12 Letter of acceptance - are there any special requirements for communication to newly admitted students?

13 Will the standard application fee apply?

14 Will all applicants be charged the fee or will current, active students be exempt?

15 Are international students admissible to this program?

Section 9: Government Loan Information - as per current set-up

NOTE: Federal / provincial government loan programs require students to be full-time in order to be eligible for funding. The University of Saskatchewan defines full-time as enrollment in a minimum of 9 credit units (operational) in the fall and/or winter term(s) depending on the length of the loan.

1 If this is a change to an existing program, will the program change have any impact on student loan eligibility?

2 If this is a new program, do you intend that students be eligible for student loans?

Section 10: Convocation Information (only for new degrees) - not applicable

1 Are there any 'ceremonial consequences' of this proposal (ie. New degree hood, special convocation, etc.)?

2 If YES, has the Office of the University Secretary been notified?

3 When is the first class expected to graduate?

4 What is the maximum number of students you anticipate/project will graduate per year (please consider the next 5-10 years)?

Section 11: Schedule of Implementation Information

1 What is the start term?

202005 [May 2020] - for new majors
202105 [May 2021] - for admission requirement change

2 Are students required to do anything prior to the above date (in addition to applying for admission)? Yes [ ] No [X]

If YES, what and by what date?

Section 12: Registration Information - as per current set-up

1 What year in program is appropriate for this program (NA or a numeric year)?
(General rule = NA for programs and categories of students not working toward a degree level qualification.)

2 Will students register themselves? Yes [ ] No [ ]
If YES, what priority group should they be in?

Section 13: Academic History Information - as per current set-up

1 Will instructors submit grades through self-serve? Yes [ ] No [ ]
2 Who will approve grades (Department Head, Assistant Dean, etc.)?

Section 14: T2202 Information (tax form) - as per current set-up

1 Should classes count towards T2202s? Yes [ ] No [ ]

Section 15: Awards Information

1 Will terms of reference for existing awards need to be amended? Yes [ ] No [X]
2 If this is a new undergraduate program, will students in this program be eligible for College-specific awards?

Section 16: Government of Saskatchewan Graduate Retention (Tax) Program - as per current set-up

1 Will this program qualify for the Government of Saskatchewan graduate retention (tax) program? Yes [ ] No [ ]
To qualify the program must meet the following requirements:
- be equivalent to at least 6 months of full-time study, and
- result in a certificate, diploma, or undergraduate degree.

Section 17: Program Termination

1 Is this a program termination? Yes [X] No [ ]

If yes, what is the name of the program?

Majors of Biochemistry [BIOC] and Microbiology and Immunology [MIIM] in the Post Graduate Diploma [PGD-GP], Master of Science-Thesis [MSC-T-GP], Doctor of Philosophy(Direct) [PHD-DIRCT-GP], Doctor of Philosophy(Transfer) [PHD-TRANS-GP], Doctor of Philosophy [PHD-GP] programs

2 What is the effective date of this termination?

202005 [May 2020]

3 Will there be any courses closed as a result of this termination? Yes [ ] No [X]

If yes, what courses?

4 Are there currently any students enrolled in the program? Yes [X] No [ ]

If yes, will they be able to complete the program?

Students will be allowed to complete their current program or move to the new program

5 If not, what alternate arrangements are being made for these students?

6 When do you expect the last student to complete this program?

2025 - students have 6 years to complete

7 Is there mobility associated with this program termination? Yes [ ] No [X]

If yes, please select one of the following mobility activity types.

- Dual Degree Program [ ]
- Joint Degree Program [ ]
- Internship Abroad Program [ ]
- Term Abroad Program [ ]
- Taught Abroad Course [ ]
- Student Exchange Program [ ]

Partnership agreements, coordinated by the International Office, are signed for these types of mobility activities. Has the International Office been informed of this program termination? Yes [ ] No [ ]

Section 18: Proposed Tuition and Student Fees Information - as per current set-up

1 How will tuition be assessed?

Standard Undergraduate per credit ☐
Standard Graduate per credit ☐
Standard Graduate per term ☐
Non standard per credit* ☐
Non standard per term* ☐
Other * ☐
Program Based* ☐

* See attached documents for further details

2 If fees are per credit, do they conform to existing categories for per credit tuition? If YES, what category or rate?

3 If program based tuition, how will it be assessed? By credit unit? By term? Elsehow?

4 Does proponent's proposal contain detailed information regarding requested tuition? Yes ☐ No ☐

If NO, please describe.

5 What is IPA's recommendation regarding tuition assessment? When is it expected to receive approval?

6 IPA Additional comments?

7 Will students outside the program be allowed to take the classes?

8 If YES, what should they be assessed? (This is especially important for program based.)

9 Do standard student fee assessment criteria apply (full-time, part-time, on-campus versus off-campus)?

10 Do standard cancellation fee rules apply?

11 Are there any additional fees (e.g. materials, excursion)? If yes, see NOTE below.

12 Are you moving from one tuition code (TC) to another tuition code? Yes ☐ No ☐

If YES, from which tuition code to which tuition code?

13 Are international students admissible to the program? If yes, will they pay the international tuition differential?

NOTE: Please remember to submit a completed "Application for New Fee or Fee Change Form" for every new course with additional fees.

Section 19: TLSE - Information Dissemination (internal for TLSE use only)

1	Has TLSE, Marketing and Student Recruitment, been informed about this new / revised program?	Yes ☐ No ☐
2	Has TLSE, Admissions, been informed about this new / revised program?	Yes ☐ No ☐
3	Has TLSE, Student Finance and Awards, been informed about this new / revised program?	Yes ☐ No ☐
4	Has CGPS been informed about this new / revised program?	Yes ☐ No ☐
5	Has TLSE, Transfer Credit, been informed about any new / revised courses?	Yes ☐ No ☐
6	Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?	Yes ☐ No ☐
7	Has the Library been informed about this new / revised program?	Yes ☐ No ☐
8	Has ISA been informed of the CIP code for new degree / program / major?	Yes ☐ No ☐
9	Has Room Scheduling/Scheduling Hub/Senior Coordinator of Scheduling been informed of unique space requirements for the new courses and/or informed of program, course, college, and department changes?	Yes ☐ No ☐
10	Has the Convocation Coordinator been notified of a new degree?	Yes ☐ No ☐
11	What is the highest level of financial approval required for this submission? Check all that apply.	
	a. None - as it has no financial implications	☐
	OR	
	b. Fee Review Committee	☐
	c. Institutional Planning and Assessment (IPA)	☐
	d. Provost's Committee on Integrated Planning (PCIP)	☐
	e. Board of Governors	☐
	f. Other	☐

SIGNED

Date: December 9, 2019

Registrar (Russell Isinger): Russell Isinger

College / Department Representative(s): Martha Smith

IPA Representative(s):

AGENDA ITEM NO: 10.3

UNIVERSITY COUNCIL

ACADEMIC PROGRAMS COMMITTEE

REPORT FOR INFORMATION

PRESENTED BY: Susan Detmer; chair, academic programs committee

DATE OF MEETING: January 16, 2020

SUBJECT: **Change to the Bachelor of Science in Engineering (B.E.) program in Engineering Physics – credit unit reduction**

COUNCIL ACTION: **For Information Only**

SUMMARY:
At its December 18, 2019 meeting, the academic programs committee approved the following motion:

- *That the Academic Program approve the reduction in credit units for the Bachelor of Science in Engineering (B.E.) and EPIP programs in Engineering Physics, effective May 2020.*

Changes to the total number of credit units required for an approved degree program when the change affects tuition require approval by the Academic Programs Committee.

The College of Engineering is making some changes to its B.E. in Engineering Physics, which include removing one required course (PHYS 371.3), decreasing the number of credits in the Engineering Science and Design elective group by 3 c.u., and adding EP 428.3 as a required course. These changes result in an overall credit-unit reduction of 3 c.u. for the program.

The concepts taught in PHYS 371 will still be covered in another course (EP 370) and PHYS 371.3 will still be available as an optional elective.

The addition of the EP 428.3 ensures students in the Engineering Physics program have a training in computational physics, which is becoming an increasingly important skill for engineers in this field.

The decrease in the number of elective credits maintains the same number of credit units in the fourth year and keeps the total number of credit units in the program in line with the other engineering programs in the college.

ATTACHMENTS:

1. Reduction of number of credit units in the Engineering Physics program

UNIVERSITY OF SASKATCHEWAN	**Proposal for Academic or Curricular Change**

PROPOSAL IDENTIFICATION

Title of proposal: **Reduction of number of credit units in the Engineering Physics program**

Degree(s): Bachelor of Science in Engineering

Field(s) of Specialization: Engineering Physics

Level(s) of Concentration: Undergraduate Program

Degree College: College of Engineering

Contact person(s) (name, telephone, fax, e-mail):
Dr. Doug Degenstein
Engineering Physics Undergraduate Chair
306 966 6447
doug.degenstein@usask.ca

Dr. Sasha Koustov
Department Head of Physics & Engineering Physics
306 966 6426
sasha.koustov@usask.ca

Proposed date of implementation: May 2020

Proposal Summary

The Bachelor of Science in Engineering Physics degree program is one of eight undergraduate programs offered by the College of Engineering. The Engineering Physics (EP) curriculum was first introduced in 1937, and accredited since 1965. Currently it is one of the 6 Engineering Physics programs in Canada, with one of the longest standing traditions. It is a four-year program, comprising a total of 147 credit units.

The current proposal seeks to alter the requirements for the Bachelor of Science in Engineering Physics degree program. The change would include removing one core course, and introducing one course currently offered as the elective as the requirement, while decreasing the number of credits in one group of electives:

a) To remove the PHYS.371 3 Statistical and Thermal Physics as a required course in the EP program,
b) To make EP 428.3 Computational Engineering Physics a required course of the EP program,
c) To decrease the number of credits in Engineering Science or Design electives group from 6 to 3.

Given the Engineering Physics is an existing program, the College is not requesting that a program be added or removed from our suite of offerings. Instead, the College is seeking approval from the Academic Programs Committee of Council (and all relevant governing bodies) to reduce the total number of credit units in the program. If approved, the change will result in the reduction of 3 credit units in the program, to the new total of 144 credit units.

Academic justification

Removing PHYS 371 as the required course would address an ongoing issue with the difficulty and large number of required credits in the third year of the EP program (currently 40 credit units). No courses require PHYS 371 as a prerequisite.

The kinetic theory that is taught as part of EP 370 Heat Kinetic Theory and Thermodynamics will still provide students with a basic exposure to the concepts of statistical thermodynamics. In addition, students can still choose to take PHYS 371 as one of the two Senior Science Electives.

The EP program is currently very heavy on Natural Science content (accreditation standards require 195 accreditation units and the program has 378), so the removal would have no impact on the program accreditation.

Introducing EP 428 as a required course would be beneficial for students, as Computational physics is becoming an increasingly important skill for EP engineers. The Department was struggling to offer the course consistently as an elective due to teaching resource demands (it

was offered every other year); designating EP 428 as a required course will ensure it is offered every year.

The decrease in the number of credits in Engineering Science or Design electives group from 6 to 3 is requested to make room for the new required course, while maintaining the same number of credit units in the fourth year of the program.

Comparing the number of credits units in Engineering Physics with other engineering programs in the College, it becomes apparent that EP has the highest number of credit units in third year (in fact, any year), and one of the two highest totals.

USASK Engineering Programs	**Credit units in third year**	**Total number of credits units**
Chemical	32	137
Civil	36	144
Computer	33	134
Electrical	33	134
Engineering Physics	**40**	**147**
Environmental	36	144
Geological	39	147
Mechanical	39	145

The program "is recommended for students interested in physics, specifically optics, mechanics, electronics, instrumentation, and modelling". Other Engineering Physics programs are offered at the University of Alberta, University of British Columbia, Carleton, McMaster and Queen's. The competition for the students interested in this particular "bridge between pure and applied science", although not numerous, is very strong, which is why it is important to remain relevant and continually improve.

Consultation

The Department of Physics and Enquiring Physics discussed and endorsed curricular changes on the meeting held on October 24, 2019. One additional change was approved at that meeting: to remove the lab component of EP 370.3 Heat, Kinetic Theory, and Thermodynamics. As that change does not require change to credit units and is considered course change in the purview of the college, it has been submitted for approval through the Arts & Science course challenge process, and thus not included in this proposal.

The Undergraduate Academic Programs Committee (UAPC) of the College of Engineering reviewed and endorsed this proposal on November 5, 2019. The UAPC is "responsible for approving and submitting to University Council's Academic Programs Committee the college's recommendations on: special topic courses, course and program catalogue, new courses, course deletions, and minor program revisions." The Chair of the UAPC endorsed the proposal.

Given that the proposal for curricular change does not affect any other academic units on campus, no further consultation was completed at the university-level in the development of this proposal.

This proposal is now being submitted to the Academic Programs Committee of Council and all other relevant governing bodies for subsequent review and approval.

Budget

The proposed curricular changes will have a modest impact on the department resources. Tuition revenues generated by the Bachelor of Science in Engineering Physics program are expected to decrease.

PHYS 371 is a part of the Bachelor of Science in Engineering Physics program but offered through the College of Arts and Science, and listed under the Category 14 tuition rate.
Category 14 Undergraduate tuition rates (September 2019 - August 2020) are $232 per credit unit for domestic students, and $633.36 per credit unit for international students. As PHYS 371 is a 3 credit unit course, a cost for domestic student is listed as $696, and $1900.08 for an international one.

By removing this course from the list of required courses in the program, the total number of credit units in the Bachelor of Science in Engineering Physics will decrease by 3 credits units. The course will, however, continue to be offered, and will be on the list of electives for the students in the program, so the loss of tuition will not necessarily apply to all student in the program.

In the past 5 years, Engineering Physics had 61 student on average, and had an average of 19 students in the third year of the program, with only a minimal number of (or no) international students.

Academic Year Headcount

Major: Engineering Physics
Year In Program: 3rd Year

		Reporting Year				
Reporting Level	Citizenship Group	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
Undergraduate	Canada	14	15	19	19	24
	International	1			2	1
	Undergraduate Total	**15**	**15**	**19**	**21**	**25**
Grand Total		**15**	**15**	**19**	**21**	**25**

Source: University of Saskatchewan Data Warehouse. Data as of Wednesday, December 11, 2019

Assuming the number of students admitted to the program remains constant into the future, the worst case scenario would be a loss of tuition for all students in the EP program, which would be $13000 on average.

College Statement

This proposal for curricular change has been endorsed by all relevant bodies in the College of Engineering. The consultation process has been briefly described. Please see appendices for more details and, in particular, the Letter of Support from the Associate Dean Academic.

Appendices and Consultation Forms

The following documents have been appended to this proposal:

- Appendix 1: Department Request for approval by the UAPC
- Appendix 2: Excerpts from the University Catalogue 2019/20 entry for Engineering Physics (with proposed changes marked in red)
- Appendix 3: Associate Dean Academic Letter of Support
- Appendix 4: Consultation with the Registrar Form.

Appendix 1: Department Request for approval by the UAPC

---Original Message---
From: Bourassa, Adam <adam.bourassa@usask.ca>
Sent: Friday, October 25, 2019 4:29 PM
To: Farthing, Sarah <sarah.farthing@usask.ca>
Subject: Re: UAPC November meeting

Hi Sarah,

Great, I've attached a document with the three motions to bring to the committee from EP.

Let me know if you have any questions.

Thanks,
Adam

Adam E. Bourassa, Ph.D., P.Eng.
Professor, Physics and Engineering Physics
University of Saskatchewan
Phone: 1-306-966-1418
Email: adam.bourassa@usask.ca

Motions to the UAPC from Engineering Physics – November 2019
Approved by the Department of Physics and Engineering Physics on Oct 24, 2019

Motion: To remove the lab component of "EP 370.3 Heat, Kinetic Theory, and Thermodynamics".
Rationale:

- To address an ongoing issue with the difficulty and large number of required credits in the third year of the EP program affecting student retention
- The first term was very heavy on practical labs (EE 321, EP 352, and EP 370). Removing these labs will relieve a considerable amount of both scheduled time in the lab and homework time for the students.
- The labs were not tightly linked to the lecture material so the impact on the learning outcomes will not be greatly affected.
- Effect on program accreditation:
    - Decease of 9.2 AUs of Engineering Science
    - 705.8 of the required 225 Engineering Science AUs remain
    - 266.8 of the required 225 Specific ES+ED AUs remain

Motion: To remove "PHYS 371.3 Statistical and Thermal Physics" as a required course in the EP program.
Rationale:

- To address an ongoing issue with the difficulty and large number of required credits in the third year of the EP program
- The EP program is currently very heavy on Natural Science, and no courses require PHYS 371 as a prerequisite.
- The kinetic theory that is taught as part of EP 370 provides basic exposure to the concepts of statistical thermodynamics.

- Students can still choose to take PHYS 371 as one of the two "Senior Science Electives"
- Effect on program accreditation:
    - Decrease of 36.6 AUs of Natural Science
    - 378.5 of the required 195 Natural Science AUs remain

Motion: To make EP 428 a required course of the EP program, and decrease the number of credits in "Engineering Science or Design" electives from 6 to 3.

Rationale:

- Computational physics is becoming an increasingly important skill for EP engineers and all students should take it.
- The department was struggling to consistently offer the course as an elective due to teaching resource demands and this will ensure it is offered every year.
- Effect on program accreditation: none

Appendix 2: Excerpts from the University Catalogue for 2019/20 for Engineering Physics (with proposed changes marked in red)

Engineering Physics
Bachelor of Science in Engineering (B.E.) - Engineering Physics

Year 1 (34 credit units)
All Engineering programs have a **common** first year.

Year 2 (37 credit units)

Year 3 (~~40~~ 37 credit units)

Fall Term

- EE 321.3
- EP 353.2
- EP 370.3
- PHYS 356.3
- PHYS 383.3
- MATH 331.3
- 3 credit units of Engineering Physics Requirements

Winter Term

- EP 317.3
- EP 320.3
- EP 325.3
- EP 354.2
- PHYS 323.3
- ~~PHYS 371.3~~
- 3 credit units of Engineering Physics Requirements

Year 4 (36 credit units)

Fall Term

- EP 413.3
- EP 417.3
- EP 421.3
- GE 348.3
- PHYS 456.3
- 3 credit units of Engineering Physics Requirements

Winter Term

- GE 449.3
- EP 428.3
- ~~9~~ 6 credit units of Engineering Physics Requirements

Fall Term and Winter Term

- EP 495.6
- PHYS 490.0

Engineering Physics Requirements

Engineering Science or Engineering Design List

~~6~~ 3 credit units from the following list~~, at least 3 credit units must be 400 level~~.

- CE 317.3
- CME 331.3
- CME 341.3
- CME 342.3
- EE 241.3
- EE 322.3
- EE 341.3
- EE 342.3
- EE 343.3
- EE 442.3
- EE 471.3
- EE 472.3
- ENVE 201.3
- ~~EP 428.3~~
- EP 440.3
- GE 213.3
- GEOE 377.3
- or any other approved elective

Senior Science Requirement

6 credit units from the Engineering Science or Engineering Design list, or CMPT, CHEM, GEOL courses at 200 level or higher, or PHYS, ASTR, MATH, STAT courses at 300 level or higher, or any other approved elective. At least 3 credit units must be at 400 level.

Complementary Studies Elective (3 credit units)

Senior Humanities or Social Science Elective (3 credit units)

Appendix 3: Associate Dean Academic Letter of Support

UNIVERSITY OF SASKATCHEWAN
College of Engineering
ENGINEERING.USASK.CA

Office of the Dean
3B48 Engineering Building, 57 Campus Drive
Saskatoon SK S7N 5A9 Canada
Telephone: **306-966-5273**
Website: **engineering.usask.ca**

Ms. Amanda Storey
Academic Programs and Student Appeals Coordinator
Office of the University Secretary

December 12, 2019

Re: Proposal for Curricular Change- Bachelor of Science in Engineering Physics

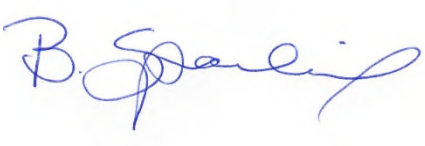
Dear Ms. Storey,

The Undergraduate Academic Programs Committee within the College of Engineering convened on November 5, 2019. During this meeting, the Committee reviewed a proposal for curricular change that was submitted by the Department of Physics and Engineering Physics.

As a Chair of the Undergraduate Academic Programs Committee, I am pleased to inform you that the Committee has approved the proposal and recommended that the proposal be sent for further review and approval. I wish to certify that the College is in agreement with and supports this proposal.

Please do not hesitate to contact me directly if you have any questions or concerns.

Sincerely,



Bruce Sparling Ph.D, P.Eng., FCSCE
Associate Dean Academic
College of Engineering
Phone: 306-966-4190
Email: engr.academicdean@usask.ca

Appendix 4: Consultation with the Registrar Form

Consultation with the Registrar Form

This form is to be completed by the Registrar (or his/her designate) during an in-person consultation with the faculty member responsible for the proposal. Please consider the questions on this form prior to the meeting.

Section 1: New Degree / Diploma / Certificate Information or Renaming of Existing

1 Is this a new degree, diploma, or certificate? Yes [ ] No [X]
Is an existing degree, diploma, or certificate being renamed? Yes [ ] No [X]
If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new degree, diploma, or certificate?

3 What is the credential of this new degree, diploma, or certificate? [Example - D.M.D. = Doctor of Dental Medicine]

4 If you have renamed an existing degree, diploma, or certificate, what is the current name?

5 Does this new or renamed degree / diploma / certificate require completion of degree level courses or non-degree level courses, thus implying the attainment of either a degree level or non-degree level standard of achievement?

6 If this is a new degree level certificate, can a student take it at the same time as pursuing another degree level program? Yes [ ] No [ ]

7 If YES, a student attribute will be created and used to track students who are in this certificate alongside another program. The attribute code will be:

8 Which College is responsible for the awarding of this degree, diploma, or certificate?

9 Is there more than one program to fulfill the requirements for this degree, diploma, or certificate? If yes, please list these programs.

10 Are there any new majors, minors, or concentrations associated with this new degree / diploma / certificate? Please list the name(s) and whether it is a major, minor, or concentration, along with the sponsoring department.
One major is required on all programs [4 characters for code and 30 characters for description]

11 If this is a new graduate degree, is it thesis-based, course-based, or project-based?

Section 2: New / Revised Program for Existing or New Degree / Diploma / Certificate Information

1 Is this a new program? Yes [ ] No [X]
Is an existing program being revised? Yes [ ] No [X]
If you've answered NO to each of the previous two questions, please continue on to the next section.

2 If YES, what degree, diploma, or certificate does this new/revised program meet requirements for?

3 What is the name of this new/revised program?

4 What other program(s) currently exist that will also meet the requirements for this same degree(s)?

5 What College/Department is the academic authority for this program?

6 Is this a replacement for a current program? Yes [ ] No [ ]

7 If YES, will students in the current program complete that program or be grandfathered?

8 If this is a new graduate program, is it thesis-based, course-based, or project-based?

Section 3: Mobility

Mobility is the ability to move freely from one jurisdiction to another and to gain entry into an academic institution or to participate in a learning experience without undue obstacles or hindrances.

1 Does the proposed degree, program, major, minor, concentration, or course involve mobility? Yes [ ] No [X]

If yes, choose one of the following?

- Domestic Mobility (both jurisdictions are within Canada) [ ]
- International Mobility (one jurisdiction is outside of Canada) [ ]

2 Please indicate the mobility type (refer to Nomenclature for definitions).

- Joint Program [ ]
- Joint Degree [ ]
- Dual Degree [ ]
- Professional Internship Program [ ]
- Faculty-Led Course Abroad [ ]
- Term Abroad Program [ ]

3 The U of S enters into partnerships or agreements with external partners for the above mobility types in order to allow students collaborative opportunities for research, studies, or activities. Has an agreement been signed? Yes [ ] No [ ]

4 Please state the full name of the agreement that the U of S is entering into.

5 What is the name of the external partner?

6 What is the jurisdiction for the external partner?

Section 4: New / Revised Major, Minor, or Concentration for Existing Degree Information (Undergraduate)

1 Is this a new or revised major, minor, or concentration attached to an existing degree program? If you've answered NO, please continue on to the next section.

Yes [X] No [ ] Revised [ ]

2 If YES, please specify whether it is a major, minor, or concentration. If it is more than one, please fill out a separate form for each.

Major of EP [Engineering Physics] - reduction of 3 credit units from current 147 to 144

3 What is the name of this new / revised major, minor, or concentration?

N/A

4 Which department is the authority for this major, minor, or concentration? If this is a cross-College relationship, please state the Jurisdictional College and the Adopting College.

PHYS [Physics and Engin Physics]

5 Which current program(s), degree(s), and/or program type(s) is this new / revised major, minor, or concentration attached to?

BE [Bachelor of Sc Engineering] and EPIP [EN Professional Intern Prog]

Section 5: New / Revised Disciplinary Area for Existing Degree Information (Graduate)

1 Is this a new or revised disciplinary area attached to an existing graduate degree program? If you've answered NO, please continue on to the next section.

Yes [ ] No [X] Revised [ ]

2 If YES, what is the name of this new / revised disciplinary area?

3 Which Department / School is the authority for this new / revised disciplinary area? (NOTE - if this disciplinary area is being offered by multiple departments see question below.)

4 Which **multiple** Departments / Schools are the authority for this new / revised disciplinary area?

4a Of the **multiple** Departments / Schools who are the authority for this new / revised disciplinary area and what allocation percentage is assigned to each? (Note - must be whole numbers and must equal 100.)

4b Of the **multiple** Departments / Schools who is the primary department? The primary department specifies which department / school policies will be followed in academic matters (ex. late adds, re-read policies, or academic misconduct). If no department / school is considered the primary, please indicate that. (In normal circumstances, a department / school with a greater percentage of responsibility - see question above - will be designated the primary department.)

5 Which current program(s) and / or degree(s) is this new / revised disciplinary area attached to?

Section 6: New College / School / Center / Department or Renaming of Existing

1 Is this a new college, school, center, or department? Yes [ ] No [X]
Is an existing college, school, center, or department being renamed? Yes [ ] No [X]
Is an existing college, school, center, or department being deleted? Yes [ ] No [X]
If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new (or renamed or deleted) college, school, center, or department?

3 If you have renamed an existing college, school, center, or department, what is the current name?

4 What is the effective term of this new (renamed or deleted) college, school, center, or department?

5 Will any programs be created, changed, or moved to a new authority, removed, relabelled?

6 Will any courses be created, changed, or moved to a new authority, removed, relabelled?

7 Are there any ceremonial consequences for Convocation (ie. New degree hood, adjustment to parchments, etc.)?

Section 7: Course Information - no change

1 Is there a new subject area(s) of course offering proposed for this new degree? If so, what is the subject area(s) and the suggested four (4) character abbreviation(s) to be used in course listings?

2 If there is a new subject area(s) of offerings what College / Department is the academic authority for this new subject area?

3 Have the subject area identifier and course number(s) for new and revised courses been cleared by the Registrar?

4 Does the program timetable use standard class time slots, terms, and sessions? Yes ☐ No ☐

If NO, please describe.

5 Does this program, due to pedagogical reasons, require any special space or type or rooms? Yes ☐ No ☐

If YES, please describe.

NOTE: Please remember to submit a new "Course Creation Form" for every new course required for this new program / major. Attached completed "Course Creation Forms" to this document would be helpful.

Section 8: Admissions, Recruitment, and Quota Information - no change

1 Will students apply on-line? If not, how will they apply?

2 What term(s) can students be admitted to?

3 Does this impact enrollment?

4 How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

5 Can classes towards this program be taken at the same time as another program?

6 What is the application deadline?

7 What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)

8 What is the selection criteria? (IE. If only average then 100% weighting; if other factors such as interview, essay, etc. what is the weighting of each of these in the admission decision.)

9 What are the admission categories and admit types? (IE. High school students and transfer students or one group? Special admission? Aboriginal equity program?)

10 What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

11 Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

12 Letter of acceptance - are there any special requirements for communication to newly admitted students?

13 Will the standard application fee apply?

14 Will all applicants be charged the fee or will current, active students be exempt?

15 Are international students admissible to this program?

Section 9: Government Loan Information - no change

NOTE: Federal / provincial government loan programs require students to be full-time in order to be eligible for funding. The University of Saskatchewan defines full-time as enrollment in a minimum of 9 credit units (operational) in the fall and/or winter term(s) depending on the length of the loan.

1 If this is a change to an existing program, will the program change have any impact on student loan eligibility?

2 If this is a new program, do you intend that students be eligible for student loans?

Section 10: Convocation Information (only for new degrees)

1 Are there any 'ceremonial consequences' of this proposal (ie. New degree hood, special convocation, etc.)?

2 If YES, has the Office of the University Secretary been notified?

3 When is the first class expected to graduate?

4 What is the maximum number of students you anticipate/project will graduate per year (please consider the next 5-10 years)?

Section 11: Schedule of Implementation Information

1 What is the start term?

202005 [May 2020]

2 Are students required to do anything prior to the above date (in addition to applying for admission)? Yes [ ] No [X]

If YES, what and by what date?

Section 12: Registration Information - no change

1 What year in program is appropriate for this program (NA or a numeric year)?
(General rule = NA for programs and categories of students not working toward a degree level qualification.)

2 Will students register themselves? Yes ☐ No ☐
If YES, what priority group should they be in?

Section 13: Academic History Information - no change

1 Will instructors submit grades through self-serve? Yes ☐ No ☐
2 Who will approve grades (Department Head, Assistant Dean, etc.)?

Section 14: T2202 Information (tax form) - no change

1 Should classes count towards T2202s? Yes ☐ No ☐

Section 15: Awards Information - no change

1 Will terms of reference for existing awards need to be amended? Yes ☐ No ☐
2 If this is a new undergraduate program, will students in this program be eligible for College-specific awards?

Section 16: Government of Saskatchewan Graduate Retention (Tax) Program - no change

1 Will this program qualify for the Government of Saskatchewan graduate retention (tax) program? Yes ☐ No ☐
To qualify the program must meet the following requirements:
- be equivalent to at least 6 months of full-time study, and
- result in a certificate, diploma, or undergraduate degree.

Section 17: Program Termination

1 Is this a program termination? Yes [ ] No [X]

If yes, what is the name of the program?

2 What is the effective date of this termination?

3 Will there be any courses closed as a result of this termination? Yes [ ] No [ ]

If yes, what courses?

4 Are there currently any students enrolled in the program? Yes [ ] No [ ]

If yes, will they be able to complete the program?

5 If not, what alternate arrangements are being made for these students?

6 When do you expect the last student to complete this program?

7 Is there mobility associated with this program termination? Yes [ ] No [ ]

If yes, please select one of the following mobility activity types.

- [ ] Dual Degree Program
- [ ] Joint Degree Program
- [ ] Internship Abroad Program
- [ ] Term Abroad Program
- [ ] Taught Abroad Course
- [ ] Student Exchange Program

Partnership agreements, coordinated by the International Office, are signed for these types of mobility activities. Has the International Office been informed of this program termination? Yes [ ] No [ ]

Section 18: Proposed Tuition and Student Fees Information - no change

1 How will tuition be assessed?

Standard Undergraduate per credit ☐
Standard Graduate per credit ☐
Standard Graduate per term ☐
Non standard per credit* ☐
Non standard per term* ☐
Other * ☐
Program Based* ☐
* See attached documents for further details

2 If fees are per credit, do they conform to existing categories for per credit tuition? If YES, what category or rate?

3 If program based tuition, how will it be assessed? By credit unit? By term? Elsehow?

4 Does proponent's proposal contain detailed information regarding requested tuition? Yes ☐ No ☐
If NO, please describe.

5 What is IPA's recommendation regarding tuition assessment? When is it expected to receive approval?

6 IPA Additional comments?

7 Will students outside the program be allowed to take the classes?

8 If YES, what should they be assessed? (This is especially important for program based.)

9 Do standard student fee assessment criteria apply (full-time, part-time, on-campus versus off-campus)?

10 Do standard cancellation fee rules apply?

11 Are there any additional fees (e.g. materials, excursion)? If yes, see NOTE below.

12 Are you moving from one tuition code (TC) to another tuition code? Yes ☐ No ☐
If YES, from which tuition code to which tuition code?

13 Are international students admissible to the program? If yes, will they pay the international tuition differential?

NOTE: Please remember to submit a completed "Application for New Fee or Fee Change Form" for every new course with additional fees.

Section 19: TLSE - Information Dissemination (internal for TLSE use only)

1	Has TLSE, Marketing and Student Recruitment, been informed about this new / revised program?	Yes ☐	No ☐
2	Has TLSE, Admissions, been informed about this new / revised program?	Yes ☐	No ☐
3	Has TLSE, Student Finance and Awards, been informed about this new / revised program?	Yes ☐	No ☐
4	Has CGPS been informed about this new / revised program?	Yes ☐	No ☐
5	Has TLSE, Transfer Credit, been informed about any new / revised courses?	Yes ☐	No ☐
6	Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?	Yes ☐	No ☐
7	Has the Library been informed about this new / revised program?	Yes ☐	No ☐
8	Has ISA been informed of the CIP code for new degree / program / major?	Yes ☐	No ☐
9	Has Room Scheduling/Scheduling Hub/Senior Coordinator of Scheduling been informed of unique space requirements for the new courses and/or informed of program, course, college, and department changes?	Yes ☐	No ☐
10	Has the Convocation Coordinator been notified of a new degree?	Yes ☐	No ☐

11 What is the highest level of financial approval required for this submission? Check all that apply.

a. None - as it has no financial implications ☐

OR

b. Fee Review Committee ☐
c. Institutional Planning and Assessment (IPA) ☐
d. Provost's Committee on Integrated Planning (PCIP) ☐
e. Board of Governors ☐
f. Other ☐

SIGNED

Date: December 11, 2019

Registrar (Russell Isinger): Russell Isinger

College / Department Representative(s): B Sparling

IPA Representative(s):

AGENDA ITEM NO: 11.1

UNIVERSITY COUNCIL

NOMINATIONS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY: Eric Lamb, vice chair, Nominations Committee of Council

DATE OF MEETING: January 16, 2020

SUBJECT: Nomination to the scholarships and awards committee

DECISION REQUESTED:

It is recommended that Council approve the nomination of Hyunjung Shin, Department of Curriculum Studies to serve as member of the scholarships and awards committee of Council effective immediately to June 2022.

DISCUSSION SUMMARY:
To replace Matthew Neufeld, Department of History, who resigned from the committee.

ATTACHMENT(S):

1. Excerpt from Council Bylaws - scholarships and awards committee terms of reference

VII. SCHOLARSHIPS AND AWARDS COMMITTEE

Membership

Nine members of the General Academic Assembly, at least three of whom will be elected members of Council, normally one of whom will be chair The Vice-president Academic of the USSU
The Vice-president Finance of the GSA
An Aboriginal representative from the Aboriginal Students' Centre or a College Undergraduate Affairs Office

Ex Officio
The Provost & Vice-president Academic or designate
The Dean of Graduate Studies and Research or designate
The Vice-provost, Teaching and Learning or designate
The Vice-president University Advancement or designate (non-voting member)
The President (non-voting member)
The Chair of Council (non-voting member)

Resource Personnel (non voting members)
The Director of Graduate Awards and Scholarships
The Director of Finance and Trusts, University Advancement
The University Registrar and Director of Student Services
The Assistant Registrar and Manager, Awards and Financial Aid (Secretary)

Administrative Support
Office of Awards and Financial Aid, Student and Enrolment Services Division

The Scholarships and Awards Committee is responsible for:

1) Recommending to Council on matters relating to the awards, scholarships and bursaries under the control of the University.

2) Recommending to Council on the establishment of awards, scholarships and bursaries.

3) Granting awards, scholarships, and bursaries which are open to students of more than one college or school.

4) Recommending to Council rules and procedures to deal with appeals by students with respect to awards, scholarships and bursaries.

5) Designating individuals to act as representatives of the committee on any other bodies, when requested, where such representation is deemed by the committee to be beneficial.

AGENDA ITEM NO: 11.2

UNIVERSITY COUNCIL

NOMINATIONS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY: Eric Lamb, vice-chair, nominations committee of Council

DATE OF MEETING: January 16, 2020

SUBJECT: Nominations to search committees

DECISION REQUESTED:

It is recommended that Council approve the nomination of the following individuals to serve as members of the deans' search committees below effective immediately:

- *Dr. Terry Fonstad, associate dean research and partnerships in the College of Engineering will serve on the Dean's search committee for Nursing;*
- *Dr. Angela Bedard Haughn, associate dean research and graduate studies in the College of Agriculture & Bioresources will serve on the executive director's search committee for the School of Environment and Sustainability.*

DISCUSSION SUMMARY:

Per the university's search and review procedures, a member of the General Academic Assembly who is also a senior administrator is required on deans' search and review committees. The work of the committees will commence in late January 2020.

ATTACHMENT(S):

1. Search and Review Procedures

REPORT OF THE JOINT COMMITTEE ON THE REVIEW OF THE SEARCH AND REVIEW PROCEDURES FOR SENIOR ADMINISTRATORS

Contents

EXECUTIVE SUMMARY

The appointment of outstanding senior administrators is central to the achievement of the University's vision. The University's search and review procedures are intended to support that goal. This report proposes an extensive reworking of the existing procedures for search and review, following consideration of procedures followed at other universities, input from across campus and extensive discussions by the committee.

Specific principles are enunciated to guide the search and review processes. The principles underlying searches discussed are: purpose; transparency; accountability; confidentiality; representation; consultation; timeliness; respect; equity; conflict of interest, and finite role of the committee. Principles underlying reviews are identical with the addition of the principle on disclosure. Criteria to determine if a position should fall under the procedures are: centrality of the position to the academic mission of the University; the academic decision making authority vested in the position; the level of academic experience required by the position; and the level of technical expertise required by the position.

The report contains 23 recommendations:

General:

1. That the process and stage of the search or review be readily available and communicated to the University community and relevant external constituencies (page 14, 29, 31);

2. That the Board of Governors assume greater responsibility and oversight for the timeliness and progress of searches and reviews, and that at regular intervals senior administration provide to the Board a schedule of current and pending searches and reviews and progress towards completion (page 17);

3. That the University discuss with the Health Region the composition of the search committee for the Associate Vice-President Research (Health) and Vice-President Research and Innovation (Saskatoon Health Region) so that it closely parallels that of the Associate Vice-President Research while acknowledging that additional members will be necessary to represent the interests of the Health Region. Given that this is a joint appointment, the process leading to appointment and consideration for re-appointment may differ, but the Joint Committee recommends that the principles outlined in the "General Procedures for Search and Review" be respected (page 11);

4. That the search and end-of-term review be based upon an appropriate position profile (page 35, 37);

5. That both the professional associations related to the two professional academic programs in the College of Pharmacy and Nutrition be represented on the search/review committee for the Dean, Pharmacy and Nutrition (page 13);

6. That under unique circumstances, more than one professional association may be represented as determined by the Board following a formal request from the College Faculty Council (page 13);

7. That a representative from Huskie Athletics and a representative from Community Programs be added to the search/review committee for the Dean, Kinesiology (page 13, 42);

8. That the Vice-President Research or designate be added to the search committees for all Deans and to the review committee for the Dean of Dentistry (page 13, 41);

9. That a member of Senate be added to the search/review committee for the Vice-President Research (page 13);

10. That the undergraduate student representative selected by the USSU be removed from the search/review committees for the Dean, College of Graduate Studies and Research, and that one of the four faculty of the College selected by members of the College be replaced with a member of the General Academic Assembly, selected by Council who holds a senior administrative position in the University (page 13);

11. That an additional librarian, selected by the librarians be added to the search/review committees for the Dean, University Library, and that the Chair of the Academic Support Committee of Council be replaced with a member of the General Academic Assembly (page 13);

12. That subject to the approved principles and procedures for searches and reviews, the search and review committees will determine their own procedures (page 35, 37);

13. That the Provost's Office continue to gather feedback on best practices for searches and reviews. As part of that endeavor, conducting a brief survey of search and review committees immediately following the conclusion of their work is suggested as a means to gain insight into ways to continue to improve the search and review process (page 17);

14. That the positions of the Executive Directors and Associate Directors of the Interdisciplinary Schools (School of Public Health; Environment and Sustainability; Johnson-Shoyama Graduate School of Public Policy); Vice-Deans (Humanities and Fine Arts; Social Sciences, Science); the Vice-Provost Teaching and Learning; and the Associate Vice-President Research be subject to the procedures, in addition to the positions already named in the Letter of Understanding (page 11, Appendices A & B) [note that the Executive Director and the Associate Director of the Johnson-Shoyama Graduate School of Public Policy are joint appointments with the University of Regina. Provision for University of Regina representation will be necessary. This may involve either modest expansion of the search/review committee or sharing of positions between the universities or both];

15. That the positions of Associate Vice-President Human Resources; Chief Information Officer and Associate Vice-President Information and Communications Technology; and Associate Vice-President Student and Enrolment Services no longer be subject to the procedures (page 11, Appendices A & B);

Searches

16. That searches for senior administrators commence in a timely manner, far enough in advance that an appointment can be made without the necessity for an intervening acting appointment, with the recognition that there will be occasions when an acting appointment is unavoidable or even helpful, given the unique circumstances related to the appointment (page 17, 36).

17. That when a short list of candidates has been established, the search committee determines whether the search will be confidential or open. The Joint Committee recognizes that the current expectation is for open decanal searches. For all searches, if there is evidence presented to the search committee that the search will be disadvantaged by requiring public presentations of the short-listed candidates the committee, at its discretion, may continue the search process in confidence. In the absence of such evidence, the committee is encouraged to make every effort to involve faculty and staff through such means as forums or seminar presentations (page 19, 29);

18. That the chair and the majority of the committee strive to come to agreement on the preferred candidate. If there are differing views on the preferred candidate, it is critical that there be agreement on acceptable candidates. If agreement is not possible, the search may be declared failed by the President or the Board. If the President declares a search failed, the search committee may be reconstituted and may or may not consist of new membership, as determined by the President. If the Board declares a search failed, the Board will decide how to proceed. (page 16, 36) ;

19. That if the President provides a recommendation from the short-listed candidates to the Board different from that of the search committee, he or she provide a rationale to the Board for the alternative recommendation, and that the search committee also be provided the rationale for the alternative recommendation for information (page 16, 34);

Reviews

20. That the chair meet with the incumbent prior to and subsequent to the review to provide information and feedback about the process and outcome including the membership of the review committee once constituted, the timeline for the review, and expectations of the review process (page 37);

21. That assessment of the likelihood of the incumbent continuing to perform the responsibilities of his or her office at a high level should be based on the revised position profile if that profile is different from what was in effect during the incumbent's term (page 35, 37);

22. That the results of the University's 360-degree review process in their original form not be admitted to the review committee. Other formal periodic evaluations should be considered notwithstanding the fact that they may include some formative elements (page 21).

23. That the chair of the review committee ensures that submissions forwarded to the review committee and incumbent are respectful and professional (page 22, 38);

REPORT OF THE JOINT COMMITTEE ON THE REVIEW OF THE SEARCH AND REVIEW PROCEDURES FOR SENIOR ADMINISTRATORS

BACKGROUND

The University's search and review procedures were last revised and approved by the Board of Governors on December 17, 2004. The *Letter of Understanding on the Appointment and Reappointment of Senior Administrators (Appendix C)* states that from time to time, a Joint Committee of the Board of Governors and Council will be established to review the search procedures in respect of the appointment and reappointment of senior administrators and report their findings and any proposed amendments to the Board of Governors. Accordingly, a committee was constituted as shown on page 26.

The Joint Committee on the Review of the Search and Review Procedures for Senior Administrators (the Joint Committee) first met in April 2009, with the first task as outlined in the Letter of Understanding to consider and put forward a list of names for an independent chair to be appointed by the Board of Governors. On May 8, 2009, Professor John Rigby was appointed as Chair, and the Joint Committee subsequently held its first meeting as a full complement on September 18, 2009. Over the course of the year and following, the Joint Committee met on 16 occasions.

CONSULTATION

The Joint Committee reviewed a summary of the search and review practices for senior appointments at other universities to gain a better understanding of the post-secondary landscape in relation to practices elsewhere. The following university websites were consulted: Carleton University; Concordia University; Memorial University; Northern British Columbia University;

University of Calgary; University of Alberta; University of Manitoba; University of Toronto; University of Victoria; Waterloo University; York University. In addition, interviews with the search consultants from two search firms employed by the University—Janet Wright and Associates, Inc. and the Geldart Group—were held to learn of current trends in searches for senior administrators and to invite comment on the University's practices.

The Joint Committee met with the President, the Provost and Vice-President Academic, and former Provosts to engage in a discussion of their views on the University's practices for the search and review of senior administrators and to hear first-hand the experience of these individuals as chairs or former chairs of search and review committees. Subsequently, a meeting was held with the Provost and Vice-President Academic to discuss issues related to the review process for senior administrators, including the timing and duration of the review process; the relationship of the University's 360-degree review process to the end-of-term review process outlined in the search and review procedures; and the nature of the feedback obtained during the review process on the incumbent's performance and the manner in which it is provided to incumbents. The Joint Committee also engaged in discussion with several female senior women administrators on challenges and barriers, specifically from the perspective of gender, which might affect the ability of the University to recruit and retain female senior administrators.

Broad consultation on the search and review procedures was initiated by the Joint Committee through a survey questionnaire sent to those who have served on search and review committees over the previous three years (see "Survey" below). The survey was also sent to Deans and senior administrators to learn of their experience of being recruited and reviewed under the existing procedures.

In addition, members of University Council and the University community at large were invited to submit their views on the existing procedures. A report was submitted to Senate on the process of the review and Senate's role in ensuring appropriate representation and service on

search and review committees. The Joint Committee Chair was also interviewed by *On Campus News* regarding the mandate of the Joint Committee and impetus for review of the search and university procedures.

Survey

To ensure broad feedback on the search and procedures from the university community and stakeholders, a survey questionnaire was submitted to those individuals who had participated in a search or review committee or had been reviewed or appointed to a position as a result of a search in the previous three years. Participants were asked to respond to 51 positively-worded questions on a 5-point Likert scale with responses ranging from strongly agree to strongly disagree. Questions posed related to the thoroughness of the search/review; confidentiality; process employed; and satisfaction with the search/review process and decision reached. Additionally, opportunity was given for written comments and observations and suggestions for ways in which the search/review process could be improved. Of 124 people invited to participate, 42 responded, with some respondents fitting into multiple categories: those who had participated in a search (37 respondents); those who had served on a review committee (22 participants); and those who had been reviewed or appointed to a position as a result of a search (15 participants). All questions received a positive response with between 75 to 80 percent of all participants indicating either "agree" or "strongly agree" with the statements.

Many respondents described the search process positively, citing the process as open, transparent, fair, extensive, inclusive and well conducted with input from many sources. Concerns by individuals were expressed regarding timeliness of searches; conflicts of interest; the influence of the chair upon the committee; systemic bias for internal candidates; the recommendation and report to the Board as a full expression of the committee's view; and specific concerns regarding

representation on the committee. Views were expressed both in support of open searches and in support of closed searches.

In general, responses were more critical of the review process than the search process. However, positive responses spoke of the importance of the open dialogue with the incumbent regarding their performance and aspirations, and the inclusiveness of the process. Negative responses spoke of the questionable value gained, with the process described as difficult and insensitive towards the incumbent. Concerns were also expressed regarding the collection of feedback on performance and the timeliness of reviews.

The responses raised a number of issues and questions for the Joint Committee's consideration of the search and review procedures. Due to the small sample obtained, the Joint Committee was unable to conclude the views expressed in the response to the open-ended questions were widely held.

APPROACH

The Joint Committee has identified explicit principles which do or should underpin the University's broad procedures. The committee considered the principles to be analogous to a policy document, with the principles providing the framework within which the procedures would be enacted. Rather than continue the existing specific lists of membership for each individual search or review committee, the Joint Committee has collapsed the membership into a summary document *(Appendix A)*, with the specific membership by position for specific committees collated in a table *(Appendix B*).

Rationale for those Senior Administrative Positions Subject to the Procedures

There are very significant financial and human resource expenditures implied by the application of the search and review procedures. It seems reasonable to try and ensure that the procedures are invoked only when there is benefit to the University in so doing. Articulating the criteria by which positions should be included in the procedures was considered consistent with the principle-based approach adopted by the Joint Committee and as such, would provide a means to identify which positions should be included in the procedures. The criteria are discussed in the "Principles for Searches and Reviews," and the positions subject to the search and review procedures, based upon the application of these criteria, are listed in Appendices A and B. In addition to aiding in the classification of newly-created positions, application of the criteria resulted in recommending that three positions currently included in the procedures be removed: the Associate Vice-President Human Resources; Chief Information Officer and Associate Vice-President Information and Communications Technology; and Associate Vice-President Student and Enrolment Services. In submitting the positions subject to the procedures, the Joint Committee recognizes this is a determination which is also subject to the agreement of the University and the University of Saskatchewan Faculty Association.

In addition to those positions listed in Appendices A and B, the Joint Committee discussed the newly created position of Associate Vice-President Research (Health) and Vice-President Research and Innovation (Saskatoon Health Region). It was noted that the composition of the first search committee struck for this position differed significantly from search committees for similar positions in the University. It is recommended that the University discuss with the Health Region the composition of the search committee so that it closely parallels that of the Associate Vice President Research while acknowledging that additional members will be necessary to represent the interests of the Health Region. Given that this is a joint appointment, the process leading to appointment and consideration for re-appointment may differ, but the Joint Committee

recommends that the principles outlined in the "General Procedures for Searches and Reviews" be respected.

The Executive Director and the Associate Director of the Johnson-Shoyama Graduate School of Public Policy are joint appointments between the University of Saskatchewan and the University of Regina. The Operating Principles of the school state, "Procedures governing the search for both the Executive Director and the Associate Director positions will be those laid out in both universities' search and review procedures as approved by their respective boards, but provision will be made to ensure appropriate membership from both universities" (p. 5). Accordingly the positions are included in these recommendations but the joint committee notes that provision for University of Regina representation will be necessary. This may involve either modest expansion of the search/review committee or sharing of positions between the universities or both.

SPECIFIC ISSUES

In its review, the Joint Committee sought to explore issues identified through the committee's consultation. The view of the Joint Committee in relation to issues and rationale for changing or not changing the procedures is outlined as follows.

Issues Common to Searches and Reviews

Committee Composition

The composition of search committees and review committees are identical for each individual position. The search committee and the review committee are deliberative bodies. While individual members bring the perspective of those constituencies most directly affected by the incumbent, they are not explicitly representatives of those groups in the sense of a constituent assembly. The committee composition seeks to balance the desire for broad input against the

practical logistics associated with the size of the committee, related to the need to facilitate regular meetings and meaningful engagement with candidates, the University community, and external constituencies. To compensate for the necessary limitation of size, consultation must be undertaken by the search committee with the broader University community to attain a depth of knowledge of the position—its responsibilities and challenges—and those qualities necessary for the success of the appointee.

The Joint Committee recommended very few changes to the search and review committee composition. Changes to membership include increased flexibility to allow for more than one professional association to be represented based upon a representation from the College Faculty Council to the Board. Alternatively, the search committee may identify the manner by which it will elicit input from related professional associations not represented on the search committee. Presently, the following colleges—Education; Edwards School of Business; Pharmacy and Nutrition; Medicine—have more than one professional association associated with the college. In response to the request from the College of Pharmacy and Nutrition, the Joint Committee has modified the procedures to allow for the professional associations related to the two professional academic programs within the College to be represented on future search and review committees.

Other specific changes include the addition of the Vice-President Research or designate to all search committees for Deans and to the review committee for the Dean of Dentistry; a representative from Huskie Athletics and a representative from Community Programs to be added to the search and review committees for the Dean of Kinesiology, based upon a request from the College faculty; a member of Senate to be added to the search and review committees for the Vice-President Research; the replacement of the Chair of the Academic Support Committee of Council with a member of the General Academic Assembly on the search and review committees for the Dean, University Library; the removal of a student representative from the USSU for the search and review committees for the Dean of Graduate Studies and Research; and the replacement of one of

the faculty members on the search and review committees for the Dean of Graduate Studies and Research with a member of the General Academic Assembly.

The Joint Committee considered at length the question of staff representation beyond that which presently exists within the search committee composition, particularly for decanal searches. Given the broad range of responsibilities assigned to staff members within colleges and varying categories of appointment, the committee elected not to change the committee composition to add staff member representation, beyond where it presently exists. However, the importance of soliciting the views of staff members through the consultative processes outlined in the procedures is emphasized to search committees.

Confidentiality

Confidentiality is central to searches and reviews and many institutions require search and review committee members to sign statements of confidentiality. With respect to confidentiality, the Joint Committee recognizes explicitly that the discussions and documentation viewed by the search or review committee and the identity of candidates are confidential. The question of open versus closed searches and the confidentiality of candidates at the short-listed stage is considered separately within this report.

Communication of Process

In contrast to the confidentiality associated with the search or review committee's deliberations, information about the search and review process itself and the stage of the search or review should be readily available and communicated to the University community and relevant external constituencies. Likewise, during the review process, the incumbent under review should be advised of the membership of the review committee once it is constituted, the timeline for the review, and expectations of the review process.

Conflict of Interest

Within the university's collegial environment, conflicts of interest or perceived conflicts of interest may exist, particularly in relation to internal candidates. Any conflict of interest or perceived conflict of interest by a member on a search and review committee, either at the time of appointment to the committee or arising during the course of the search or review, must be promptly disclosed to the committee chair so that it may be addressed by the committee. There are many possible relationships or interests that could constitute conflict of interest (see the University's Conflict of Interest policy for a more complete discussion) but in particular, a committee member is in conflict of interest if he or she is biased for or against a candidate. Additionally, some situations may arise that are not specifically defined by this policy, but must be reported and considered in order to determine whether a conflict of interest exists or may be seen to exist.

Inclusivity and Sensitivity

One of the Joint Committee's goals was to ensure the revised search and review procedures do not represent a barrier related either to gender or culture, which would dissuade individuals from seeking or remaining in senior positions. All search and review committees are required to be fully aware of and proceed in accordance with the University's employment equity policies. As search and review committees are able to formulate their own procedures, the flexibility is afforded for committees to accommodate cultural and gender distinctions among candidates. In particular, the topic, format, venue and perhaps even the advisability of a formal presentation should be considered carefully by search committees. There may be alternative methods to assess a candidate's ability and to allow public input into a candidate's suitability for an administrative position.

Search/Review Committee Report and Recommendation for Appointment/Reappointment

The Joint Committee discussed at some length the reporting of outcomes of search and review committee recommendations. Search and review committees report to the Board through the President. The report should provide a rationale for the committee's recommendation and include the majority and minority (if any) views held by committee members. Ideally, committee members would have an opportunity to review the report before it is submitted. It is useful to distinguish between preferred candidates and acceptable candidates. Ideally, the chair and the majority of the committee will come to agreement on the preferred candidate. If there are differing views between the chair and the majority of the committee on the preferred candidate, it is critical that there be agreement on acceptable candidates, and the chair may recommend any acceptable candidate to the President. The Joint Committee recognizes that the President must also be in agreement with the recommendation and that it is entirely within the purview of the President to make an alternative recommendation. Accordingly, if the President provides a recommendation from the short-listed candidates to the Board different from that of the committee, he or she should provide a rationale to the Board for the alternative recommendation, and the rationale for the alternative recommendation should be provided to the search committee for information.

Failed Searches and Review and Subsequent Searches

Situations may arise when a search is considered failed. A search is declared failed by the President or Board. For example, a search may be declared failed if the chair and the search committee cannot come to an agreement on an acceptable candidate to recommend for appointment. If the President declares a search failed, the search committee may be reconstituted and may or may not consist of new membership, as determined by the President. If the Board declares a search failed, the Board will decide how to proceed.

If a review does not lead to a recommendation for reappointment, a search committee will be constituted. It is permissible but not required that members of the review committee could also serve on the subsequent search committee.

Continuous Improvement

The Provost's Office is encouraged to continue to gather feedback on best practices for searches and reviews. As part of that endeavor, conducting a brief survey of search and review committees immediately following the conclusion of their work is suggested as a means to gain insight into ways to continue to improve the search and review process.

Issues Specific to Searches

Timing of Searches

The search for senior administrators is one of the highest priorities of the University. Searches should be well planned in advance and commence in a timely manner to provide for a smooth transition between leaders and ensure continued momentum towards the University's commitments and strategic goals. It is the view of the Joint Committee that acting appointments, including for newly-created positions, should be avoided with the recognition that there will be occasions when an acting appointment is unavoidable or even helpful, given the unique circumstances related to the appointment. The Joint Committee realizes that searches are complicated and can be protracted due to individual circumstances, unrelated to process. In these instances, the flexibility to appoint an acting administrator is necessary to ensure the continued vitality of the University while the search continues.

As the Board of Governors is responsible for the appointment and reappointment of the University's senior administrators, it is suggested that the Board should assume greater oversight for the timeliness and the progress of searches and reviews. At regular intervals, senior

administration should provide to the Board a schedule of current and pending searches and reviews and progress towards completion.

Search Climate

The views of two senior search consultants from two firms commonly employed by the University—Janet Wright and Associates, and the Geldart Group—were sought. Both spoke of the increasingly competitive market for the recruitment of senior administrators. The University's senior administrators, in their experience as chairs of search committees, supported this as an accurate assessment of the current post-secondary landscape. Search consultants are important contributors to the search process, both in their work with applicants to collect the information significant for their decision, and in providing information to the search committee not available through the formal interview process. Both consultants spoke of the difficulty of searches and the prolonged efforts often required, with search consultants speaking with hundreds of individuals to present two or three candidates to the committee. It was within this context that the Joint Committee considered the question of closed versus open searches, (see below) and the increasing desire for candidates, particularly at the vice-presidential and presidential levels, not to make their candidacy public until appointment. The competitiveness of the market and difficulty of concluding searches successfully also underscores the importance of the principle of timeliness related to searches.

Open Versus Closed Searches

Open searches are defined as searches where the identity of the short-listed candidates is publicly known and there is the opportunity for feedback regarding the suitability of the candidates; closed searches are defined as searches where the identity of the short-listed candidates is not made public, and there is no opportunity for feedback from the community at large about the candidates prior to appointment. The Joint Committee discussed at length the

importance of balancing openness in the search process through the presentation of candidates to the broader University community against respect for the wishes of the candidates regarding confidentiality of their candidacy. Closed searches in particular highlight the importance of a search committee that represents and is trusted by those affected by the position.

In its consideration, the Joint Committee made the distinction between decanal searches where there are public presentations, as fitting for the academic head of an academic unit, and the different dynamic that exists in relation to presidential or vice-presidential searches. For decanal searches, it is widely understood by candidates that their candidacy will be public, and they will be expected to present themselves to the collegium. As prospective members of the University's senior executive, vice-presidential or presidential candidates are less likely to expect that their candidacy will involve being placed in front of the University community. In the context of a presidential or vice- presidential search, confidentially until appointment is virtually required as candidates who are members of senior administration at other institutions are unwilling to let their candidacy be known until they are reasonably assured they will be offered the position. If this confidentiality is not assured, the University will potentially lose some of its most highly qualified and desired candidates. Although the procedures allow the search committee to determine its procedures, the Joint Committee has enunciated the principle that all searches be as open as possible unless the search committee determines it is to the advantage of the search, and therefore correspondingly the University's advantage, that the search be closed.

Issues Specific to Reviews

Ensuring the end-of-term review process is based upon an objective measure of the incumbent against the identified competencies for the position is a key goal of the collegial review

process. The role of the review committee is to consider the assessments submitted objectively and consider these in light of the incumbent's capabilities and ability to lead their unit going forward.

Timing of reviews

The Joint Committee concluded that outlining a prescriptive timeframe for the commencement of reviews was not realistic or plausible, given the unique circumstances or convergence of circumstances, such as multiple reviews, that can occur. However, ensuring the review occurs in a timely manner is an important principle and mirrors the priority associated with searches.

In this regard, the Joint Committee considered the effect of the timing and duration of the review upon the incumbent and the unit. From the viewpoint of the incumbent, a protracted review is stressful and places the incumbent under scrutiny. The senior administrators interviewed by the Joint Committee expressed the view that during the review period, and leading up to the review period, their authority and ability to enact change was diminished, pending the outcome of the review. This was a significant concern to the Joint Committee, due to the potential for the review process to limit growth within the unit and the University's strategic objectives. In this regard, the mistaken perception that the period of review starts with the announcement of the intended review created the sense that the review process was longer than it was in actuality.

The Joint Committee confirmed that the actual review normally occurred as intended within a six- to eight-week period starting from the date of the first meeting of the review committee. As the perception is that the process takes significantly longer, the Joint Committee considered this potentially to be due to the definition of the start point of the review. For incumbents being reviewed, the starting point may be perceived as the first meeting held with their reporting authority to consider whether the incumbent wishes to be considered for reappointment, or the date faculty members within the college are asked to select their faculty representatives to serve on

the review committee. Ensuring the incumbent and the unit understand the process and associated timelines will minimize the uncertainty that sometimes seems to be associated with the review process.

Relationship of annual performance reviews, 360-degree reviews and end-of-term reviews

The end-of-term review process consists of a review of the position profile in conjunction with college and unit plans, an open public meeting, and the solicitation of comments from the community on the performance of the incumbent in relation to stated goals. It is the responsibility of the review committee to consider the responses received in light of events and the organizational climate over the course of the incumbent's term.

Many administrative positions now have an annual 360-degree evaluation and feedback. As the 360-degree process is primarily intended as a formative process, it is the Joint Committee's view that the 360-degree reviews in their original form should not be admitted to review committees. Other formal periodic evaluations should be considered notwithstanding the fact that they may include some formative elements.

Feedback solicited during the review process

A strong theme that emerged in the committee's consultation and the survey was the need to balance the openness and transparency of the collegial review of senior administrators, against the potential for the process to be negative and damaging to the incumbent. Ensuring the incumbent and members of the review committee view the feedback received in the same format was supported as consistent with the principles for natural justice. No anonymous submissions are permitted; this supports the principle of transparency. Protecting the incumbent under review from unprofessional submissions upholds the principle of respect.

The University's practice has been to provide the comments as submitted, with the names and any other obvious identifying features removed. However, even with the distinguishing

features removed, the Joint Committee heard that comments are attributable. If the incumbent can identify the author, confidentiality as required in the previous procedures has not been upheld. The Joint Committee therefore considered that in order to be transparent, it must be clear to those making submissions that, even though their names will be removed from the submission, the confidentiality of their comments cannot be assured. The following process is recommended: Submissions received will be provided to the review committee and incumbent as submitted, other than with the removal of the author's name. The responsibility to ensure that a submission is not identifiable based on its contents rests on the individual making the submission.

Respect for all involved in the review process, including the incumbent, has been expressed as a foundational principle of the review process. Respect does not imply lack of critique. It implies critique focused on performance and ability as it relates to the position profile and decoupled from inappropriate emotional or personal attacks. The chair will first review the submissions to ensure their professionalism. If the chair believes any of the comments submitted are unprofessional, she or he will contact the author and provide him or her with the option of resubmitting. If the author declines to resubmit, the comments will not be provided to the review committee and incumbent. Without revealing their content, the chair shall report all exclusions to the committee.

Informal feedback sought by incumbent prior to review

At times, senior administrators have elected to informally poll faculty members within their college or colleagues regarding their performance to inform their decision on whether or not to stand for review. The Joint Committee recognizes that it is within the purview of the incumbent to seek feedback on performance prior to submitting to the end-of-term review process outlined in the review procedures, as desired, and that the search and review procedures have no bearing on this situation.

OVERALL RECOMMENDATIONS

The following comprises a brief summary of the Joint Committee's recommendations as reflected within the committee's report and expressed in the principles and procedures:

General:

1. That the process and stage of the search or review be readily available and communicated to the University community and relevant external constituencies (page 14, 29, 31);

2. That the Board of Governors assume greater responsibility and oversight for the timeliness and progress of searches and reviews, and that at regular intervals senior administration provide to the Board a schedule of current and pending searches and reviews and progress towards completion (page 17);

3. That the University discuss with the Health Region the composition of the search committee for the Associate Vice-President Research (Health) and Vice-President Research and Innovation (Saskatoon Health Region) so that it closely parallels that of the Associate Vice-President Research while acknowledging that additional members will be necessary to represent the interests of the Health Region. Given that this is a joint appointment, the process leading to appointment and consideration for re-appointment may differ, but the Joint Committee recommends that the principles outlined in the "General Procedures for Search and Review" be respected (page 11);

4. That the search and end-of-term review be based upon an appropriate position profile (page 35, 37);

5. That both the professional associations related to the two professional academic programs in the College of Pharmacy and Nutrition be represented on the search/review committee for the Dean, Pharmacy and Nutrition (page 13, 14);

6. That under unique circumstances, more than one professional association may be represented as determined by the Board following a formal request from the College Faculty Council (page 13);

7. That a representative from Huskie Athletics and a representative from Community Programs be added to the search/review committee for the Dean, Kinesiology (page 13, 42);

8. That the Vice-President Research or designate be added to the search committees for all Deans and to the review committee for the Dean of Dentistry (page 13, 41);

9. That a member of Senate be added to the search/review committee for the Vice-President Research (page 13);

10. That the undergraduate student representative selected by the USSU be removed from the search/review committees for the Dean, College of Graduate Studies and Research, and that one of the four faculty of the College selected by members of the College be replaced with a

member of the General Academic Assembly, selected by Council who holds a senior administrative position in the University (page 13);

11. That an additional librarian, selected by the librarians be added to the search/review committees for the Dean, University Library, and that the Chair of the Academic Support Committee of Council be replaced with a member of the General Academic Assembly (page 13);

12. That subject to the approved principles and procedures for searches and reviews, the search and review committees will determine their own procedures (page 35, 37);

13. That the Provost's Office continue to gather feedback on best practices for searches and reviews. As part of that endeavor conducting a brief survey of search and review committees immediately following the conclusion of their work is suggested as a means to gain insight into ways to continue to improve the search and review process (page 17);

14. That the positions of the Executive Directors and Associate Directors of the Interdisciplinary Schools (School of Public Health; Environment and Sustainability; Johnson-Shoyama Graduate School of Public Policy); Vice-Deans (Humanities and Fine Arts; Social Sciences, Science); the Vice-Provost Teaching and Learning; and the Associate Vice-President Research be subject to the procedures), in addition to the positions already named in the Letter of Understanding (page 11, Appendices A & B) [note that the Executive Director and Associate Director of the Johnson-Shoyama Graduate School of Public Policy are joint appointments with the University of Regina. Provision for University of Regina representation will be necessary. This may involve either modest expansion of the search/review committee or sharing of positions between the universities or both];

15. That the positions of Associate Vice-President Human Resources; Chief Information Officer and Associate Vice-President Information and Communications Technology; and Associate Vice-President Student and Enrolment Services no longer be subject to the procedures (page 11, Appendices A & B);

Searches

16. That searches for senior administrators commence in a timely manner, far enough in advance that an appointment can be made without the necessity for an intervening acting appointment, with the recognition that there will be occasions when an acting appointment is unavoidable or even helpful, given the unique circumstances related to the appointment (page 17, 36);

17. That when a short list of candidates has been established, the search committee determines whether the search will be confidential or open. The Joint Committee recognizes that the current expectation is for open decanal searches. For all searches, if there is evidence presented to the search committee that the search will be disadvantaged by requiring public presentations of the short-listed candidates the committee, at its discretion, may continue the search process in confidence. In the absence of such evidence, the committee is encouraged to make every effort to involve faculty and staff through such means as forums or seminar presentations (page 19, 29);

18. That the chair and the majority of the committee strive to come to agreement on the preferred candidate. If there are differing views on the preferred candidate, it is critical that there be agreement on acceptable candidates. If agreement is not possible, the search may be declared failed by the President or the Board. If the President declares a search failed, the search committee may be reconstituted and may or may not consist of new membership, as determined by the President. If the Board declares a search failed, the Board will decide how to proceed (page 16, 36);

19. That if the President provides a recommendation from the short-listed candidates to the Board different from that of the search committee, he or she provide a rationale to the Board for the alternative recommendation, and that the search committee also be provided the rationale for the alternative recommendation for information (page 16, 34);

Reviews

20. That the chair meet with the incumbent prior to and subsequent to the review to provide information and feedback about the process and outcome including the membership of the review committee once constituted, the timeline for the review, and expectations of the review process (page 37);

21. That assessment of the likelihood of the incumbent continuing to perform the responsibilities of his or her office at a high level should be based on the revised position profile if that profile is different from what was in effect during the incumbent's term (page 35, 37);

22. That the results of the University's 360-degree review process in their original form not be admitted to the review committee. Other formal periodic evaluations should be considered notwithstanding the fact that they may include some formative elements (page 21);

23. That the chair of the review committee ensures that submissions forwarded to the review committee and incumbent are respectful and professional (page 22, 38);

ACKNOWLEDGEMENTS

The Joint Committee wishes to thank those who participated in the consultation undertaken by the committee, and to express appreciation for the frank and thoughtful approach taken by those interviewed by the committee.

JOINT COMMITTEE MEMBERSHIP

Chair

John Rigby	Department of Management and Marketing

Members appointed from the General Academic Assembly

Jim Cheesman	Department of Psychology
Bob Gander	Department of Electrical and Computer Engineering
Joan Sawatzky	College of Nursing

Members appointed by the Board of Governors

Jim Germida	Vice-Provost Faculty Relations
Nancy Hopkins	Member, Board of Governors
Lea Pennock	University Secretary

Administrative Support

Sandra Calver (Secretary)	Coordinator, University Governance University Secretariat

SEARCH AND REVIEW PROCEDURES FOR SENIOR ADMINISTRATORS

Approved March 4, 2011

PREAMBLE

The University of Saskatchewan is committed to being a pre-eminent institution of higher learning. This can only be achieved with truly exceptional senior administrators leading, directing and equipping equally exceptional faculty and staff toward a shared vision of outstanding internationally recognized achievement. It is therefore critical that search and review procedures for senior administrators result in outstanding candidates being identified in the search process and retained and supported in the review process. It is likewise critical that recommended candidates are able to work with, support and complement the contributions of other senior administrators, faculty and staff. The goal of the Search and Review Procedures for Senior Administrators is to identify, recruit, support and retain such truly exceptional individuals.

PRINCIPLES for SEARCHES

Purpose

The purpose of the search process is to identify a number of outstanding candidates, based on the position profile, from which a recommendation for appointment shall be made.

Transparency

The search process, procedures and composition of the search committee shall be readily available and accessible to all interested parties. The search committee shall ensure consistent and meaningful communications to the community and the candidates about the process as it unfolds.

The principle of transparency must be balanced against the requirements of the search. Accordingly, the initial list of candidates will not be made public. When a short list of candidates has been established it is the responsibility of the search committee to determine whether the search will be confidential or open. If there is evidence presented to the search committee that the search will be disadvantaged by requiring public presentations of the short-listed candidates, the committee, at its discretion, may continue the search process in confidence. In the absence of such evidence, the committee is encouraged to make every effort to involve faculty and staff through such means as forums or seminar presentations.

Accountability

Search committees (except the Search Committee for the President) report to the Board of Governors through the President. The report shall provide a rationale for the committee's recommendation and include the majority and minority views (if any) held by committee members.

Confidentiality

Information or documentation relating to any candidate will not be shared beyond the committee without the express permission of that candidate.

The deliberations and documentation of the committee will not be shared beyond the committee except for the purposes of accountability as described above.

Representation

Those constituencies most directly affected by the position should be represented in the search process subject to reasonable limits on the size of the search committee.

Consultation

The process shall include broad and extensive consultations with the University community and external constituencies regarding the University's strategic needs as they relate to the position and the attributes and skills required of candidates to meet those needs. It is critically important that all committee members are working from the same base of information and that the significance of that information is considered by the entire committee.

Timeliness

Search committees should be formed expeditiously and begin work in a timely fashion to ensure the transition between academic administrators occurs as smoothly as possible. Acting appointments should be avoided whenever reasonably possible.

Respect

The search process will be respectful of all groups and individuals involved in the process, including the candidates.

Equity

The search committee will conduct its work in accordance with the University's employment equity policies.

Conflict of Interest

Any real or perceived conflict of interest by a search committee member shall be identified and disclosed as soon as a committee member becomes aware of it so that it may be appropriately considered by the committee. There are many possible relationships or interests that could constitute conflict of interest (see the University's Conflict of Interest policy for a more complete discussion) but in particular, a committee member is in conflict of interest if he or she is biased for or against a candidate. If a committee member is considered by the committee to be, or to be seen to be, in conflict of interest, the committee member shall be excused.

Role of Individual Search Committee Members

The search committee is a deliberative body. While individual members bring the perspective of those constituencies most directly affected by the incumbent they are not explicitly representatives of those groups in the sense of a constituent assembly. Rather, their role on the committee is to exercise their independent judgment to seek the best candidate for the position. Input or feedback to the committee from constituent groups or individuals should be provided to the chair for the benefit of the entire committee.

Finite Role of the Search Committee

The work of the search committees is important but it is transitory: appointees and incumbents have no obligation to the search committee subsequent to their appointment. The accountability of positions is identified in the written profile of the position.

Purpose

The purpose of the review process is to assess whether an incumbent has performed and will continue to perform to a high standard the responsibilities expressed in the position profile and to arrive at a recommendation that either:

a. an incumbent be reappointed, or
b. an incumbent not be reappointed and a search be undertaken.

Transparency

The review process, procedures and composition of the review committee shall be readily available and accessible to all interested parties. The review committee shall ensure consistent and meaningful communications to the community and the incumbent about the process as it unfolds.

Accountability

Review committees (except the Review Committee for the President) report to the Board of Governors through the President. The report shall provide a rationale for the committee's recommendation and include the majority and minority views (if any) held by committee members.

Confidentiality of Responses on Performance

Information or documentation relating to any incumbent will not be shared beyond the committee without the express permission of that incumbent.

The deliberations and documentation of the committee will not be shared beyond the committee except for the purposes of accountability as described above.

Disclosure

Incumbents being reviewed must be aware of and have access to the materials that form the basis of their review.

Representation

Those constituencies most directly affected by the position should be represented in the review process subject to reasonable limits on the size of the review committee.

Consultation

The process shall include broad and extensive consultations with the University community and external constituencies regarding the University's strategic needs as they relate to the position, the attributes and skills required to meet those needs, and the performance of the incumbent in relation to those needs, attributes and skills. It is critically important that all committee members are working from the same base of information and that the significance of that information is considered by the entire committee.

Timeliness

Review committees should be formed expeditiously and begin work in a timely fashion to ensure minimum possible disruption to the work of the incumbent, or in those situations where a search is recommended, to allow the search process itself to be undertaken in a timely fashion.

Respect

The review process will be respectful of all groups and individuals involved in the process, including the incumbent.

Equity

The review committee will conduct its work in accordance with the University's employment equity policies.

Conflict of Interest

Any real or perceived conflict of interest by a review committee member shall be identified and disclosed as soon as a committee member becomes aware of it so that it may be appropriately considered by the committee. If a committee member is considered by the committee to be, or to be seen to be, in conflict of interest, the committee member shall be excused.

Role of Individual Review Committee Members

The review committee is a deliberative body. While individual members bring the perspective of those constituencies most directly affected by the incumbent they are not explicitly representatives of those groups in the sense of a constituent assembly. Rather, their role on the committee is to exercise their independent judgment as to whether an incumbent should be reappointed. Input or feedback to the committee from constituent groups or individuals should be provided to the chair for the benefit of the entire committee.

Finite Role of the Review Committee

The work of the review committees is important but it is transitory: if incumbents are reappointed they have no obligation to the review committee subsequent to their reappointment. The accountability of positions is identified in the written profile of the position.

CRITERIA FOR INCLUSION IN THE SEARCH AND REVIEW PROCEDURES

The following criteria are applied to determine which senior positions should be subject to these provisions:

1. **Centrality of the position to the academic mission of the University.** The closer the responsibilities of the position lie to the centre of the University's academic mission the more imperative it is that the position is subject to the procedures.

2. **The academic decision making authority vested in the position.** If the incumbent in a position has the direct authority to decide academic outcomes and directions, the position should be subject to these provisions. Conversely, if the incumbent in a position primarily provides support and technical expertise, the position should not be subject to these procedures.

3. **The level of academic experience required by the position**. If a position clearly requires academic experience in teaching and research, then careful consideration should be given to including it within the scope of these procedures. If a position clearly does not require academic experience in teaching and research (notwithstanding the possibility that an incumbent may have such experience), the position probably should not be subject to these procedures.

4. **The level of technical expertise required by the position**. If a position has highly technical requirements, such that members of a search or review committee may not realistically be able to assess the quality or performance of a candidate or incumbent, the position should not be subject to these procedures.

Appendices A and B outline the positions to which these procedures apply based on the above criteria.

GENERAL PROCEDURES FOR SEARCHES AND REVIEWS

GENERAL PROCEDURES FOR SEARCHES

APPOINTMENT PROCEDURES

The Board of Governors appoints the University's senior administrators. Search committees report to the Board of Governors through the President (except the Search Committee for the President which reports directly to the Board). The report shall provide a rationale for the committee's recommendation and include the majority and minority views (if any) held by committee members. Ideally, committee members would have an opportunity to review the report before it is submitted. It is useful to distinguish between preferred candidates and acceptable candidates. Ideally, the chair and the majority of the committee will come to agreement on the preferred candidate. If there are differing views between the chair and the majority of the committee on the preferred candidate, it is critical that there be agreement on acceptable candidates, and the chair may recommend any acceptable candidate to the President. The President must also be in agreement with the recommendation, and it is within the purview of the President to make an alternative recommendation. The President will recommend one name to the Board of Governors from the short-listed candidates. If the President's recommendation differs from the majority view of the search committee, a rationale for the alternative recommendation shall be provided to the Board of Governors, and the rationale for the alternative recommendation should be provided to the search committee for information.

For the appointment of the President, the search committee will submit to the Board the name of the preferred candidate with a comprehensive report outlining the committee's assessment of the candidates. This report shall be presented for advice to the Board at a joint meeting of the search committee and the Board of Governors.

For Associate Deans and Associate Directors of Schools, the Board of Governors has empowered the Provost and Vice-President Academic to make the appointment.

Normally terms of office for all positions will not exceed five years. If the requirements of a position are such that the selected candidate comes from outside of the University community and would not have an academic appointment to return to, the appointment may be made with or without term.

SEARCH PROCEDURES

1. In the penultimate year of the term of the incumbent, a search committee shall be struck.

2. The committee will normally be chaired by the individual to whom the appointee will report.

3. The composition of the committee shall be made public.

4. If a committee member ceases to serve for any reason prior to interviews with candidates, a replacement shall be appointed by the same process and from the same constituency as the member withdrawing. If candidate interviews have commenced, the committee member will not be replaced.

5. Any conflict of interest or perceived conflict of interest of any member, as described in the University's Conflict of Interest Policy, will be promptly disclosed by the member to the committee, so that it may be appropriately considered by the committee to determine whether the member shall resign.

6. Subject to the approved principles and procedures for searches and reviews, the committee shall establish its own procedures. It is critically important that all committee members are working from the same base of information and that the significance of that information is considered by the entire committee. Accordingly at its first meeting the committee should establish such matters as quorum, attendance expectations, and information gathering procedures.

7. A search consultant, if retained, shall be advisory to the search committee. Search consultants are highly knowledgeable in their own right and if retained their services should be used in such a way that the committee receives maximum benefit from their expertise.

8. The committee shall review the position profile and may recommend revision. The search parameters for the position should be based on the position profile. If the search committee finds that it is seeking qualities in the applicants that are not implied by the position profile, the committee should either recommend revision of the position profile or adjust its expectations of applicants to match the profile.

9. For a Presidential search, the committee will provide the opportunity for interested members of the University community to provide written comments on the strategic goals and objectives of the University, and on the progress made or problems encountered in achieving those goals and objectives. All submissions must be written and signed and will be acknowledged and treated in confidence. Electronic submissions are acceptable with provisions made to confirm the authenticity of the author.

10. For Deans and Executive Directors, the committee shall hold a meeting open to all faculty members of the college or school and will also consult with staff to discuss the responsibilities, challenges and opportunities of the college or school in relation to its integrated plan and progress made towards meeting strategic goals expressed in the plan. Staff may attend the open meeting with faculty or may be consulted in a separate meeting as the search committee deems appropriate for a particular college or school.

11. For Associate Deans and Associate Directors of Schools, members of the University community will be advised that the position of Associate Dean or Associate Director will become vacant at a specific date and be invited to submit applications and nominations. Normally, Associate Deans and Associate Directors are recruited internally. The search committee chair shall advise University members when a new Associate Dean or Associate Director position will be created and the search process will commence.

12. For all senior administrative positions, excepting internal searches for Associate Deans and Associate Directors, the committee shall conduct an extensive search. Although the committee may determine the most appropriate means and methods of obtaining applications and nominations,

    a) the position will be advertised in appropriate publications; and by appropriate electronic means
    b) other institutions may be canvassed for nominations; and
    c) nominations will be invited from faculty;
    d) a search consultant may be employed.

13. Searches for senior administrators should commence in a timely manner. Whenever possible the search, including for newly-created positions, should begin far enough in advance that an appointment can be made without the necessity for an intervening acting appointment.

14. A report will accompany the search committee recommendation, which details the process followed and the majority and any minority views of members as described in the "Appointment Procedures" above.

15. Situations may arise when a search is considered failed. A search is declared failed by the President or Board. For example, a search may be declared failed if the chair and the search committee cannot come to an agreement on an acceptable candidate to recommend for appointment. If the President declares a search failed, the search committee may be reconstituted and may or may not consist of new membership, as determined by the President. If the Board declares a search failed, the Board will decide how to proceed.

GENERAL PROCEDURES FOR REVIEWS

RE-APPOINTMENT PROCEDURES

The Board of Governors re-appoints the University's senior administrators. Review committees report to the Board of Governors through the President (except the Review Committee for the President which reports directly to the Board). The report shall provide a rationale for the committee's recommendation and include the majority and minority views (if any) held by committee members. If the President's recommendation differs from the majority view of the review committee, a rationale for the alternative recommendation shall be provided to the Board of Governors, and the rationale for the alternative recommendation provided to the review committee for information. For the review of the President and the Provost and Vice-President Academic, the review committee's report shall be presented for advice to the Board of Governors at a joint meeting of the review committee and the Board.

Normally terms of office will not exceed five years, with the exception of the Vice-President Finance and Resources, who may be re-appointed with or without term. Senior administrators in without term appointments shall be reviewed every five years.

REVIEW PROCEDURES

1. In the penultimate year of the term of the incumbent, a review committee shall be struck if the incumbent wishes to seek a further term.

2. The committee is normally chaired by the individual to whom the incumbent reports.

3. The composition of the committee shall be made public.

4. If a member ceases to serve for any reason prior to the interview with the incumbent, a replacement shall be appointed by the same process and from the same constituency as the member withdrawing. If the interview with the incumbent has occurred, the member will not be replaced.

5. Any conflict of interest or perceived conflict of interest of any member, as described in the University's Conflict of Interest Policy, will be promptly disclosed by the member to the committee, so that it may be appropriately considered by the committee to determine whether the member shall resign.

6. Subject to the approved principles and procedures for searches and reviews, the committee shall establish its own procedures. The chair will meet with the incumbent prior to and subsequent to the review to provide information and feedback about the process and outcome. The incumbent will normally have an opportunity to meet with the committee as a whole to discuss her or his performance. It is critically important that all committee members are working from the same base of information and that the significance of that information is considered by the entire committee. Accordingly, at its first meeting the committee should establish such matters as quorum, attendance expectations, and information gathering procedures.

7. The committee shall review the position profile and may recommend revision. Assessment of an incumbent's performance should be based on the position profile that applied during

the incumbent's term of office. Assessment of the likelihood of the incumbent continuing to perform the responsibilities of his or her office at a high level should be based on the revised position profile if that profile is different from what was in effect during the incumbent's term. If, in considering the likelihood of the incumbent performing at a high level in the future, the review committee finds that it is seeking qualities in incumbents that are not implied by the position profile, the committee should either recommend revision of the position profile or adjust its expectations of the incumbent to match the profile.

8. In conducting a review of the incumbent, the committee will review the performance and progress made toward stated goals which have been outlined as part of the annual appraisal and evaluation process conducted by the incumbent's supervisor. As the 360-degree review process is primarily intended as a formative process, the 360-degree reviews in their original form should not be admitted to review committees.

   Written comment on the performance of the incumbent will be invited by the chair from members of the university community. All submissions must be written and signed and will be acknowledged. Electronic submissions will be accepted with provisions made to confirm the authenticity of the author.

   Submissions received will be provided to the committee and incumbent as submitted, other than with the removal of the author's name. The chair will first review the submissions to ensure their professionalism. The chair will contact the author of any submissions considered by the chair to be unprofessional and provide the opportunity for the author to resubmit her or his comments. Unprofessional submissions will not be provided to the incumbent and committee. Without revealing their content, the chair shall report all exclusions to the committee

9. Reappointment of senior administrators will be recommended if the committee and the supervisor for the incumbent agree the incumbent has fulfilled all responsibilities at a high level and is making and is expected to continue to make significant contributions to the University as defined by their administrative responsibilities.

   For Deans and Executive Directors, the committee will conduct a full review of the performance of the incumbent within the context of the position profile and strategic goals and objectives of the college or school as expressed within its integrated plan, and written comments received from members of the University community. Upon completion of its review, the committee shall recommend either that the incumbent be re-appointed to a subsequent term or that a search be conducted.

   For Associate Deans and Associate Directors, the committee will conduct a full review of the performance of the incumbent within the context of the position profile and strategic goals and objectives of the college as expressed within its integrated plan. Upon completion of its review, the committee shall recommend either that the incumbent be appointed to a subsequent term or that a search be conducted.

10. If a review does not lead to a recommendation for reappointment, a search committee will be constituted. It is permissible but not required that members of the review committee could also serve on the subsequent search committee.

11. A report will accompany the review committee recommendation, which details the process followed and the majority and any minority views of members as described in "Re-appointment Procedures" above.

APPENDIX A: SEARCH AND REVIEW COMMITTEE COMPOSITION BY CATEGORY

The search/review committee is intended to bring the perspective of constituent groups. The desire to provide broad perspective must be balanced against the desire to ensure the size of the committee is functional.

The individual to whom the incumbent will report will normally chair the search or review committee.

Staff representation will not normally be included except for those searches or reviews where the incumbent has a broad responsibility for oversight of large administrative units.

The search/review committee will normally include an undergraduate student and may include a graduate student. If no graduate student is included on the committee, the undergraduate student will be directed to consult with graduate students in the college respecting the needs of the position.

For those searches/reviews where the incumbent has significant interaction and impact upon the wider community and no professional organization represented on Senate is closely related to the college, representation will include a member of University Senate appointed by the Senate Nominations Committee. If a professional organization is closely associated with a college and is represented on University Senate, the search/review committee will include a member of the professional association, selected by the professional association, as a representative of the public at large. If more than one professional association is associated, the Senate Nominations Committee will select the association to be represented. Under unique circumstances, more than one professional association may be represented as determined by the Board following a formal request from the College Faculty Council.

Search/review committees shall ordinarily be composed of the following as members across the general categories of senior administrative appointments.

The following interpretations apply:

Board means the Board of Governors of the University of Saskatchewan
Council means the University of Saskatchewan Council
GAA means the General Academic Assembly of the University of Saskatchewan
GSA means the University of Saskatchewan Graduate Students' Association
Senate means the University of Saskatchewan Senate
USSU means the University of Saskatchewan Students' Union

SEARCH/REVIEW COMMITTEE COMPOSITION:

PRESIDENT

Chair - Chair of the Board

Two members of the Board selected by the Board

One member of the Senate selected by Senate Nominations Committee

Two Deans or Executive Directors of schools, appointed by the Deans

Four members of the GAA selected by Council

Two students, one who is President of the USSU and one who is President of the GSA

PROVOST AND VICE-PRESIDENT ACADEMIC

Chair - the President

One member of the Board selected by the Board

One member of the Senate selected by the Senate Nominations Committee

Four members of the GAA selected by Council

One member of Council, selected by Council and who holds a senior administrative position in the University

Two members of Administration and/or Support Staff appointed by the President

One undergraduate student selected by the USSU

One graduate student selected by the GSA

VICE-PROVOSTS

Chair – Provost and Vice-President Academic

One member of the Board selected by the Board (at the option of the Board)

One Dean or Executive Director of a school appointed by the Provost

One member of Council, selected by Council and who holds a senior administrative position in the University

Four members of the GAA selected by Council

One undergraduate student selected by the USSU

One graduate student selected by the GSA

VICE-PRESIDENTS

Chair - the President

One member of the Board selected by the Board (at the option of the Board)

One member of Senate selected by the Senate Nominations Committee

The Provost and Vice-President Academic

Two members of Administration and/or Support Staff appointed by the President

Two members of the GAA selected by Council

One graduate student selected by the GSA

One undergraduate student selected by the USSU

For the Vice-President, Finance and Resources, an additional Board member;

For the Vice-President Research, two additional GAA members; the Dean, College of Graduate Studies and Research; and one member of Council, selected by Council who holds a senior administrative position in the University

ASSOCIATE VICE-PRESIDENTS

Chair – the Vice-President to whom the position reports

One member of the Board selected by the Board (at the option of the Board)

One Dean, or Executive Director of school appointed by the Provost and Vice-President Academic

Three members of the GAA selected by Council

One student selected by the USSU

One graduate student selected by the GSA

DEANS AND EXECUTIVE DIRECTORS OF SCHOOLS

Chair – Provost and Vice-President Academic or designate

One member of the Board selected by the Board (at the option of the Board)

Vice-President Research or designate

One Dean, Vice Dean, Associate Dean or Executive Director or Associate Director of a school appointed by the Provost and Vice-President Academic preferably from a cognate or closely-related college or school

One member of the GAA, selected by Council who is not a member of the faculty of the College and who holds a senior administrative position in the University

Three members of the faculty of the College or School selected by the faculty of the College or School

One undergraduate student selected by the College's student society [An undergraduate student is not included for colleges and schools that do not have an undergraduate program. At the time of the report, this applies to the Dean Graduate Studies and Research and the Executive Directorsof the School of Environment and Sustainability, the Johnson-Shoyama Graduate School of Public Policy, and the School of Public Health].

One graduate student from a discipline taught in the college or school, selected by the GSA [a graduate student is not included for the Dean of Dentistry]

One member of a related professional association selected by the professional association Unless otherwise indicated, if there is more than one association associated with the College, the Senate Nominations Committee will determine which association is represented [A member from a professional association is not included for colleges and schools for which no association has been identified, but a Senate member is appointed to ensure community representation. At the time of the report, this applies to the Dean Arts and Science, Dean Graduate Studies and Research, and Executive Directors of the School of Environment and Sustainability, the Johnson-Shoyama Graduate School of Public Policy, and the School of Public Health];

For Arts and Science, a member of Senate selected by the Senate Nominations Committee; an additional member of GAA who is not a member of the faculty of the College and who holds a senior administrative position in the University; and an additional faculty member; of the four faculty members of the College selected to serve, there should be one from each of the areas of fine arts; humanities; natural sciences; and social sciences;

For Graduate Studies and Research, a member of Senate selected by the Senate Nominations Committee [note: the member of GAA selected by Council may be a member of the faculty of the College];

For Kinesiology, a representative of Huskie Athletics and a representative of Community Programming;

For Medicine, a medical resident selected by the Residents and a representative of the Academic Health Sciences network;

For Pharmacy and Nutrition, an additional member from a related professional association selected by the Senate Nominations Committee to ensure each of the two academic areas is represented;

For the School of Environment and Sustainability, the Johnson-Shoyama Graduate School of Public Policy, and the School of Public Health a member of Senate appointed by the Senate nominations committee. [Although the Interdisciplinary schools have associated professional bodies, at the time of this report, none of those professional associations have membership on Senate. If the associations apply and are granted membership on Senate they would appoint a member to the Search/Review committee of the appropriate school. In the interim a member of Senate will serve to ensure community representation.] Additionally, the Executive Director of the Johnson-Shoyama Graduate School of Public Policy is a joint appointment with the University of Regina. Provision for University of Regina representation will be necessary. This may involve either modest expansion of the Search/Review committee or sharing of positions between the universities or both.

VICE-DEANS

Chair - Dean of the College

One member appointed by the Provost and Vice-President Academic who holds a senior administrative position

Two members of the faculty of the College from the area of the College for which the Vice-Dean will be responsible

One undergraduate student selected by the College's student society from the area for which the Vice-Dean will be responsible

One graduate student selected by the GSA from the area for which the Vice-Dean will be responsible

ASSOCIATE DEANS AND ASSOCIATE DIRECTORS

Chair - Dean of the College

One member appointed by the Provost and Vice-President Academic

Two members of the faculty of the College selected by the faculty of the College

One undergraduate student selected by the College's student society in cases where the Associate Dean is clearly involved in student affairs in the College

One graduate student selected by the GSA where the Associate Dean has responsibility for research

Note that the Associate Director of the Johnson-Shoyama Graduate School of Public Policy is a joint appointment with the University of Regina. Provision for University of Regina representation will be necessary. This may involve either modest expansion of the Search/Review committee or sharing of positions between the universities or both

APPENDIX B: TABLE OF SEARCH/REVIEW COMMITTEE COMPOSITION BY POSITION

APPENDIX B: TABLE OF SEARCH/REVIEW COMMITTEE MEMBERSHIP BY POSITION[1]

Position[2]	Chair	Board[3]	Senate[4]	GAA	Council	Deans/ Exec. Dir. Schools	GSA[5]	USSU	Admin/ Support Staff	Prof Assoc.	Faculty[6]	Other	Total
President	Chair, Board	2	1	4[7]		2[8]	1[9]	1[10]					12
Provost & VP Academic	President	1	1	4[7]	1[11]		1	1[12]	2[13]				12
Vice-Provost Faculty Relations	Provost	1		4[7]	1[11]	1[14]	1	1[12]					10
Vice-Provost Teaching & Learning	Provost	1		4[7]	1[11]	1[14]	1	1[12]					10
VP Finance & Resources	President	2	1	2[7]			1	1[12]	2[13]			1 -Provost	11
VP Research	President	1	1	4[7]	1[11]	1[15]	1	1[12]	2[13]			1 - Provost	14
AVP Research	VP Research	1		3[7]		1[14]	1	1[12]					8
Dean Agriculture & Bioresources	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	1 - VP Research or designate	11
Dean Arts & Science	Provost or designate	1	1	1[16]		1[14]	1	1[17]			4	1 - VP Research or designate	12
Dean Edwards School of Business	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	1 - VP Research or designate	11
Dean Dentistry	Provost or designate	1		1[16]		1[14]		1[17]		1[18]	3	1 - VP Research or designate	10
Dean Education	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	1 - VP Research or designate	11
Dean Engineering	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	1 - VP Research or designate	11
Dean College of Graduate Studies & Research	Provost or designate	1	1	1[16]		1[14]	1				3	1 - VP Research or designate	10

Position[2]	Chair	Board[3]	Senate[4]	GAA	Council	Deans/ Exec. Dir. Schools	GSA[5]	USSU	Admin/ Support Staff	Prof Assoc.	Faculty[6]	Other	Total
Dean Kinesiology	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	3 [19]	13
Dean Law	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	1 - VP Research or designate	11
Dean Medicine	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	3[20]	13
Dean Nursing	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	1 - VP Research or designate	11
Dean Pharmacy & Nutrition	Provost or designate	1		1[16]		1[14]	1	1[17]		2[21]	3	1 - VP Research or designate	12
Dean University Library	Provost or designate	1		1[16]		1[14]	1	1[12]		1[18]	3	1 - VP Research or designate	11
Dean Western College of Veterinary Medicine	Provost or designate	1		1[16]		1[14]	1	1[17]		1[18]	3	1 - VP Research or designate	11
Executive Director, School of Environment & Sustainability	Provost or designate	1	1[22]	1[16]		1[14]	1				3	1 – VP Research or designate	10
Executive Director School of Public Health	Provost or designate	1	1[22]	1[16]		1[14]	1				3	1 - VP Research or designate	10
Executive Director Johnson-Shoyama Graduate School of Public Policy[23]	Provost or designate	1	1[22]	1[16]		1[14]	1				3	1 - VP Research or designate	10
Vice-Deans	College Dean						1	1[17]			2	1 – appt. by Provost	6
Associate Deans and Associate Directors of Schools[24]	College Dean/Exec. Dir						1[25]	1[26]			2	1 – appt. by Provost	6

[1] Full details are found in Appendix A: Search and Review Committee Composition by Category
[2] All appointments are with term, with the exception of the Vice-President Finance and Resources, who may be appointed with or without term
[3] The Board at its discretion, may or may not assign a member to serve for search and review committees for Deans and Executive Directors of Schools
[4] Appointed by the Senate Nominations Committee
[5] All GSA appointments are made by the GSA
[6] All faculty are members of the college or school and elected by the faculty of the college or school
[7] Appointed by Council
[8] Appointed by the Deans
[9] Must be GSA President
[10] Must be USSU President
[11] Appointed by Council; must hold a senior administrative position
[12] Appointed by USSU
[13] Appointed by the President
[14] Appointed by the Provost
[15] Dean of the College of Graduate Studies and Research
[16] Appointed by Council; must hold a senior administrative position; cannot be a faculty member of the college or school (the GAA member for the search/review committee for the Dean of Graduate Studies and Research may be a member of the college)
[17] Appointed by the Student Society of the College/School
[18] Appointed by the professional association; if there is more than one association associated with the College, the Senate Nominations Committee will determine which association is represented
[19] A representative of Huskie Athletics; one representative of Community Programming; VP Research or designate
[20] A medical resident selected by the residents; one representative of Academic Health Sciences Network; VP Research or designate
[21] Appointed by the professional association
[22] Although the Interdisciplinary schools have associated professional bodies, at the time of this report, none of those professional associations have membership on Senate. If the associations apply and are granted membership on Senate they would appoint a member to the Search/Review committee of the appropriate school. In the interim a member of Senate will serve to ensure community representation.
[23] This is a joint appointment with the University of Regina. Provision for University of Regina representation will be necessary. This may involve either modest expansion of the committee or sharing of positions between the universities or both.
[24] Note that the Associate Director of the Johnson-Shoyama Graduate School of Public Policy is a joint appointment with the University of Regina. Provision for University of Regina representation will be necessary. This may involve either modest expansion of the Search/Review committee or sharing of positions between the universities or both.
[25] Where the Associate Dean is involved in research
[26] Appointed by student society (where the Associate Dean is involved in student affairs)

APPENDIX C: LETTER OF UNDERSTANDING BETWEEN THE UNIVERSITY OF SASKATCHEWAN AND THE UNIVERSITY OF SASKATCHEWAN FACULTY ASSOCIATION

In the interest of promoting harmonious relations and recognizing that the appointment and reappointment of senior Administrative officers has an impact on the working conditions of the Faculty, the University of Saskatchewan and the University of Saskatchewan Faculty Association agree that the following represents their understanding with respect to the appointment and reappointment of senior administrative officers of the University:

1. The University of Saskatchewan agrees that the search procedures outlined in the policy documents issued by the Board of Governors in 1997, and as amended from time to time, shall be interpreted to include Deans (including the Dean, University Library), Associate Deans (including the Associate Dean, University Library), the Associate Vice-President Human Resources, the Associate Vice-President Information and Communications Technology, the Associate Vice-President Student and Enrolment Services, the Vice-Provost, the Vice-President Finance and Resources, the Vice-President Research, the Provost and Vice-President Academic, the President and additional positions as deemed appropriate by the Joint Committee.

2. From time to time, a Joint Committee of the Board of Governors and Council will be established to review the search procedures in respect of the appointment and reappointment of the senior administrative officers noted above, and will report their findings and any proposed amendments to the Board of Governors. The appropriate number of faculty or Council members on the search committees and the appropriate methods for selection of faculty or Council members will be included in the review.

3. The Joint Committee shall be comprised of three (3) members appointed by the Board, and three (3) members drawn from the membership of the General Academic Assembly named by the Nominations Committee of Council and approved by Council, and an independent Chair appointed by the Board of Governors from a list of names put forward by the Joint Committee. The list shall be approved by a majority of the members of the Committee, including at least a majority of the Council appointees, and a majority of the Board appointees.

4. The University agrees to make the policy available on the University web site. Print copies of the policy shall also be available, upon request.

5. The University restates its commitment to follow the policies issued by the Board of Governors and to allow the full range and extent of consultation envisioned by these policies.

Robert E. Gander
_____
Signing for the Association
Dated August 26, 2003

Mark Evered
_____
Signing for the University

AGENDA ITEM NO: 11.3

UNIVERSITY COUNCIL

NOMINATIONS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY: Eric Lamb, vice-chair, nominations committee of Council

DATE OF MEETING: January 16, 2020

SUBJECT: Nominations to deans' review committees

DECISION REQUESTED:

It is recommended that Council approve the nomination of the following individuals to serve as members of the deans' review committees below effective immediately:

- *Dr. Anurag Saxena, associate dean of postgraduate and medical education in the College of Medicine will serve for the dean of WCVM, Dr. Doug Freeman;*
- *Dr. Jack Gray, vice dean research, scholarly and artistic work, College of Arts & Science will serve for the dean of the Library, Dr. Melissa Just;*
- *Dr. Teresa Paslawski, associate dean, School of Rehabilitation Science, will serve for the dean's review for the College of Kinesiology, Dr. Chad London;*
- *The Associate dean of the Library, Rachel Sarjeant-Jenkins, will serve on the review committee for the dean of the College of Law, Dr. Martin Philipson.*

DISCUSSION SUMMARY:

Per the university's search and review procedures, a member of the General Academic Assembly who is also a senior administrator is required on deans' search and review committees. The work of the committees will commence in late January 2020.

ATTACHMENT(S):

1. USask Search and Review Procedures - see attachment for agenda item no. 11.2

AGENDA ITEM NO: 12.1

UNIVERSITY COUNCIL

GOVERNANCE COMMITTEE

NOTICE OF MOTION

PRESENTED BY: Stephen Urquhart, chair of governance committee

DATE OF MEETING: January 16, 2020

SUBJECT: **Council bylaws amendment – monthly meetings**

DECISION REQUESTED:

It is recommended:

That Council approve an amendment of the Council bylaws to eliminate the annual February meeting of Council as Part One III.5(b), effective March 1, 2020.

PURPOSE:

The purpose of this notice of motion is to inform Council of a recommended change to the bylaws (below) to reflect the potential elimination of the annual February meetings of Council.

"**Council Meetings**

b) Council will meet monthly during the academic term (September – June), except in February. The Chairperson can call a meeting during a month when a meeting is not normally scheduled ~~the July to August period~~."

DISCUSSION SUMMARY:

The coordinating committee approved the schedule for University Council for 2020/21 at its meeting on November 28, 2019. The committee discussed the possibility of the February 2021 Council meeting being cancelled, and that the February meetings going forward might be cancelled. The rationale for the change was: 1) that the third Thursday of the month in February falls on reading week, which is the annual break that all colleges and schools participate in; 2) that the alternative of moving the meeting back one week or forward one week creates challenges for coordinating the standing committee meetings with University Council timelines and deadlines.

With regard to the potential implications for the University Catalogue and program approval processes, Russell Isinger, University Registrar, was invited to the coordinating committee meeting on November 28, 2019 to speak to these topics. He indicated that leaving new program approval requests to the March meeting could cause some issues for the release of the University Catalogue addendum and potentially to program implementation for registration. The advantage to getting requests in earlier is that there will be less of a need for an addendum to the calendar.

The committee acknowledged that the meeting of February 2020 will have to proceed, but decided to recommend the cancellation of the February 2021 meeting and those February monthly meetings going forward.

At the December 19, 2019 meeting of Council, the chair of Council, Dr. Jay Wilson, noted that this change was being contemplated. At the January 7, 2020 meeting of the governance committee, this change to the bylaws was recommended.

FURTHER ACTION REQUIRED:

- A request for decision will be forthcoming at the February 20, 2020 meeting of Council.
- The decision of Council will be confirmed with the provost so that the timing of appropriate calendar approvals and tuition approvals at the Provost's Advisory Committee can be coordinated and scheduled in a timely way.
- The change will be reflected in the annual "year-at-a-glance" memo, which is used to communicate Council deadlines for program creation, deletion, and change approvals.

ATTACHMENT:

None

AGENDA ITEM NO: 13.1

UNIVERSITY COUNCIL

JOINT COMMITTEE ON CHAIRS AND PROFESSORSHIPS

REQUEST FOR DECISION

PRESENTED BY:

Ken Wilson
Vice-Provost Faculty Relations
and Chair, Joint Committee on Chairs and Professorships

DATE OF MEETING: January 16, 2020

SUBJECT: **The Wolfe-Saskatchewan Fellowship At-Large for Outstanding Newly Recruited Research Scholars**

DECISION REQUESTED: *It is recommended:*

That council approves the Wolfe-Saskatchewan Fellowship At-Large for Outstanding Newly Recruited Research Scholars and recommends to the Board of Governors that the Board authorize establishment of the chair.

PURPOSE:
The Wolfe-Saskatchewan Fellowship At-Large for Outstanding Newly Recruited Research Scholars will support a newly recruited faculty member during the initial five years of their appointment, allowing the faculty member increased capacity to focus on research activities. The appointment of the fellowship will be in the appointee's first year at the university, whether the appointee is an assistant, associate or full professor and is open to any faculty/department across the university campus. Appointees must demonstrate leadership and exceptional future potential within their areas of research.

CONTEXT AND BACKGROUND:
The fellowship is to be provided to the most talented professors who are in their first year of their first appointment at the University of Saskatchewan. The fellowship will be open to any faculty in any department/college throughout the institution and will serve to help bolster the research agenda of the institution and aid in our recruitment of the top faculty in Canada.

IMPLICATIONS:
The fellowship is being established anonymously by the Woco Foundation, which is the giving arm for alumnus Dr. Bernard Wolfe (BA'56) and his family. Dr. Wolfe is a

physician and researcher born in Killdeer, SK. He is best known for his work in the area of hormone replacement therapy.

A Gift of $937,500 from the donor will be endowed at the university to establish the fellowship. A contribution from the Greystone Heritage Trust fund of $937,500 to create in perpetuity the fully endowed Wolfe-Saskatchewan Fellowship At-Large for Outstanding Newly Recruited Scholars Endowment Fund with an initial value of $1,875,000. This is an endowed fellowship and will continue in perpetuity.
The annual award would be valued at approximately $70,000.

The first award is anticipated to be made in the 2021-22 academic year.

CONSULTATION:
The establishment of the chair is recommended for approval by the Joint Committee on Chairs and Professorships.

SUMMARY:
The Wolfe-Saskatchewan Fellowship At-Large for Outstanding Newly Recruited Research Scholars will help advance the goals of the university plan and will reaffirm the University of Saskatchewan's place as one of Canada's top research-intensive universities.

USask is home to leading research infrastructure such as the Canadian Light Source Synchrotron and VIDO-InterVac. Continuing to recruit the best and brightest researchers to work in our world-class facilities is an essential component of research success.

The Wolfe-Saskatchewan Fellowship allows the university to invest in the potential demonstrated by our newly recruited faculty members, and provides an opportunity to nourish their growth as they contribute to research success at the University of Saskatchewan. These researchers will continue to bolster the university's reputation in recruiting and retaining talented researchers who will push boundaries and ultimately impact the university's standing amongst the U15 institutions and other critical world rankings. Additionally, this fellowship would assist the university in successfully achieving the commitments made in the university plan.

This fellowship would assist the university in achieving its commitment to Courageous Curiosity, by empowering researchers as they launch their careers at USask and work to seek solutions to the most pressing challenges facing our global community. This fellowship is also designed to help embolden new faculty members to demonstrate leadership qualities, and will help achieve desired outcomes of demonstrated leadership in scientific, technological and social innovation.

ATTACHMENTS:

Terms of Reference

Wolfe-Saskatchewan Fellowship At-Large for Outstanding Newly Recruited Research Scholars

Terms of Reference

Purpose:

To create an endowment that will support a Wolfe-Saskatchewan Fellowship for Outstanding Newly Recruited Research Scholars at the University of Saskatchewan. The appointment of the Fellowship will be in the appointee's first year at the University, whether the appointee is an Assistant, Associate or full Professor and is open to any Faculty / Department across the University campus. Appointees must demonstrate leadership and exceptional future potential within their areas of research.

The Fellowship will support the newly recruited faculty member during the initial five years of their appointment, allowing the faculty member increased capacity to focus on research activities, with 70 per cent of academic time dedicated to research or research-related activities, 20 per cent of academic time teaching, and 10 per cent of time dedicated to service to the community, the discipline and the university.

Source and Amount of Funding:

A Gift of $937,500 from the Donor will be endowed at the University to establish the Fellowship. A contribution from the Greystone Heritage fund of $937,500 to create in perpetuity the fully endowed Wolfe-Saskatchewan Fellowship At-Large for Outstanding Newly Recruited Scholars Endowment Fund (the "Endowment Fund") with an initial value of $1,875,000.

The Donor commits to provide $937,500 to the University within six weeks of receipt of written notification that the Approvals have been obtained.

Tenability:

The University shall invest the Endowment Fund in accordance with the University's investment policies for endowed funds, as may be amended from time to time.

The amount available for spending will be allocated one complete fiscal year after the donation is received. The value of the award will be based on the annual resources available. The first award is anticipated to be made in the 2021-22 academic year.

Eligible Expenditures:

Funds will be used exclusively to support research expenditures of the chairholder. The salary and benefits will be paid by the administering college.

Selection Criteria:

Selection of the Wolfe-Saskatchewan Fellows will be based on the quality of the nominee's research and record of accomplishments, as well as, the extent to which the nominee has contributed to research excellence and innovation in their chosen field in Canada and internationally relative to their career stage. It will also be based on the candidate's leadership potential in their chosen field in Canada and internationally.

Appointments to the Fellowship will be for five years, subject to an annual review of continued eligibility based on the quality of the incumbent's research program and overall performance. The Fellowship may be held only once by a faculty member.

Selection Process:

The holder of the Wolfe-Saskatchewan Fellowship will be chosen on a competitive basis from among the most talented Assistant, Associate or Full Professors who are in the first year of their first appointment at The University of Saskatchewan.

Faculty members must be nominated by their Dean to be considered for the Wolfe-Saskatchewan Fellowship.

Deans will be asked to submit a nomination package including:

- A cover letter signed by the Dean and nominee explaining the significance of the nominee's research, how he or she exhibits leadership in their area of research, the potential impact of the research, any cross-faculty or interdisciplinary aspects of the research, how the research aligns with the University's areas of research strength, and a narrative regarding the nominee's career to date;
- A current CV including a list of publications; and
- Up to three letters of support.

Selection Committee:

A selection committee, chaired by the Vice-President (Research) or designate, will choose the recipient of the Wolfe-Saskatchewan Fellowship. Membership of the selection committee will include an appropriate balance across Faculties to enable adjudication of a broad range of research disciplines.

Management Committee:

The Management Committee shall consist of the Vice President, Research, the Provost and Vice President Academic, the Dean (academic home of the chair), and the Manager, Donations and Trusts (or respective designates). The Vice President, Research will

act as the chair of the Management Committee. The Vice President at their discretion, may also appoint additional members to the management committee as circumstances warrant.

The Management Committee's responsibilities shall include the following:

1. Oversee the activities of the fellow annually to ensure they are in keeping with the fellow's purpose and are integrated with the university's priorities.
2. Receive and review the annual and financial report on the activities of the fellow and a budget for the upcoming year.
3. Provide an annual financial and activity report of the fellow with commentary as appropriate to the Joint Committee on Chairs and Professorships.
4. Provide a copy of the annual financial and activity report to the Development Office to be shared with the WOCO Foundation.
5. Form a selection committee upon the completion of each five (5) year term to select the new fellow, or at an earlier date should the Management Committee deem appropriate.

Fund Administration:

At such time that the endowment becomes administered at the University of Saskatchewan, the University shall have the power to administer the fund as part of the University's general trust and endowment funds, in keeping with and under the University's investment and administrative guidelines and practices as may be established and changed from time to time. At the date of this agreement, and under the above guidelines and practices, provision shall be made for the investment of trust funds in common with other trust funds and the payment of administration fees with respect to the management of trust funds, such fees to be determined by the University acting reasonably.

If it becomes necessary to make changes to the terms during its period of execution, any such changes will be made by the University after consultation with the Woco Foundation or any successor organization. If after timely efforts, including at least two (2) letters over the course of six (6) months to each of the Woco Foundation (17 Metamora Crescent, London, ON N6G 1R2) and Harrison Pensa LLP (450 Talbot St, Box 3227, London, ON N6A 4K3) or their representative and/or successors, no representative is available for consultation, the University will make any required changes adhering a closely as possible to the original intent of the Woco Foundation.

The creation of this Fellowship is subject to approval of both University of Saskatchewan Council and University of Saskatchewan Board of Governors.

The Office of the Vice-President, Research recommends acceptance based on the above terms.

Dr. Karen Chad
Vice-President, Research

Date

Approved and accepted on behalf of the Board of Governors of the University of Saskatchewan.

Debra Pozega Osburn, Ph.D.
Vice-President, University Relations

Date