

UNIVERSITY COUNCIL Agenda – March 21, 2024

Location: ARTS 241, Neatby Timlin Theatre Time: 2:30 - 4:30pm

Call to Order

1. Tribute

1.1. Tribute to Dr. Bruce Irvine from the Edwards School of Business presented by Daryl Lindsay Professor Emeritus, Department of Accounting, Edwards School of Business.

2. Agenda

- 2.1. Adoption of the Agenda
- 2.2. Council Motions
- 3. <u>Chair's Opening Remarks-</u> Dr. Marjorie Delbaere, Associate Dean Research, Graduate Programs and Faculty Relations, Edwards School of Business

4. Minutes

4.1. Approval of Minutes – January 25, 2024

5. Business Arising

5.1. Follow up to College of Graduate and Postdoctoral Candidate Assessment Changes

6. Academic Programs Committee (APC)

- 6.1. Request for Decision: Bachelor of Science in Dental Hygiene
- 6.2. Request for Decision: Termination Postgraduate Diploma in Aboriginal Agriculture and Land Management
- 6.3. Request for Decision: Changes to Admissions Requirements Master of Business Administration
- 6.4. Request for Decision: Master of Chemical Risk Assessment

7. Nomination Committee

7.1. Request for Decision: Council Committee Omnibus Nominations March 2024

8. <u>Reports</u>

- 8.1. President
- 8.2. Provost and Vice-President Academic
- 8.3. Graduate Students Association (GSA)
- 8.4. University of Saskatchewan Student's Union (USSU)

9. Other Business

10. Question Period

In addition to bringing forward questions during the course of a meeting, council members are also invited to submit questions on matters relevant to council in advance of a meeting. These questions can be sent to the Chair of Council directly or via the Governance Office (<u>delbaere@edwards.usask.ca</u>; <u>governance.office@usask.ca</u>). Whenever possible, the questions will be forwarded to the appropriate individual. Members submitting questions in advance will be invited to pose their question(s) during the course of the meeting.

11. Adjournment

Next Council meeting is April 18, 2024- please send regrets to governance.office@usask.ca

The deadline to submit motions to the Executive Committee for the April meeting is March 25, 2024. A full list of submission deadlines can be found <u>online</u>.

Zoom Link:

Join Zoom Meeting: https://usask-ca.zoom.us/j/97096503683?pwd=ZmZGR1F0WFh3d0xKOGFFczhBWnlrdz09

Join by Telephone: Local Saskatoon Zoom Dial-in Number: (639) 638-7474 Other Zoom Dial-in Numbers: <u>https://usask-ca.zoom.us/u/adesXGgntQ</u>

Join by Video Conferencing Device (SIP): 97096503683@zoomcrc.com

Meeting ID: 970 9650 3683 Passcode: 94458471 Telephone Passcode: 94458471



University Council Agenda Motions March 21, 2024

Academic Programs Committee

6.1 Request for Decision: Bachelor of Science in Dental Hygiene

<u>Motion:</u> It is recommended that Council approve Bachelor of Science in Dental Hygiene program, effective Fall 2024.

6.2 **Request for Decision**: Termination – Postgraduate Diploma in Aboriginal Agriculture and Land Management

<u>Motion:</u> It is recommended that Council approve the termination of the Postgraduate Diploma in Aboriginal Agriculture and Land Management, effective May 2025.

6.3 Request for Decision: Changes to Admissions Requirements – Master of Business Administration

<u>Motion:</u> It is recommended that Council approve changes to the Admissions Qualifications for the Master of Business Administration Program, effective the 2025-26 admissions cycle.

6.4 Request for Decision: Master of Chemical Risk Assessment

<u>Motion:</u> It is recommended that Council approve Master of Chemical Risk Assessment program, effective Fall 2024.

Nominations Committee

7.1 Request for Decision: Council Committee Omnibus Nominations March 2024

<u>Motion:</u> It is recommended that Council approve the slate of nominations effective March 21, 2024, as attached.



UNIVERSITY COUNCIL Meeting Minutes Thursday January 25, 2024 2:30-4:30pm ARTS 241 and Zoom

Call to Order

The meeting was called to order at 2:36 pm.

The Chair, Dr. Marjorie Delbaere, began with a Land Acknowledgement.

Chair reviewed zoom protocols.

No members of the media identified themselves.

The Chair reminded members there are no recordings of Council meetings.

1. Tribute

Dr. Paul Newton, Department Head of Educational Administration provided a tribute to Dr. Dennis Dibski from the College of Education.

2. Adoption of the agenda

2.1 Adoption of the Agenda

The agenda that was circulated was amended to remove the Governance Committee's Notice of Motion on Council Bylaw revisions. It was decided that further consultation within the committee was required, and the item will come back later in the term.

(Bell/Dobson): That the agenda be approved as amended.

CARRIED

3. Chair's Opening Remarks

Chair Delbaere welcomed everyone to 2024 and reminded members that there is no February meeting.

The Chair commented that PEC met on January 18th noting the discussion focused on Centre's. In particular, the Executive was interested in learning PEC's thoughts on the evaluation criteria for the current Centre work ahead. Work is to be done at the Centre's subcommittee and more information to come.

4. Minutes of the meeting of December 14, 2023

(Perepelkin/Card): That the minutes of December 14, 2023 be approved.

CARRIED. 2 Abstentions

5. Business Arising

5.1 Follow up to College of Graduate and Postdoctoral Candidate Assessment Changes

The Chair reported that Dr. Burshtyn was not able to attend the meeting. The changes regarding candidacy assessment made at CGPS Faculty Council were in alignment with Council Bylaws but we recognize that CGPS is a college that impacts most other units at USask and as such there might be different considerations with respect to bringing updates to council on academic program changes. More information will be shared at the March Council meeting.

5.2 Undergraduate Awards Policy Document with Changes

The document outlining the changes were included in the agenda package. The Chair noted that any further questions can be entertained during the item later in the meeting.

6. Planning and Priorities Committee (PPC)

6.1 Request for Decision: Establishment of the Department of Oncology and Disestablishment of the Division of Oncology

Dr. Vicki Squires, Chair of the Planning and Priorities Committee summarized the item, noting it was brought to Council as a Notice of Motion in December. The Division of Oncology has been in operation since 1977; however, with a new residency training program being developed, the division will need to transition into a department. Both the academic programs committee and the planning and priorities committee support the establishment of the Department of Oncology.

There were no questions.

Motion: (Squires/Lieverse) It is recommended that Council approve the establishment of the Department of Oncology in the College of Medicine, as outlined in the agenda material; and that, with its establishment, the Division of Oncology be disestablished.

CARRIED

7. Academic Programs Committee (APC)

Dr. Carolyn Augusta, member of the Academic Programs Committee presented the committee's items.

7.1 Request for Decision: Master of Clinical Pharmacy

The full proposal is in the package.

• This program will support the training of clinical pharmacy leaders, educators, and mentors in Saskatchewan by proving advanced clinical training and specialization in hospital practice

- This program will combine classroom learning with onsite experiential opportunities with health care providers
- Students entering the program will need to have a degree in pharmacy, and active license to practice in Saskatchewan, and evidence of established clinical practice
- Nine new courses were developed for this program

There were no questions.

Motion: (Augusta/Da Silva) It is recommended that Council approve the Master of Clinical Pharmacy Program, effective May 2024.

CARRIED. 1 Abstention

7.2 Request for Decision: Termination of the Certificate in Teaching English as a Second Language (CERTESL)

The full proposal is in the package.

- The College of Education is proposing the termination of the Certificate in Teaching English as a Second Language (CERTESL) program.
- CERTESL was moved from the Distance Education Unit to the Department of Curriculum Studies in the College of Education in October 2022
- The program is no longer financially viable given low enrolments and numerous online alternatives now available for students
- There are currently no students enrolled in CERTESL courses, though there are a number who have completed a variety of the courses needed for CERTESL. If any of the students who have completed part of the program seek to complete the program, they will be supported in finding online options

There were no questions.

Motion: (Augusta/Da Silva) It is recommended that Council approve the termination of the Certificate in Teaching English as a Second Language program, effective May 2024.

CARRIED. 1 Abstention

7.3 Item for Information: Academic Calendar 2024/25

- This was approved at APC on December 13, 2023
- The calendar was developed in consultation with deans and administrative units

Questions and concerns were raised about religious accommodations and the consultation with AES as well as the final exam schedule going late into December. Exams late in the month run into issues with the OPSCAN office being open and delays grading.

Registrar Russ Isinger noted that the office works closely with AES (Access, Equity Services) in regard to religious conflicts and will continue to do so. As for booking exams late into December, this is only done if absolutely needed.

Another member asked if consideration in the calendar planning is given for public and private school dates of when school is out. Mr. Isinger did note that there is an attempt to align as much as possible and there are several factors to consider.

7.4 Item for Information: Changes to the Master of Sustainability program

- This change was approved at APC on December 13, 2023
- With the program changes, the Master of Sustainability program will move from being a project-based program to being course-based
- This will better support student success in the program
- There will also be a number of course changes, restructuring a number of 1 and 2 credit unit courses to 3 credit unit courses, which will simplify program deliver.

7.5 Item for Information: Revisions to the Post-degree Certificate in English as an Additional Language program

- This change was approved at APC on January 10, 2024
- The changes will reduce the required credits for the program for 30 to 15 cu, as a number of the courses for the PDCEAL were part of the CERTESL program
- Teachers will still be able to access this program online and will be able to use the 15 cu certificate towards the required 30 credits needed for an Additional Qualification Certificate with the Saskatchewan Professional Teachers Regulatory Board

8. Nominations Committee

8.1 Request for Decision: Council Committee Chair Vacancies

Dr. Veronika Makarova, Chair of the Nominations Committee presented the item noting that two committee chairs had to step down for winter term.

There were no questions.

Motion (Makarova/Engler-Stringer) *It is recommended that Council approve the following appointments for the remainder of 2023-24, effective January 25, 2024:*

- Carolyn Augusta (Edwards School of Business) as the Chair of the Academic Programs Committee, and
- Jason Perepelkin (College of Pharmacy and Nutrition) as the Chair of the Scholarships and Awards Committee

CARRIED

9. Governance Committee

The Notice of Motion for Council Bylaw Revisions was withdrawn from the meeting.

10. Research Scholarly and Artistic Works Committee

Dr. Steven Rayan, Chair of Research Scholarly and Artistic Works committee presented introduced Dr. Baljit Singh, Vice-President Research

10.1 Item for Information: Mid-Year Update from Vice-President Research

Dr. Baljit Singh presented the mid-year update, highlighting the important work happening:

- USask continues to build on a long period of work in RSAW- balancing quality, quantity and impact
- University scholars have brought in 250 million in funding thus far which is equal to what was brough in last year. It is expected that USask will reach 300 million in funding dollars the 2023-2024.
- Bangabandhu-Pierre Elliott Trudeau Agriculture Technology Centre in Bangladesh received 54 million in funding from Bangladesh government; 10 million of which will come directly to USask
- Canada is now a member of <u>Horizon Europe</u>
- OVPR is creating early connections with new faculty members to ensure a smooth transition into the USask culture
- Positive outcomes from the Dean of CGPS sitting as a member on the Research Faculty Council
- Ongoing Indigenization efforts, including a Director of the Wanuskewin Institute that was recently approved by the President.
- Atim Maskikhiy-Dog Medicine Art Gallery Launch for the Wanuskewin Institute- an example of interdisciplinary work that is unique to USask and Wanuskewin.
 - Dr. Singh encouraged members to download <u>Dr. Jordan Woodsworth's</u> thesis from USask library
- OPUS is creating great enthusiasm around campus

11. Scholarships and Awards Committee

Dr. Jason Perepelkin, newly appointed Chair of Scholarships and Awards Committee presented the item.

10.1 Request for Decision: Undergraduate Awards Policy

Information is in the Council package. This policy is a revision to policy last approved by Council in 2012. The purpose of the policy is to provide direction and guidance to undergraduate award administrators across the University with respect to award adjudication.

Revisions to the policy include increasing bursary stack ability, policy changes to better support students losing need-based awards due to the discontinuation of their studies, and policy on how to include students with a non-binary gender identity in consideration for historically binary gender-based awards. There are other minor updates as well.

This policy was brought to Council December 14, 2023 as a Notice of Motion. Feedback resulted in changes as follows:

- 1. A revision to the explanation of how Terms of Reference work to tighten the language.
- 2. The removal of a section that indicated bursaries for Indigenous students would be paid out without money being held on students' accounts, as that turned out to be administratively not feasible.
- 3. An adjustment to the language around awards that have gender as an eligibility criterion.

Questions:

A member inquired about the note that students must be registered in a degree program. How do students gain awards if they are undeclared or in a certificate program? It was clarified that students who are undeclared are still in a degree program.

Clarity was sought on the gender diverse language in the Terms of Reference. This new language will only be required in NEW Terms of Reference, not legacy terms.

A member asked why courses taken in Spring and Summer are not counted towards a students average for awards purposes. Not all programs have the option of spring and summer courses; therefore, students who have the option may be privileged if they can take spring and summer classes and use those grades toward their average.

Motion: (Perepelkin/Boden) It is recommended that Council approve revisions to the Undergraduate Awards Policy effective immediately.

CARRIED 1 Opposed

12. Reports:

12.1 Report of the President

President Stoicheff commented on the collegial and focused conversations that are taking place at PEC.

The President thanked Baljit for the update and encourages members to reflect on the work of RSAW.

The President noted that 2024 promises to be quite a year worldwide where over 60 countries will be holding elections. President Stoicheff discussed how universities play a large role in democracy referencing the book "What Universities Owe Democracy" which discusses this indispensable role.

President Stoicheff mentioned the MP's who wrote letters to 25 University presidents asking them to respond to 5 questions on how their university would respond to calls for genocide. A response was sent in for USask and was received very favourably.

The President mentioned a few other items:

- The recent federal policy changes on incoming International undergraduate students
- Noted that USask has reached 400 million on the campaign.
- The inaugural Huskies Women of Influence Fundraising Breakfast where Vera Pezer will be honoured is on February 13th

- February is <u>Black History Month</u>, thanking the many people responsible for putting this together- formal launch is taking place on February 1st.
- Wanuskewin Institute started by USask faculty is now going forward for World Heritage Site status.

There were no questions.

12.2 Report of the Provost

Provost Airini highlighted a deep appreciation to 12 University Leaders highlighted at the end of the report. As well as noted, the terrific work ahead with student councils.

The Provost mentioned the two year cap on 364,000 international student visas noting that the intention behind the cap is to stabilize growth and aid in success for international students. Provost Airini also mentioned that incoming graduate students with master's degrees will soon be eligible for a 3-year work permit, which is a positive shift and will enable the transition out of study and into work. USask is committed to international student success and is currently working with the Government and Post Secondary partners on the full impact that the changes will have on USask.

Questions:

A member asked if consideration has been given to reopening admission to domestic undergraduate students to fill the gap. Provost Airini responded that within USask's current SEM (Strategic Enrolment Management) program, USask has the go ahead to grow to 29,000 students, currently around 26,000. Provost Airini noted that this is a question to work through as USask receives more details from the Government. There is confidence that USask will be able to find the way forward as we are currently at 9% of UG international students with goal of 10%. The Deputy Provost added that USask will be keeping a close watch on what is happening around other Canadian institutions as time goes on.

A member voiced concern that 95% of graduate students in Linguistics and Philosophy are international students and wondered if departments going to be penalized. Provost Airini noted that there is absolute clarity that the international caps are on undergraduate students and not graduate students.

A member asked if the search committee memberships will be reported to Council. Yes, through the governance committees.

A member asked about the outcomes and deliverables for SEM and ASR projects. The Associate Provost of Strategic Priorities noted that each of the task forces are all coming back through the governance channels and Terms of Reference will be brought to Council.

12.3 Report from the GSA

The report can be found in the agenda package.

Interim President Kayla Benoit introduced herself and addressed the removal of GSA President, noting the removal was done for the wellbeing of Graduate Students.

Kayla noted the Awards Gala is on Saturday April 27th encouraging members to attend and to recognize graduate students by nominating them for awards: <u>https://gsa.usask.ca/events/annual-awards.php#AwardNominations</u>

There were no questions.

12.4 **Report from the USSU**

The report can be found in the agenda package.

President Ishita Mann and VP Academic Elisabeth Bouman presented a fulsome report, noting that December was a busy month with a heavy focus on academic advisory given final exams. Ishita mentioned that over 75 instructors were nominated for the Teacher Excellence awards.

There were no questions.

13. Other business

There was no other business.

14. Question period

Pre-submitted Question:

A pre-submitted question was around the security of deferred exam request forms that are not online and that are accessible by the student requesting the deferred exam?

As context, some colleges process a student's request for a deferred final exam. If approved, the college submits a JIRA request to the instructor linked to an online form. This form is not visible or accessible by the student, and so the form would seem hard for a student to tamper with. Conversely, other colleges use an editable document that the student is asked to send directly to the instructor to complete. The student is also held accountable to collect the form from the instructor and submit it to the College. The instructor and college are not necessarily in contact. This process would seem rife for exploitation. E.g., forging an instructor's signature and/or course grade earned thus far, or editing the 'additional information' field offered to the instructor about a student's course performance.

Registrar Russ Isinger commented that there was an attempt to unify deferred and supplemental exam forms several years ago, but unfortunately was not successful given all the different internal College processes. The Registrar noted that his office is happy to work with bodies of Council to try again on standardization. Chair Debaere noted that this information will be passed along to TLARC for consideration.

A member mentioned difficulties with Room Scheduling noting their class location was changed in late December and they were not notified. The member commented that the explanations for why the switch happened do not make sense and were unsatisfactory.

15. Adjournment

(Urquhart): The meeting was properly adjourned at 4:16 pm.

UNIVERSITY COUNCIL

ACADEMIC PROGRAMS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY:	Carolyn Augusta, chair, Academic Programs Committee		
DATE OF MEETING: March 21, 2024			
SUBJECT:	Bachelor of Science in Dental Hygiene Program		
MOTION:	It is recommended that Council approve Bachelor of Science in Dental Hygiene program, effective Fall 2024.		

PURPOSE:

University Council has the authority to approve new degrees and degree-level programs.

CONTEXT AND BACKGROUND:

The College of Dentistry is proposing a new Bachelor of Science in Dental Hygiene program to expand its offerings in the realm of oral health science and to support training that will address gaps in the province. The program will take advantage of existing infrastructure in the College of Dentistry to take in 18 students per year, for a total for 54 students in the program at any one time. This program will be a direct-entry program that will reserve 10 of the 18 available seats for applicants from Saskatchewan.

The 3-year degree program will be delivered in person on the main USask campus and will utilize existing infrastructure, including simulation labs and training opportunities within the main clinic. The courses and clinics will be held during evening hours on weekdays to support students with other obligations during the day as well as to maximize access to lab and clinic space.

CONSULTATION:

This change was reviewed by the Faculty Council in the College of Dentistry on December 20, 2023 and they were supportive of the new program. The Academic Programs Committee reviewed the proposed changes at its January 24, 2024 meeting. The committee supported the proposal, noting that the planned delivery in evenings will help address possible space concerns and will ensure access to the program from a diverse student body. The committee voted to recommend that Council approve the program.

ATTACHMENTS:

1. Bachelor of Science in Dental Hygiene proposal



UNIVERSITY OF SASKATCHEWAN Governance Office E290 Administration Building 105 Administration Place Saskatoon, SK S7N 5A2 Canada Telephone: (306) 966-6253 <u>Email:</u> <u>governance.office@usask.ca</u> <u>academic_programs@usask.ca</u>

Proposal for New Programs or Curricular Changes

Title of proposal:

Degree(s): Bachelor of Science

Field(s) of Study: Dental Hygiene

Level(s) of Concentration: N/A

Option(s): N/A

Degree College: Dentistry

Contact person(s) (name, telephone, fax, e-mail): Dr. Walter Siqueira, Dean, 306-966-5122, walter.siqueira@usask.ca

Proposed date of implementation: August 2024 (Fall Term)

Proposal Document

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

Academic Justification:

- a. Describe why the program would be a valuable addition to the university from an academic programming perspective.
- b. Considering strategic objectives, specify how the new program fits the university signature areas and/or institutional plans and/or the college/school and/or department plans.
- c. Is there a particular student demographic this program targets, and if so, what is that target? (e.g., Indigenous, mature, international, returning)

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

Admissions:

The *Admission Framework* document must be reviewed to determine how an applicant will be considered for admission. There are several factors to consider when creating a new program. The Manager, Admissions and Transfer Credit, can assist in the development of the criteria. Information determined here should then be used to inform the completion of an Admission Template as found on https://programs.usask.ca/programs/admission-requirements.php

- a. What are the admissions requirements of this program high school subjects, secondary or post-secondary standing, minimum averages, English proficiency, and minimum scores on standardized tests?
- **b.** What are the selection criteria how will you rank and select applicants? For example, ranking by admission average, admission test scores, interview scores, departmental recommendations, auditions, portfolios, letters of reference, admission essays, and definition of essential abilities for professional practice?
- **c.** What are admission categories regular admission, special admission, and Indigenous equity admission?
- **d.** What are the **admission models** direct entry, non-direct entry, ranked competitive or cut-off average? Is a confirmation of admission required?
- **e.** Intake how many seats are required to be filled for first year and transfer students, reserved for Indigenous, Saskatchewan, out-of-province, and international students?
- **f.** What are the application process and timelines September or January intakes, online application, application and document deadlines, and scholarship deadlines to consider?
- **g.** Which office will manage the admission process TLSE, college, department, or a combination?
- Marketing and Promotion of New Program consideration needs to be given to a communications plan and marketing of the new program.
- *i.* Admissions Appeal what will this process be.
- j. Transfer Credit when will this be assessed and by which office?

Description of the program:

- a. What are the curricular objectives, and how are these accomplished?
- 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.
- c. Provide an overview of the curriculum mapping.
- d. Identify where the opportunities for synthesis, analysis, application, critical thinking, problemsolving are, and other relevant identifiers.
- e. Explain the comprehensive breadth of the program.
- f. Referring to the university "Learning Charter", explain how the learning pursuits are addressed and what degree attributes and skills will be acquired by graduates of the program.
- g. Describe how students can enter this program from other programs (program transferability).
- h. Specify the criteria that will be used to evaluate whether the program is a success within a specified timeframe
- *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.

Consultation:

- a. Describe how the program relates to existing programs in the department, in the college or school, and with other colleges. Establish where students from other programs may benefit from courses in this program. Does the proposed program lead into other programs offered at the university or elsewhere?
- 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.
- c. Proposals that involve courses or other resources from colleges outside the sponsoring unit should include evidence of consultation and approval. Please give special consideration to pre- and co-requisite requirements when including courses from other colleges.
- d. List other pertinent consultations and evidence of support, if applicable (e.g., professional associations, accreditation bodies, potential employers, etc.).

Budget:

The *Budgetary and Financial Implications Form* must be completed to determine the cost impact of the proposed program. Information about budget and financial implications appears in that form.

College Statement

Please provide here a statement from the College which contains the following:

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

Related Documentation

In the submission, please attach any related documentation which is relevant to this proposal, such as:

- Relevant sections of the College's/School's plan
- Accreditation review recommendations
- Letters of support if courses from colleges outside the sponsoring unit are required, please include letters of support for each.
- Memos of consultation
- External Agreements if the new program or major revision is dependent upon an external partnership or agreement, this must be completed and included.

Consultation Forms Attach the following forms, as required.

Required for all submissions:

- Consultation with the Registrar form (Note: this form will be completed by SIS during the Consultation with the Registrar meeting. Completion is based upon the proposal and the meeting discussion; no preliminary work from the college is required).
- Budget forms, including tuition.

- □ Complete Catalogue entry, if proposing a new program, or excerpt of existing program with proposed changes marked in red
 - Please include admission requirements, complete program of study, and all new, deleted or changed courses in the entry.
- Entry for marketing website: <u>admissions.usask.ca/programs/find-a-program</u> OR <u>gradprograms.usask.ca</u> as appropriate.
- Entry for the Tuition website: <u>students.usask.ca/money/tuition</u>

Required for all new courses:

□ New Course Proposal Form

<u>Required if resources needed</u>: Please consult the attached checklist below for a list of necessary forms to be completed and included in the application package.

Submission of Form:

Please submit all completed Proposal for Curricular Changes and other required forms to this email address: <u>academic_programs@usask.ca</u>

Academic Programs Approval Process Checklist of forms and consultations to be completed before submission of a *Proposal for New Programs or Curricular Changes* to Academic Programs Committee of Council

	Required Consultation/Office	Required Form (as	Date completed (if	Who did you meet
			not required, briefly explain why)	with
1	Consultation with other colleges re: impact or similar programs	N/A		
2	Financial Sustainability/Tuition Review	Budgetary and Financial Implications Worksheet	January 4, 2024	
3	Consultation with Manager, Admissions and Transfer Credit	Admissions Template	November 16, 2023	Karen Gauthier
4	Budget Consultation with Institutional Planning and Assessment	Budgetary and Financial Implications Worksheet	ICompleted	
5	Provost sign-off on Budgetary and Financial Implications Worksheet	Budgetary and Financial Implications Worksheet	Completed	
6	Secure College Faculty Council Approval	 Proposal for Academic or Curricular Change Form Completion of Physical Resource and Space Requirement Form Completion of Library Requirement Form Completion of ICT Requirement Form Completion of New Course Creation Form Completion of New Course Creation Form Completion of Completion of Catalogue Entry 	December 20, 2023, forms included in Appendices	
7	(For graduate programs) Secure College of Graduate and Postdoctoral Studies Approval	(As above)		
8	Consultation with Registrar	Consultation with the Registrar Form (completed during the consultation)	January 3, 2024	Registrarial Services, SIS

Updated August 2023

I. <u>Academic Justification</u>

The College of Dentistry is proposing to develop a Bachelor of Science in Dental Hygiene degree to expand its programming in the realm of oral health sciences so that it can continue to fill voids in the province's oral health system and become a site of training for the whole spectrum of oral health care professionals from the Certificate in Dental Assisting (DA), Bachelor of Science in Dental Therapy (DT), Doctor of Dental Medicine Degree (DMD) to advanced research in oral health through the M.Sc. and Ph.D. programs in Precision in Oral and Systemic Health.

The College of Dentistry believes that this new program will align itself with the University's goals as well as its own. This program will address Priorities 1, 2, 3 and 5 of the College of Dentistry's strategic plan (college-of-dentistry-strategic-plan-2025.pdf (usask.ca) by continuing the work towards becoming Canada's leader in Inclusive Community Care, expanding the College's programming and research capacity and output while also creating more spaces in oral health care professions for Indigenous students who, in turn, can go on to not only be mentors to future Indigenous health care professionals but be leaders within their communities in less than three calendar years.

This program will also align with the Government of Saskatchewan's *"Saskatchewan's Growth Plan: The Next Decade of Growth 2020-2030"* (<u>Saskatchewan's Growth Plan</u> | <u>Saskatchewan Budget</u>, <u>Planning and Reporting</u> | <u>Government of Saskatchewan</u>) by contributing to Chapter 1 *"Growing Saskatchewan's Population to 1.4 Million People by 2030"* and Chapter 5 *"Growing a Skilled Labour Force Through Education and Training"*.

In Chapter 1 of the report, the first topic is "Keeping Young People in Saskatchewan" and this program aims to do that by building capacity to train students who may have otherwise left the province for their training and built their professional lives in that location rather than returning home. The second topic, "Increasing and Retaining the Number of Skilled and Entrepreneurial New Canadians in Saskatchewan", is addressed by building on the college's success of the International Dental Degree Program and the newly set aside seats for international students in the Doctor of Dental Medicine program by having at least one seat available for an international student. With the number of open Dental Hygienists positions still high in the province and the higher wages that they can attract due to the demand combined with the lower cost of living here and tax credits for new graduates, the door is open for them to remain and build their lives here. With the changes in legislation, a Dental Hygienist can open their own dental hygiene practice and grow a small business in this province.

Initiatives found in Chapter 5, specifically "Developing an Agile and Integrated Education Training System", are met by this program's proposal to offer the entirety of the class and clinical work outside of regular business hours so that both students and patients can access training and care that isn't always found in the province. By increasing the number of training seats for Dental Hygiene, the college is also helping to ensure that there are people who will have the skills and experience to directly impact the economy and oral health of the people of Saskatchewan immediately upon graduation.

The college is looking to use this program, first and foremost, to address the shortage of dental professionals in the Province of Saskatchewan. As listed in *our Admissions Requirements* below, seats will be created utilizing the categories that already exist for Indigenous, mature and direct-entry students. Like our DA and DMD programs, a total of 20% of all seats will be reserved for Indigenous students.

The Province of Saskatchewan currently has only one program in Dental Hygiene and that is an Advanced Diploma in Dental Hygiene at Saskatchewan Polytechnic. This program accepts 26 students per year and utilizes their "Competitive" admissions process. For a program to be considered "Competitive" at Saskatchewan Polytechnic, the program must receive a number of qualified applications that exceeds the seat capacity of the program by 2.5 times. By this definition they are receiving at least 65 applications from qualified applicants and turning aside 39 potential Dental Hygienists for the province's oral health care needs.

Across Canada, there are 5 degree or degree completion programs in Dental Hygiene: University of Alberta, University of British Columbia, University of Manitoba, Dalhousie University and George Brown College. There are many more diploma options with 5 in British Columbia, 1 in Manitoba, 1 in New Brunswick, 1 in Nova Scotia, 18 in Ontario, 6 in Quebec (only 1 is English language) and the one in Saskatchewan at SaskPoly. With the mixture of diploma and degree options in existence, there are also different admission routes, either direct-entry or pre-dental hygiene requirements in an Arts and Science-type setting. In our province, SaskPoly utilizes a direct-entry route and the college also intends to use this route though with very different curriculum approaches: SaskPoly uses the first year of their program to focus on the basic arts and sciences whereas Dentistry proposes to utilize a "spiral curriculum" where knowledge and skills continue to build and overlap with each other as the student progresses from term to term and is the same model now employed in the Bachelor of Science in Dental Therapy program.

The College of Dentistry proposes to take advantage of both its infrastructure and the excess of fullyqualified students by creating a Bachelor of Science in Dental Hygiene that will take in 18 students per year for a total of 54 students maximum in the program at any one time. Most of these are students from Saskatchewan that may otherwise leave the province to receive training as a Registered Dental Hygienist and potentially not return to Saskatchewan to practice.

The College of Dentistry has the ambition to become the only dental school in Canada that serves the entire dental team and through adding a Bachelor of Science in Dental Hygiene, it achieves several goals for the College of Dentistry, among them expanding our direct-entry Bachelor's-level programming for the students of Saskatchewan, creating more opportunities for teaching and research within the College and allowing both the College and University to *"Be What the World Needs"* when it comes to full-spectrum oral health care. Adding this program would make the College of Dentistry at USask the only dental school in Canada with programs in Dental Assisting, Dental Hygiene, Dental Therapy and Dental Medicine.

II. <u>Admissions</u>

Like the college's new Bachelor of Science in Dental Therapy, the proposed Bachelor of Science in Dental Hygiene will use a direct-entry admissions model that will use the ranked competitive form of ranking applications for the Admissions Committee's review and consideration to fill the 18 spots available every year. The required average on the courses used to calculate the admission average is a minimum only and will not guarantee admission to the program; the college anticipates that it will receive far more

qualified applications than it has seats for, and competition will require a much higher than advertised average for successful admission to the program. As mentioned earlier in this proposal, the only other program in Saskatchewan, that of SaskPoly, receives more qualified applicants than it can admit and the college expects that many of these students will also choose to apply to this new program.

The single yearly intake of 18 students will be for the Fall Term only. Like all the other college programs, this one will be completely structured and there will be no part-time options available nor will there be any opportunities for students to transfer into the program from any other Dental Hygiene program in Canada. With no transfer students, there will be no evaluation of transfer credit into the program.

The proposed breakdown of the 18 available seats will be as follows:

- 1 International
- 7 Out of Province
- 10 Saskatchewan

The application process will include an online application through Recruit that will be coordinated through the College of Dentistry's Admissions Coordinator. As is currently the case, the Admissions Coordinator will continue to maintain an excellent collegial relationship with the USask Recruitment, Admissions and Transfer Credit Office to ensure timely and accurate evaluation of applications and documents. The application will need to include all the required documents and be accompanied by an application fee of \$165. Of note is that the College of Dentistry does not allow one application for multiple programs, students must submit a separate application and fee for <u>each</u> program that they apply for.

The anticipated application and document deadlines are as follows:

- Application to open March 1st
- Application to close April 15th
- Preliminary document deadline of May 1st
- Conditional offers to be sent out by June 30th
- Final document deadline of August 1st

The College of Dentistry has its own Communications Officer and will employ that position to create new communications and recruitment material for this program as well as updating the college's other program information to create consistency and harmony with the information being provided to all partners and potential students. New material that is consistent with the USask branding and other efforts will be produced for this purpose. The Academic Dean's Office already has established relationships with Recruitment, Admissions and Transfer Credit and will be sure to use those channels to distribute all information to USask's external partners and to students through recruitment events.

Bachelor of Science in Dental Hygiene

Admission Qualifications

Regular Admission – High School (less than 18 credit units of transferable post-secondary)

- Grade 12 standing or equivalent.
- ELA A30 and B30; Biology 30, Chemistry 30, Foundations of Math 30 or Pre-calculus; one elective from social sciences/natural sciences or humanities at the 30 level (no deficiencies allowed) or equivalents.
- Minimum average of 75% on five subject high school average.
- Proficiency in English.

Regular Admission – post-secondary (18 credit units or more transferable post-secondary)

- Minimum average of 60% on 18 or more transferable credit units or the cumulative weighted average from a recognized and/or accredited post-secondary institution; average calculated on all attempted courses (without breaking up an academic session) which are transferable to the University of Saskatchewan.
- ELA A30 and B30; Biology 30, Chemistry 30, Foundations of Math 30 or Pre-calculus; one elective from social sciences/natural sciences or humanites at the 30 level (no deficiencies allowed) or equivalents.
- Proficiency in English.

Special Mature Admission

- Proof of age (21 or older).
- A written submission demonstrating capacity to undertake university-level studies.
- Less than 18 credit units of transferable post-secondary coursework.
- Transcripts of any secondary or post-secondary coursework.
- Resume.
- Proficiency in English.

Selection Criteria

- Regular Admission:
 - Academic average 80% weighting (Average is calculated using five high school subjects or on 18 or more transferable credit units)
 - Written Statement 20% weighting
- Special Mature Admission: Special admission package 100% weighting
 - Applicants are admitted at the discretion of the college. The admission decision is based on the applicant's written submission and demonstrated academic potential.

Categories of Applicants

Saskatchewan Residents

To be eligible as a Saskatchewan resident, applicants must have resided in Saskatchewan for at least FOUR years immediately prior to September 1 of the year admission is being sought. For 2024–2025, applicants must have resided in Saskatchewan since September 1, 2020. Applicants who have left the province, but previously lived in Saskatchewan for an accumulated period of 15 years (permanent residency), will be considered residents. Applicants who have previously lived in Saskatchewan for an accumulated period of less than 15 years and who do not qualify under the four-year requirement will receive credit of one year toward the four-year requirement for every four years of residency in the province. There are NO EXCEPTIONS to the four-year Saskatchewan residency rule.

In order to support a claim as a resident of Saskatchewan, the following proof and circumstances will be taken into account:

- **Date of issue** of your Saskatchewan Health Card1 **AND** either the date of issue of your Saskatchewan Drivers' License **OR** Saskatchewan Income Tax Forms confirming taxes paid in Saskatchewan.
- Applicants who have completed four years of full-time study at a Saskatchewan post-secondary institution immediately prior to the year admission is being sought are considered Saskatchewan residents. Official transcripts must be submitted by the document deadline to support this claim.
- Reasons for any break in continuity of residence, which includes attendance at an out-ofprovince educational institution, summer employment where applicable and any other reason deemed to be relevant
- Saskatchewan high school transcript (if you are NOT currently registered at the University of Saskatchewan) or

• Resident of the Yukon, Northwest or Nunavut Territories.

1. If the date of issue of your Saskatchewan Health Card is newer than the original date of issue, a letter from Saskatchewan Health confirming the date of issue is required.

2. If the date of issue of your Saskatchewan Driver's License is newer than the original date of issue, a Drivers Abstract is required.

Canadian Applicants

Regular Admission

Admission is based on successful completion of secondary level standing with a minimum overall average of 75% in the required subjects; or admission is based on the successful completion of at least 18 credit units of transferable university-level coursework at a recognized and/or accredited post-secondary institution, with an average of at least 60%.

Special (Mature) Admission

Special (Mature) Admission is available to applicants who do not qualify for Regular Admission. Applicants must be 21 years of age or older by the first day of classes, be entering their first year of study, and have successfully completed less than 18 credit units of transferable university-level coursework. Applicants must submit a special admission package including proof of age, a written request for Special (Mature) Admission that demonstrates reasonable probability of academic success and a summary of work and personal experience since leaving school. Academic transcripts must be submitted if any Grade 12 or post-secondary courses have been completed.

Indigenous Specific Seats

This program has 4 seats designated for Indigenous applicants. Verification of Indigenous Membership/Citizenship at the University of Saskatchewan is led and determined by the <u>deybwewin</u> <u>taapwaywin</u> <u>tapewin: Indigenous Truth policy</u> and Standing Committee in accordance with the processes developed to enact the policy. <u>Verification of Indigenous Membership/Citizenship with</u> <u>documentation</u> is a condition of acceptance for this program. Applicants wishing to apply in this category must self-declare on the application for admission.

International Applicants

Regular Admission

Admission is based on successful completion of secondary level standing with a minimum overall average of 75% in the required subjects; or admission is based on the successful completion of at least 18 credit units of transferable university-level coursework at a recognized and/or accredited post-secondary institution, with an average of at least 60%.

III. Description of the program:

First and foremost, the curricular objective of this program is to educate Dental Hygiene students to fill the ever-growing need for quality Dental Hygienists in the Province of Saskatchewan. As with all our programs, the college is dedicated to using its accumulation of knowledge and experience in oral health care to expand the education and delivery of high-quality oral health care graduates from accredited programs that will provide a positive contribution to the overall health care of the people of the province and beyond. Due to the unique curriculum outlined below, this program will not be accepting transfer students from other Dental Hygiene programs no matter the stage of progression achieved by the potential student at that point; all incoming students will be expected to complete all three years of the curriculum in this degree program at USask.

The development of the courses was grounded in the accreditation requirements of the Commission on Dental Accreditation of Canada (CDAC) (<u>https://www.cda-</u>

<u>adc.ca/cdacweb/ files/2022/Dental Hygiene Program Requirements.pdf</u>) and the recently published version of the *Entry-to-Practice Canadian Competencies for Dental Hygienists* (https://www.cdho.org/docs/default-source/pdfs/standards-of-

practice/epccodh_fdhrc_november_2021.pdf) The curriculum is reflective of current 3-year dental hygiene programs across Canada. However, this program is unique in that it is the first 3-year baccalaureate program in Canada and the first program scheduled during evenings. Current Canadian dental hygiene programs vary from 3-year diploma and advanced diploma programs to 4-year baccalaureate degree programs with one outlier of a 2-year diploma program implemented in New Brunswick.

The Bachelor of Science in Dental Hygiene will be delivered in a traditional format, in-person and oncampus in the College of Dentistry's main building. The curriculum will be delivered through a combination of didactic instruction, student discovery, pre-clinical simulation within the traditional preclinical environment and with the college's new haptic simulators and authentic clinical experiences in the college's main clinic. Of note is that the passing grade for this program will remain consistent with those for the DMD and BSc DT programs at 60%; only the non-degree level Dental Assisting program allows a passing grade of 50%.

#	Course Name	Credits	Comments			
Year 1 Term 1						
DEHY 101	Dental Hygiene Theory & Science I	2				
DEHY 102	Health Sciences I	3				
DEHY 103	Oral Health Sciences I	3	Pre-clinical			
DEHY 104	Behavioural Sciences I	3				
DETH 105	General Anatomy & Physiology I	3				
DEHY 106	Principles & Practice in Dentistry	3				
DENT 388	Infection Control in Dentistry	3				
DEHY 108	Dental Hygiene Practice	3	Pre-clinical			
	Total Credits	23				
Year 1 Term 2						
DEHY 111	Dental Hygiene Theory & Science II	3				
DEHY 112	Health Sciences II	3				
DEHY 113	Oral Health Sciences II	3	Pre-clinical			
DEHY 114	Behavioural Sciences II	3				

DETH 115	General Anatomy & Physiology II	3	
DEHY 116	Professional Communication	2	
DEHY 117	Indigenous Health & Wellness	1	
DEHY 118	Dental Hygiene Practice	3	Pre-clinical
	Total Credits	20	
Year 2 Ter	rm 1		•
DEHY 201	Dental Hygiene Theory & Science III	3	
DEHY 202	Health Sciences III	3	
DEHY 203	Oral Health Sciences III	3	Clinical
DEHY 204	Community Practice I	3	
DEHY 208	Dental Hygiene Practice	3	Clinical
	Total Credits	15	
Year 2 Ter	rm 2		
DEHY 211	Dental Hygiene Theory & Science IV	3	
DEHY 212	Health Sciences IV	3	
DEHY 213	Oral Health Sciences IV	3	Clinical
DEHY 214	Community Practice II	3	
DEHY 218	Dental Hygiene Practice	3	Clinical
	Total Credits	15	
Year 3 Ter	'm 1		
DEHY 301	Dental Hygiene Theory & Science V	3	Dental Specialty Course
DEHY 302	Health Sciences V	3	
DETH 303	Oral Health Sciences V	3	Clinical
DEHY 304	Community Practice III	3	
DEHY 308	Dental Hygiene Practice	3	Clinical
	Total Credits	15	
#	Course Name	Credits	
Year 3 Ter	rm 2		
DEHY 311	Dental Hygiene Theory & Science VI	3	
DEHY 312	Health Sciences VI	3	
DETH 313	Oral Health Sciences VI	3	Clinical
DEHY 314	Community Practice IV	3	
DEHY 318	Dental Hygiene Practice	3	Clinical
	Total Credits	15	
	Total Degree Credits	103	

The BSc – Dental Hygiene program is planned to provide many opportunities for higher-level development in the cognitive domain. Unlike our new BSc – Dental Therapy, this program is envisioned to occur in 6 terms over a three-year period, utilizing the evening times where the clinic is not used for other programming purposes. There are also extensive opportunities for higher level experience and development in the affective and psychomotor domains. Sequencing of the educational program is planned using a 'spiraling curriculum' model rather than using the traditional offering of a large number of discipline-specific courses. Under the Spiraling Curriculum model, each Term in the program is comprised of a core of four recurring courses of increasing depth and complexity as students progress forward in the program (Dental Hygiene Sciences, Health Sciences, Oral Health Sciences, and Dental Hygiene Practice). Each subsequent iteration of each course in the ensuing Term builds upon the knowledge, attitudes, and abilities attained in the previous course. In addition to these four Core Courses, students in Terms 1 and 2 will participate in two-term spiral

model. As students progress from term-1 towards term-5, the educational experiences and expectations progress from lower towards higher levels of thinking and ability. In the cognitive domain, Year 1, terms 1 and 2 mostly provide learning opportunities in the knowledge, comprehension and initial application levels. By Year 3, terms 3 and 4, learning opportunities shift towards higher levels emphasizing comprehension, application and analysis. By Year 3, terms 5 and 6, students are immersed in authentic professional healthcare practice where they are required to routinely demonstrate the lower cognitive abilities on a daily basis, and are given many educational opportunities at the application, problem-solving, synthesis and evaluation levels.

For example, students must demonstrate appropriate levels of knowledge acquisition and preclinical simulation experience in the areas of preventative dentistry in Year 1, terms 1 and 2, as reflected by the following knowledge and comprehension level learning objective:

Assessing the condition of the head and neck region, your teeth and oral tissues.

The Dental Hygiene students must then apply these skills in the dental clinic setting in the remaining 2 years, terms 3 to 6 with typical dental patients, as reflected by the following application and analysis level learning objective:

Manage patient anxiety while preparing a debridement.

In the latter portions of their program, the students are rostered into on-campus comprehensive-care clinics serving a wider variety of patients with more complex needs. In these clinics they must modify the typical approach to preventative oral health care to meet challenging clinical and patient situations, while ensuring that they meet the foundational principles of preventative dentistry. This is reflected in the following synthesis level learning objective:

Develop treatment options based on the individual's values, needs, beliefs and abilities.

Similarly, instruction and student experience in the Affective domain ensure student progress to the Valuing and Organizing levels.

The comprehensive breadth of the program encompasses the knowledge, attitude, and skill competencies required to meet the scope of practice expectations of the Saskatchewan Dental Hygienists' Association.

With this breadth, graduates of the program will be eligible to sit the National Board examinations in Dental Hygiene, and upon successful completion, will be eligible for Registration and Licensure in Saskatchewan and other Canadian jurisdictions, and to subsequently enter Dental Hygiene practice in Canadian communities as well as other locations.

This three-year, six-semester, Baccalaureate program is a course of studies leading to a career in an oral healthcare profession. All five of the USask learning goals are addressed to one degree or another.

<u>Discovery Goals</u>: The curriculum is delivered using a combination of didactic lecture, self-directed on-line learning, group work, preclinical simulation and clinical experience. Students are trained using a 'discovery approach' that facilitates a zest for life-long learning. Students are also required to participate in the dental care for complex clinical cases (i.e., severe dental disease in an anxious 2-year-old child) where intellectual flexibility is fostered.

<u>Knowledge Goals</u>: The comprehensive breadth of the program encompasses the knowledge, attitude, and skill competencies required by Accreditation Canada. With this breadth, graduates of the program will be eligible to sit National Dental Hygiene Certification Board Exam or the NDHCBE. This provides external validation that the program meets knowledge goals.

Integrity Goals:

This BSc – Dental Hygiene program is a professional program that provides instruction in, models, and requires students to act with professionalism and integrity. Graduates must demonstrate that they understand and consistently practice professional and ethical integrity to graduate.

Skills Goals:

All Dental Hygiene students must successfully complete courses which include extensive instruction and experience in interpersonal and therapeutic communication, including authentic clinical experience. Students must demonstrate competency before graduation.

Citizenship Goals:

The proposed BSc – Dental Hygiene program provides students with the opportunity to participate in student leadership roles within College of Dentistry management infrastructure. Diversity training and opportunities to serve disadvantaged people and communities are mandatory, as are opportunities to volunteer further to support these populations (i.e., Direct Dental, the College of Dentistry student-led dental clinic).

All Dental Hygiene programs in Canada are accredited through the Commission on Dental Accreditation of Canada and it is through this body that the college will seek accreditation for the new Bachelor of Science in Dental Hygiene. This is the same body that the college's Doctor of Dental Medicine (D.M.D.) and Certificate in Dental Assisting (C.D.A.) are accredited through so the college is very well aware of the accreditation requirements and processes set forth by this organization. The college has the advantage of having a past Content Expert for the Site Visit Team, a sub-committee of CDAC, on its faculty currently serving as the Interim Associate Dean, Academic position.

IV. Consultation

A program in Dental Hygiene will allow the College of Dentistry to fill almost the entire spectrum of oral health care practitioner requirements for province by having the Certificate in Dental Assisting, Bachelor of Science in Dental Therapy, Doctor of Dental Medicine and now the Bachelor of Science in Dental Hygiene. The college would be training an entire dental health care team in one place and prepare every one of our students for the teamwork they will experience after graduation in the profession of their choice. All students will work together in the comprehensive care clinics at various times during the academic year gaining invaluable experience from each other about the various dental health care professions and how they work together as an oral health care team to provide exceptional quality care to patients. The USask College of Dentistry will be the only dental school in Canada that will have all these programs training together in one clinical facility.

As the only College of Dentistry at USask and in the Province of Saskatchewan with the unique programs and curricula that entails, the college did not formally consult with other units on campus as it is very confident that no other units will be affected; the unique curriculum proposed for this program will not draw students from other units and programs to take its classes, it will not compete with any other program or unit for enrolment and will not require space in other program or unit courses as part of its curriculum. Further, with the program occurring outside of regular hours, the college's own facilities will be more than sufficient to handle all didactic, pre-, and clinical instruction necessary to deliver it. This will allow the college to utilize its space and facilities more efficiently and expand its patient pool, providing more hours for those who cannot access dental care during regular office hours to do so.

Externally, the college consulted with the College of Dental Surgeons of Saskatchewan, the Saskatchewan Dental Hygienists' Association and the Saskatchewan Dental Assistants' Association to help determine whether there is enough slack in the supply of Dental Hygienists in the Province of Saskatchewan to warrant an additional program and those consultations led the college to believe there is not only slack in the supply in Saskatchewan, but Canada as a whole. In addition, the college engaged the Registrar of the Saskatchewan Dental Hygienists Association as a member of its Dental Hygiene Working Group that helped to develop the program.

V. Conclusion

The College of Dentistry strongly encourages the Academic Programs Committee to consider all the benefits to be accrued through the approval of the proposed Bachelor of Science in Dental Therapy program to USask, the city and the province. The graduates from this program will be well-trained oral health care professionals in all communities in this province that contribute in so many ways.

This program meets criteria found in the growth plans of the College of Dentistry, USask, the Province of Saskatchewan and the country of Canada. It provides high-quality training in health care, competent professionals who will stay and contribute to the economy at all levels and will work towards alleviating the shortage of a sorely needed member of an inter-allied health care professional team. Only the College of Dentistry can provide the facilities, training and research opportunities in oral health care in the Province of Saskatchewan. With the generous support of both USask and the Government of Saskatchewan, the college's main clinic is receiving a well-deserved renovation to help expand all three of these areas to meet the needs of local, provincial and national levels of government and the oral health care requirements of those populations. The USask College of Dentistry will become the only school of dentistry in Canada that will have the full spectrum of professional undergraduate oral health care training and service supply. The profile of the college has risen dramatically in the last few years and the addition of a program such as this, along with the research and delivery of care options that it can provide, will help to propel it even further.

Appendices for Bachelor of Science in Dental Therapy Program Proposal:

- Appendix 1.0 Statement from the College
- Appendix 2.0 Letters of Support
 - 2.a. Saskatchewan Dental Hygienists' Association
 - 2.b. Saskatchewan Dental Assistants' Association
 - 2.c. College of Dental Surgeons of Saskatchewan

- Appendix 3.0 Space Request Form
- Appendix 4.0 Library Consultation Form
- Appendix 5.0 ICT Requirements Form
- Appendix 6.0 New Course Proposal Forms
- Appendix 7.0 Proposed Catalogue Entry



December 14, 2023

Chair, Academic Programs Committee University of Saskatchewan

Dear Chair,

The College of Dentistry strongly supports the establishment of a Bachelor of Science in Dental Hygiene (BSc-Dental Hygiene) and recommends that the proposal move forward. This program will be a six-term program over three academic years that will prepare graduates to work as Dental Hygienists in a dental office setting. Program graduates will be eligible to write the National Dental Hygiene Board Examinations and, upon obtaining a passing grade in this exam, be eligible to register as a Registered Dental Hygienist in the Province of Saskatchewan and other jurisdictions in Canada. Dental Hygienists focus on preventative oral health care and work with other health professionals to provide optimum oral health care to their patients.

While there are other degree options in Dental Hygiene in Canada, this program will be unique in a few ways, the first of which is that this program will occur outside of regular class and working hours. Classes and clinics will be set for between 5:00 and 10:00pm on weekday evenings to help support students who have other obligations during the day and allow the college to serve patients who cannot attend clinic during regular operating hours which, in turn, allows the clinic to expand its patient pool for outreach and research opportunities.

With the population of the Province of Saskatchewan projected to continue to increase, the limited number of oral health practitioners will be under increasing pressure to continue to provide quality care to the patients of the province. The proposal for a Bachelor of Science in Dental Hygiene has received unanimous support from the College of Dental Surgeons of Saskatchewan, the Saskatchewan Dental Hygienists' Association and the Saskatchewan Dental Assistants' Association. As the support letter from the Saskatchewan Dental Hygienists' Association states:

"The introduction of a second provincial Dental Hygiene program could significantly assist in attracting and retaining oral health professionals in Saskatchewan. Increasing the number of well-trained and passionate dental hygienists in Saskatchewan has the potential to enhance access to oral health services and contribute to the overall health of our residents."

According to a voluntary survey of its members, the Canadian Dental Hygienists Association states there is a national unemployment average of less than 1% and Saskatchewan respondents reporting a mean hourly provincial wage of \$51.32; as the only full-line oral health care training centre in Saskatchewan, the College of Dentistry is well-placed to expand its programming and continue to provide quality oral health care graduates to serve the communities of this province and beyond.



With the College of Dentistry's main clinic receiving the attention it desperately requires in the form of a renovation, it is an optimum time to add this program to the college's offerings as the addition of this program would make the USask College of Dentistry the only dental school in Canada to offer Dental Assisting, Dental Hygiene, Dental Therapy and Dental Medicine under one roof. This will also mean that the graduates of our programs will be the only ones in Canada to receive this full interprofessional experience as part of their professional training, further raising the college's national profile.

The five strategic priorities of the college call for it to become a leader in inclusive care, educational programming, research, revitalization and enhancement and the aspirations of Indigenous people and providing another avenue for compassionate, well-trained and educated oral health professionals to take their knowledge and training out into our communities benefits everyone.

Thank you,

Walter Siqueira

Dr. Walter L. Siqueira, DDS, MBA, PhD, FCAHS Dean and Professor, College of Dentistry



Saskatchewan Dental Hygienists' Association

Unit 320 – 350 3rd Ave N Saskatoon SK S7K 6G7 Office: 306-931-9286 Email: registrar@sdha.ca

August 18, 2023

Dear Dr. Walter L Siqueira,

On behalf of the Saskatchewan Dental Hygienists' Association (SDHA), I want to express our support for establishing a Dental Hygiene Program at the University of Saskatchewan, College of Dentistry, in 2024. As Registrar/CEO of the SDHA, I understand introducing this program will provide numerous benefits to Saskatchewan.

I would like to emphasize the importance of accreditation. Accreditation provides assurance to dental hygiene regulators across Canada that standards and requirements of the program have been achieved. Recognition of dental hygiene programs by the SDHA depends upon the achievement of accreditation from the Commission of Dental Accreditation of Canada (CDAC). Therefore, pending the accreditation status of the proposed program, the SDHA would be delighted to formally accept applicants from the College of Dentistry Dental Hygiene Program.

In addition, it is crucial that dental hygiene programs establish and maintain eligibility for their graduates to write the national board exam offered by the Federation of Dental Hygiene Regulators of Canada. The national board exam serves as a benchmark for assessing entry to practice competency and is a requirement for licensure across Canada (excluding Quebec).

The introduction of a second provincial Dental Hygiene program could significantly assist in attracting and retaining oral health professionals in Saskatchewan. Increasing the number of well-trained and passionate dental hygienists in Saskatchewan has the potential to enhance access to oral health services and contribute to the overall health of our residents.

In conclusion, the SDHA supports the University of Saskatchewan College of Dentistry in efforts to establish a Dental Hygiene Program. I commend the commitment to achieving accreditation, and vision of producing eligible applicants to the Saskatchewan Dental Hygienists' Association.

Thank you for considering our support. Sincerely,

Stam

Shelby Hamm, RDH Registrar/CEO

cc: Stacie Beadle, RDH SDHA President



ASKATCHEWAN DENTAL ASSISTANTS' ASSOCIATION

August 31, 2023

University of Saskatchewan College of Dentistry Health Sciences Building, A-wing, Room GA10.11 HSc 105 Wiggins Road, Saskatoon, SK S7N 5E5

To Whom it May Concern:

The Saskatchewan Dental Assistants' Association supports the development of a Dental Hygiene program at the University of Saskatchewan.

While SDAA has not been involved in the planning or design process, we support the notion of a Saskatchewan based degree program in Dental Hygiene. Our understanding is this program will allow additional interaction among the students in the existing Dental Assisting program with a greater complement of oral health care professionals, thereby enriching the educational experience for Dental Assisting students as well.

Thank you for continuing to support the education of oral health care professionals in Saskatchewan.

Sincerely,

Byinginth

Brenda Yungwirth, BComm, MHA, CHE Executive Director / Registrar Saskatchewan Dental Assistants' Association

cc. Council



December 5, 2023

College of Dentistry University of Saskatchewan 105 Wiggins Rd, Saskatoon, SK S7N 5E4

Dear Dr. Walter Siqueira,

The College of Dental Surgeons of Saskatchewan (CDSS) endorses the College of Dentistry's proposal to establish a Dental Hygiene program at the University of Saskatchewan, marking a pivotal moment for the Dental Hygiene profession in Saskatchewan. The aging Dental Hygiene workforce in Saskatchewan necessitates the creation of a program to prepare the next generation of dental hygienists; failure to do so may result in an ongoing critical shortage of these professionals in the coming years. Moreover, the continued growth of Saskatchewan's population further accentuates the demand for dental services. The CDSS's vision centers on the safe and effective service to the public, making our endorsement of this proposal a natural choice.

We believe that the graduates of this program will significantly contribute to improving access to oral health care for the residents of Saskatchewan. We extend our best wishes to the College of Dentistry for the successful securing of funding, enabling the new generation of Dental Hygienists to embark on their journey, benefiting Saskatchewan.

Sincerely,

Dr. Derek Thiessen President


UNIVERSITY OF SASKATCHEWAN

Physical Resource & Space Requirements for New and Revised Academic Programs

This form is to be completed by the faculty member responsible for the program proposal in consultation with Registrarial Services and the Division of Facilities Management. Contact the Senior Coordinator of Scheduling, Registrarial Services (#4570) or Facilities Planning and Development (#4574) for assistance.

Attach the completed form to the Consultation with the Registrar form prior to submission to the Academic Programs Committee. Additional comments may be attached if required.

Nam	e of	program			
1.0	Spa	ce and Renovat	ions		
	Does	s the new/revised	program require space resources in addition to the college/department's present		
1.1	spac	e allocation?			
	No	Х	Skip to question 1.3		
	Yes		Describe below		
	Туре	of space			
	Amo	unt of space			
	Occupants				
	Area	or capacity			
	Spec	cial requirements			

e.g. Fume hoods, cold rooms, A/C etc.

Some examples of types of space are: classroom, office (faculty, staff, graduate student), laboratory (teaching, research), workshop, studio, rehearsal room, field plot, animal facilities, etc.

1.2 Is the college/department aware of space outside of its resources which can accommodate needs?

INO	Skip to question 1.3
Yes	Describe below

1.3 Does the new/revised program require renovations to the college/department's current space?

Х	Skip to Question 1.3				
	Describe Below				
of renovations					
ns					
Present use					
Proposed use					
	X of renovations ns ent use osed use				

Note - including special installations, e.g. fume hoods

1.4 Has a Project Request form been submitted to Facilities Management for above additions or renos?

No	
Yes	Please attach a copy of the form.

1.5	1.5 Can development of any of the proposed additions or renovations be phased or completed in stages?				
-	No				
	Yes		Please attach a copy providing timeframe and costs for each stage		

2.0	Equipment							
2.1	Does	Does the new/revised program require additional equipment or upgrades to current equipment?						
	No	No X Yes Describe						
			· ·					
	Equi	pment require	d					
	Quai	ntity required						
	Estimated unit cost							
	Estin	nated total cos	st					

Note - whether the installation of equipment will require additional space or renovations, or if there are special electrical, cooling, ventilation, plumbing, etc. requirements.

3.0) Funding							
3.1	Are college/dept funds available for the required new space, renovations or equipment?							
	Initia	I costs						
	No Yes							
	Ong	oing operating/mai	ntenanc	e costs?				
	No		Yes	X				
3.2	Are f reno	funds avaialable fro vations, or equipm	om non- ent?	base budget/external sources towards the cost of any of the new space,				
	Initia	l costs						
	No		Yes	Х				
	Ong	oing operating/mai	ntenanc	e costs?				
	No	Х	Yes					
3.3	Will	there be a request	to the C	capital Planning Committee for capital funds to accommodate the program?				
	No	Х	Yes					
4.0	Add	litional commen	ts					
	If relevant, please comment on issues such as adequacy of existing physical resources for delivering the							
4.1	proposed program, the feasibility of proposed additions or renovations, sources as funding, etc.							

Associate Registrar

Date



Library Requirements for New Programs and Major Revisions

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

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

1. Proposal Identification

Full name of program: Bachelor of Science in Dental Therapy

Short form (degree abbreviation): BSc (DT)

Sponsoring Department/College: College of Dentistry

Degree Level: Undergraduate; Graduate:

- 2. Library Resources
 - 2.1 Resources are/will be located mainly in the Health Sciences Library
 - 2.2 Comment on the adequacy of the current level of Library acquisitions in support of this discipline.

The University of Saskatchewan Library currently supports a Doctor of Dental Medicine program. As such, the Library collects in the areas of oral histology and embryology, anatomy and physiology, dental materials, dental morphology, oral radiology, microbiology, immunology and physiological, orthodontics, etc. With the addition of the Dental Assisting Program, we also collect in the area of dental hygiene and dental assisting. The proposed Dental Therapy program is well supported by the collection which includes material on "operative, pediatric, endodontic, periodontic and oral surgery clinical care, along with preventive treatment and health education"¹.

- 2.3 Specify serial titles that are core to this program. Journal of Dental Research, Journal of Periodontology, Canadian Journal of Dental Hygiene, Journal of Dental Hygiene, The Dental Assistant: Journal of the American Dental Assistants Association, Journal of Dental Education, International Journal of Dental Hygiene
- 2.4 What access is required to resources held elsewhere? (Identify additional costs for access e.g. networking of databases, consortial access to databases, document delivery options). None.
- 2.5 Will any resource re-allocation within the broad discipline be necessary to support this new program? No.

¹ https://admissions.usask.ca/dental-therapy.php#About

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

The U of S Library has a librarian position responsible for the College of Dentistry and Dental Assisting. It would be appropriate to assign responsibility for this new program to that librarian. Recruitment for this position is underway.

- 3. Additional Library Resources Required
 - 3.1 What new subject areas of acquisition are needed to meet program requirements? None.
 - 3.2 What new electronic resources/databases are required? None.
 - 3.3 Are there new/additional library technology requirements necessary to support this program? No.
 - 3.4 Are there distance education service needs and costs?
 No. Distance and Distributed Learning Services are available to students who are on clinical placements, and taking online courses.
 - 3.5 Provide an estimated budget required for library resources to support this program annually. No additional costs are required to support this program annually. The U of S Library has a strong collection for dentistry, including the related health disciplines such as anatomy, physiology, etc. to support it.
- 4. Statement of Assessment of Library requirements (Indicate Library capacity to support new program) The Dentistry librarian will be expected to provide support in developing information literacy skills, and using APA style. The addition of this program should be taken into consideration when considering librarian distribution of workload in the health sciences.

Date: November 1, 2023



Liaison Librarian's Signature:

Library Dean's Signature

Faculty member (for the sponsoring college/dept)



Information Technology Requirements for New Programs and Major Revisions

This form is to be completed by the faculty member responsible for the program proposal in consultation with Information and Communications Technology. Contact ICT Client Services (phone 4827) for assistance.

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

- 1. Proposal Identification Full name of program: Bachelor of Science in Dental Hygiene
- 2. Distance Education

Does the new/revised program include courses that are delivered by 'distance education'? YesNoFace-to-face off-campusTelevisedMulti-modeIndependent StudyWeb-basedOther (specify)

- 3. Network Requirements
 - 3.1 Does the program have any new special network requirements? No, network requirements are unchanged from existing program Yes, the program has the following new network requirements: Video transmission (specify) General Web and e-mail usage Large (10MB or more) file transfers Other (specify)
 - 3.2 Does the program require any new access to the Internet or the Canadian Research network?
 No, existing access and bandwidth (speed) are adequate
 Yes, additional network access is required
 Describe new requirements (e.g. type of access, room numbers, number of computers, bandwidth required):
 - 3.3 Will students require new access to University IT resources (e.g. library, e-mail, computer labs, etc.) from their homes?
 No, home access requirements are unchanged from existing program Yes, students will require new access to IT resources from home (please clarify the access required and how it should be provided):
- 4. Software Requirements Please list the software that will be required for the program (e.g. e-mail, web pages, SPSS, discipline-specific software, etc.), and indicate where it needs to be available. Include cost estimates for initial purchase and ongoing support/upgrading, if applicable. **No new requirements.**

5. Hardware Requirements

Please list any special IT hardware required for the program (e.g. high performance workstations, colour printers, scanners, large disk space, etc.) and indicate whether the new hardware will be provided by the college/department or centrally by the University. Include cost estimates for initial purchase and ongoing support/upgrading. **No new requirements**

6. Computer Lab Access

Does the program have new computer lab access requirements?

Computer lab access requirements are	unchanged from existing program
General ('walk-in') access is required	hours/week/student
Access for classes/tutorials is required	hours/week/student

Estimated number of students in program: 18/yr, total of 54 in all three years

7. Student IT Support

Please describe any new requirements for student IT support (e.g. number of hours training per term, training topics, number of hours of user support per week during office hours and evenings/weekends). The program will be using the same USask systems but they will used outside of current business hours as the program will be in the evenings from 5:00-10:00pm; however, an additional embedded IT support person will be required to run the clinic due to the complicated nature of the software and equipment that the college uses.

8. Faculty IT Support

Please describe any new requirements for faculty IT support (e.g. number of hours training per year, training topics, number of hours of one-on-one support per year, support for course development, support for desktop hardware, software and peripherals, other). The program will be using the same USask systems but they will used outside of current business hours as the program will be in the evenings from 5:00-10:00pm; however, an additional embedded IT support person will be required to run the clinic due to the complicated nature of the software and equipment that the college uses.

9. Impact on Institutional Systems

Please describe any changes that may be necessary to institutional systems in order to support the proposed program (e.g. student information system, telephone registration system, financial systems, etc.). Provide an estimate of the cost of systems modifications. Refer to modifications identified in the Office of the Registrar Consultation Form if applicable. **The size of enrolment of 18 students will have a negligible impact.**

Date: December 8, 2023

Information and Communications Technology: Duy Hoang

Faculty Member (sponsoring college/dept)



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 101
- 2.2 Academic credit units: 2
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Theory and Practice I Course Short Title (maximum 30 characters): Dental Hygiene Theory and Practice I

2.4	Total Hours:	Lecture: 2	Seminar	Lab	Tutorial	Other
2.5	Weekly Hours:	Lecture: 2	Seminar	Lab	Tutorial	Other
2.6	Term in which it	will be offered	T1 X	Т2	T1 or T2 T	1 and T2

2.7 Prerequisite: None

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course is designed to support your understanding of the dental hygiene profession. It will also introduce you to a care model that includes a problem-solving approach involving <u>A</u>ssessment, <u>D</u>ecision-making/ Diagnosis, <u>P</u>lanning, <u>I</u>mplementation, and Evaluation (ADPIE). You will be gaining knowledge and abilities related to providing clinical care.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the history of the dental hygiene profession.
- 2. Examine the development of a PICO question to guide the creation of an annotated bibliography.
- 3. Describe conceptions of health held by different communities /cultures.

- 4. Describe the Canadian Health Care Act and its associated principles.
- 5. Explore how oral health is a socially influenced condition by analyzing the social determinants of health and their possible impact on the care provided.
- 6. Describe risk and records management in dental environments.
- 7. Describe strategies for effective referrals.
- 8. Explain the scope of practice and regulatory mechanisms governing the practice of the oral health professions.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. History of the dental hygiene profession in Canada
- 2. ADPIE process of care as a foundation for decision-making
- 3. PICO questions and annotated bibliographies
- 4. Concepts of health and social determinants of health
- 5. Canadian Health Care Act
- 6. Dental records management
- 7. Basic referral communications (letter, email, discussion, etc.)
- 8. Scopes of practice for oral health professionals
- 9. Self-regulation and the associated practice standards for dental hygienists

8. Enrolment

- 8.1 Expected enrollment:
- 8.2 From which colleges?

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written exams		
	Mid-term Exam	10%	15%
	Final Exam	20%	20%
Task 2	Defining personal con	cept of health	15%

Task 3	Participation in the analysis of 2 cases to identify the social determinants of health impacting the health of family members (Teamwork)	30%
Task 4	Develop a referral email based on a presented case (Teamwork)	10%
Task 5	Professionalism – instructor, self- and peer assessment	10%
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Pro P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If c	, IP In Progress) gress) other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research

ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DT), DT, 1
- 3.3 Prerequisite(s): none
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DETH 102, 103, 104, 105, 106, 107 and 108
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent:

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive:

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 102
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Health Sciences I Course Short Title (maximum 30 characters): Health Sciences I

2.4	Total Hours:	Lecture: 26	Seminar	Lab	Tutoria	l Other: 13
2.5	Weekly Hours:	Lecture: 2	Seminar	Lab	Tutoria	l Other: 1
2.6	Term in which it	will be offered	T1 X	Т2	T1 or T2	T1 and T2

2.7 Prerequisite: None

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval
- 2.8 Catalogue description (150 words or less): This course will provide you with the background to support your understanding of the complex relationship between oral and general health. You will learn about the anatomy and physiology of the head and neck area including an understanding of the human dentition.
- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Develop the vocabulary associated with the primary and secondary human dentition.
- 2. Describe the basic morphological features of primary and secondary teeth that relate to their identification and differentiation.
- 3. Describe the basic tissues of teeth, and the general eruption sequence of primary and secondary teeth.
- 4. Describe the superficial regions of the head and neck.
- 5. Describe the structures, locations, and functions of the tissues of the oral cavity.
- 6. Describe the skull, mandible, and temporomandibular joint and their anatomical features.
- 7. Describe the location, action, and innervation of the muscles of the head and neck.
- 8. Describe the arterial and venous circulation of the head and neck.
- 9. Describe the lymph nodes and associated lymphatic components of the head and neck.
- 10. Describe the innervation of the head and neck area.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Tooth numbering systems and dental terminology
- 2. Morphological features of the deciduous and permanent dentition
- 3. Basic tissues of the tooth and general eruption sequence of the primary and permanent dentition
- 4. Regions of the head and neck
- 5. Tissues of the oral cavity including common oral landmarks
- 6. Bones of the head and neck including articulations
- 7. Muscles of the head and neck
- 8. Arterial and venous supply to head and neck
- 9. Lymph nodes of the head and neck
- 10. Innervation of the head and neck

8. Enrolment

- 8.1 Expected enrollment: 20
- 8.2 From which colleges? Dentistry

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations Mid-term Examination Final Examination	25% 25%
Task 2	Objective Structured Clinical Evaluation (OSCE) Mid-Term Final	15% 15%
Task 3	Assessment of videos related to the muscles of the head and neck area (Teamwork)	10%
Task 4	Assessment of videos related to the innervation of the head and neck area (Teamwork)	10%
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progree N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please	ess) e specify:
9.2	Is the course exempt from the final examination? No	
Require Include a	d text a bibliography for the course.	
Resourc	es	

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

10.

11.

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" No<u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DT), DT, 1
- 3.3 Prerequisite(s): none
- 3.4 Prerequisite(s) or Corequisite(s):

- 3.5 Corequisite(s): DETH 101, 103, 104, 105, 106, 107 and 108
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent:

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive:

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 103
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Oral Health Sciences I Course Short Title (maximum 30 characters): Oral Health Sciences I

2.4	Total Hours: 39 Lecture: 26	Seminar	Lab	Tutorial	Other: 13
2.5	Weekly Hours: 3 Lecture: 2	Seminar	Lab	Tutorial	Other: 1
2.6	Term in which it will be offered	: T1 X	T2 1	Г1 or T2 Т1	and T2

2.7 Prerequisite: None

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will provide you with the foundation knowledge important for clinical practice including psychomotor and assessment abilities. It will also introduce you to types of oral health prevention approaches.

This course is intended for students in the Bachelor of Science in Dental Hygiene program. Others may apply based on approval from the program.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the principles of balanced positioning and the integration of surgical magnification.
- 2. Describe basic principles of clinical instrumentation for oral assessments.
- 3. Describe principles and concepts of radiation and radiation safety.
- 4. Describe the steps involved in exposing, processing, and saving / storing of radiographs.
- 5. Describe principles of bitewing radiography and radiographic skills.
- 6. Describe general health assessments including vital signs.
- 7. Describe extra- and intra-oral soft tissue assessment procedures.
- 8. Examine annotations used to record information about the dentition.
- 9. Describe a basic understanding of oral biofilm in health and disease.
- 10. Describe common dental deposits found on primary and permanent dentitions.
- 11. Describe oral health injury and disease prevention approaches.
- 12. Examine preventive biomaterials in oral health care.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Dental ergonomics and surgical magnification
- 2. Instrumentation principles -mirror, explorers, periodontal probes
- 3. Health histories and general assessments including vital signs
- 4. Head and neck and Intra-oral soft tissue examinations exploring terminology about lesions
- 5. Annotations dental examination
- 6. Principles and concepts of radiation and radiation safety
- 7. Steps involved in exposing, processing, and saving / storing of radiographs
- 8. Introduction to the oral biofilm and dental deposits
- 9. Types of prevention in oral health with a focus on topical fluoride (mechanisms of action, uses and application)
- 10. Desensitizing approaches and agents
- 11. Techniques, materials, and instruments for interim stabilization and atraumatic restorative therapy

8. Enrolment

- 8.1 Expected enrollment: 20
- 8.2 From which colleges? Dentistry

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations Mid-term Examination	30%
	Final Examination	40%
Task 2	Develop a realistic PICO question about a preventive biomaterial (Teamwork)	10%
Task 3	Annotated bibliography on selected preventive biomaterial based on a PICO question (Teamwork)	20%

- 9.1 How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:
- 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" No<u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DT), DT, 1
- 3.3 Prerequisite(s): none
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DETH 101, 102, 104, 105, 106, 107 and 108
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent:

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive:

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 104
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Behavioural Sciences I Course Short Title (maximum 30 characters): Behavioural Sciences I

2.4	Total Hours: 39 Lecture: 39	Seminar	Lab	Tutorial	Other:
2.5	Weekly Hours: 3 Lecture: 3	Seminar	Lab	Tutorial	Other:
2.6	Term in which it will be offered	: T1 X	T2	T1 or T2 T	1 and T2

2.7 Prerequisite: None

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course includes an overview of the construction of knowledge, critical thinking, interpersonal communication, and theories of behavioural change. It will also focus on counselling abilities as well as introducing you to reflective journaling that will enhance your professional decision-making.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the concept of critical thinking and features of good reasoning.
- 2. Describe the value of reflective practice and the role of reflective journaling.
- 3. Describe basic principles and strategies associated with professional communication abilities.
- 4. Examine team dynamics and process skills fundamental to the work of oral health teams.
- 5. Explain strategies to support self and peer assessment.
- 6. Describe theories of behavioural change and their influence in supporting self-care strategies for individuals and groups.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Construction of knowledge, critical thinking, and reflective practice
- 2. Effective listening, and non-verbal and verbal communication
- 3. Facilitators and barriers to communication
- 4. Motivational Interviewing
- 5. Self-and peer-assessment
- 6. Teamwork including relationship building
- 7. Current theories of behavioural change
- 8. Development of new self-care habits
- 9. Deletion of habits (e.g., alcohol and commercial tobacco use)

8. Enrolment

- 8.1 Expected enrollment: 20
- 8.2 From which colleges? Dentistry

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations Final Examination	25%
Task 2	Annotated bibliography related to theories of change (Teamwork)	25%
Task 3	Self-reflection Journaling Assignment	15%
Task 4	Assessment of videos related to oral self-care techniques (Teamwork)	25%
Task 5	Professionalism – instructor, self- and peer assessment	10%

9.1 How should this course be graded?

C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text: N/A

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DT), DT, 1
- 3.3 Prerequisite(s): none
- 3.4 Prerequisite(s) or Corequisite(s):

- 3.5 Corequisite(s): DETH 101, 102, 103, 105, 106, 107 and 108
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent:

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive:

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 105
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): General Anatomy, Biochemistry & Physiology I Course Short Title (maximum 30 characters): General Anatomy, Biochemistry & Physiology I

2.4	Total Hours: 39 Lecture: 26	Seminar	Lab	Tutorial	Other: 13
2.5	Weekly Hours: 3 Lecture: 2	Seminar	Lab	Tutorial	Other: 1
2.6	Term in which it will be offered	: T1 X	T2 T1	L or T2	T1 and T2

2.7 Prerequisite: None

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less): This course provides you with a basic overview of human anatomy and physiology. You will learn about the organization of the human body with a particular emphasis on the integumentary, skeletal, muscular, nervous, and sensory systems. The course work will focus on developing your ability to apply this knowledge to dental hygiene practice.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the sciences of anatomy and physiology of the human body.
- 2. Explain how the chemical levels of organization of the human body impact homeostasis.
- 3. Examine the structures and functions of human cells and tissues.
- 4. Describe the structures and functions of the integumentary system.
- 5. Examine osseous tissue, and the structures and functions of the skeletal system including articulations.
- 6. Examine skeletal muscle tissue, and the structures and functions of the muscular system.
- 7. Describe the structures and functions of neural tissue.
- 8. Examine the structures and functions of the central and peripheral nervous systems.
- 9. Examine the structures and functions of the general and special senses.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Sciences of anatomy and physiology
- 2. Homeostasis
- 3. Human cells
- 4. Human tissues (epithelial, connective tissue, muscle tissue and nervous tissue)
- 5. Integumentary system
- 6. Osseous tissue and skeletal system
- 7. Muscle tissue and muscular system
- 8. Neural tissue and central nervous system
- 9. Peripheral nervous system
- 10. General and specialized senses

8. Enrolment

- 8.1 Expected enrollment: 20
- 8.2 From which colleges? Dentistry

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations Term Examination 1 Term Examination 2 Final Examination	15% 15% 35%
Task 2	Objective Structured Clinical Evaluations (OSCEs)	20%
Task 3	Assessment of videos related to a system of the body (Teamwork)	15%
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify	

9.2 Is the course exempt from the final examination? No

10. Required text: N/A

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) **TC51**
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? **No**
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DT), DT, 1
- 3.3 Prerequisite(s): none
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DETH 101, 102, 103, 104, 106, 107 and 108
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent:

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive:

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 106
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Principles & Practice for Oral Health Professionals
 Course Short Title (maximum 30 characters): Principles & Practice for Oral Health Professionals
- 2.4 Total Hours: 39 Lecture: 13 Seminar Lab Tutorial Other: 26 2.5 Weekly Hours: 3 Lecture: 1 Seminar Lab Tutorial Other: 2 Term in which it will be offered: 2.6 T1 X T2 T1 or T2 T1 and T2
- 2.7 Prerequisite: None

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

- This course is designed to assist you in gaining a basic understanding of the health professions and what it means to be a professional. It will highlight the responsibilities of a professional with a focus on understanding professional regulation, ethical reasoning, evidence-informed decision-making, and interprofessional collaboration.
- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the essential components of professionalism and self-regulation.
- 2. Examine professionalism in terms of ongoing responsibilities to people, families, communities, other professions, and society.
- 3. Describe dental hygiene areas of responsibility (scope of practice) in relation to general and oral health care.
- 4. Explore local, provincial, and national organizations involved in dental hygiene regulation, examination, accreditation, and professional development.
- 5. Examine types of relationships between professionals and the people they serve.
- 6. Examine codes of ethics and ethical decision-making strategies to support your understanding of ethical dilemmas.
- 7. Defend a position with regard to an ethical dilemma scenario associated with health care.
- 8. Explore the development of shared language to promote communication about roles, knowledge, abilities, and oral health and wellness.
- 9. Explore strategies to support effective team communication and functioning.
- 10. Examine approaches to demonstrating respect and fostering comfort within a team environment.
- 11. Examine approaches to achieve consensus.
- 12. Communicate professionally within a group context
- 13. Assess the validity, limitations, and clinical usefulness of health science publications relevant to general and oral health.
- 14. Use the PICO approach to generate an oral health question.
- 15. Perform a computer-assisted search of the health science literature relevant to an oral health question.
- 16. Complete the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans course on Research Ethics (TCPS:2 (CORE)
- 17. Work as a member of team to review and discuss the scientific literature on a topic related to an oral health issue.
- 18. Complete a critical appraisal of current and relevant literature and make an evidence-informed recommendation for person and / or family centered care.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Professionalism
- 2. Scopes of practice
- 3. Relationships between professionals and the people they serve
- 4. Codes of ethics and ethical reasoning
- 5. Analysis of an ethical dilemma
- 6. Abilities to promote intra- and inter-professional collaboration
- 7. Team communication strategies
- 8. Creating respectful environments
- 9. Basic consensus building abilities
- 10. Basic negotiation abilities
- 11. Scientific method
- 12. Protecting the rights of humans in research (Tri-Council Policy Statement)
- 13. Development of a PICO question
- 14. Searching data bases
- 15. Experimental and non-experimental designs
- 16. Levels of evidence in quantitative designs
- 17. Sampling approaches and possible sources of error
- 18. Types of data and measurement approaches including sources of error
- 19. Descriptive and inferential statistical tests what conclusions can you draw?
- 20. P-values and what they mean in terms of probability
- 21. Associations and causation
- 22. Controlling for bias in research

8. Enrolment

- 8.1 Expected enrollment: 20
- 8.2 From which colleges? Dentistry

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Scope of Practice: Clarify the possible contributions of dental hygienists within a selected health care setting (Teamwork)*	15%
Task 2	Develop a response to an ethical dilemma scenario. (Teamwork)	20%
Task 3	Complete the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans course on Research Ethics (TCPS:2 (CORE)	10%
Task 4	Develop a realistic PICO question about an oral health issue. (Teamwork)	10%

Task 5	Annotated bibliography about an oral health question (Teamwork)	20%
Task 6	Case analysis about a complaint submission to an oral health regulatory organization. (Teamwork)	15%
Task 7	Professionalism (self, peer, and faculty)	10%
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:	

9.2 Is the course exempt from the final examination? No

10. Required text: N/A

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) **TC51**
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? **No**
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar

IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DT), DT, 1
- 3.3 Prerequisite(s): none
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DETH 101, 102, 103, 105, 107 and 108
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent:
*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive:

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 107
- 2.2 Academic credit units: 2
- 2.3 Course Long Title (maximum 100 characters): Infection Control in Dentistry Course Short Title (maximum 30 characters): Infection Control in Dentistry

2.4	Total Hours: 26 Lecture: 26	Seminar	Lab	Tutorial	Other:
2.5	Weekly Hours: 2 Lecture: 2	Seminar	Lab	Tutorial	Other:
2.6	Term in which it will be offered	: T1 X	Т2 Т	1 or T2 T	1 and T2

2.7 Prerequisite: None

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will include methods of prevention and control of microorganisms, including blood borne viruses such as hepatitis and human immunodeficiency virus (HIV). Immunization, routine practice, additional isolation precautions, sterilization and disinfection, safety, and Workplace Hazardous Materials Information System (WHMIS) are also addressed.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Explain how to prevent disease transmission in the dental setting.
- 2. Explain and be able to follow clinical Infection Prevention and Control (IPAC) protocols.
- 3. Describe IPAC regulations in Saskatchewan and Canada.
- 4. Explain how to proceed in case of exposure.

- 5. Identify what kind of Personal Protective Equipment (PPE) is required for dental procedures.
- 6. Be able to safely don and doff in the clinic.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Describe the relationship between microbes and hosts in the infection processes.
 - 1.1 Explain the host-microbial relationship in terms of normal flora and non-normal flora.
 - 1.2 Describe the chain of infection.
 - 1.3 Relate the signs and symptoms of infection using appropriate terms.
 - 1.4 Describe the role of nosocomial infections in health care settings.
 - 1.5 Explain the impact and control of antibiotic-resistant organisms (AROs) in health care.
 - 1.6 Explain the role of infection prevention and control professionals in health care.
- 2. Describe the role of immunization in the prevention and control of infection in health care settings.
 - 2.1 Describe the immune response in healthy individuals.
 - 2.2 Describe commonly used products for immunization.
 - 2.3 Explain rubella, hepatitis B, and chickenpox immunization.
 - 2.4 Explain the purpose of testing for tuberculosis in health care workers.
- 3. Describe the transmission of blood-borne viruses (BBVs) and other emerging infections.
 - 3.1 Describe the risks to health care workers when working with infected people.
 - 3.2 Discuss hepatitis A, B, and C.
 - 3.3 Discuss human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS).
 - 3.4 Explain the role of health care workers in preventing the transmission of bloodborne pathogens (BBPs).
 - 3.5 Discuss the transmission of emerging infections.
- 4. Apply national, provincial, and local guidelines to prevent transmission of microorganisms in health care settings.
 - 4.1 Describe the purpose of routine practice.

- 4.2 Follow guidelines and procedures for hand washing and the donning and doffing of personal protective equipment (PPE).
- 4.3 Follow procedures for handling and disposing of needles and other sharps, spill cleanup and other biohazardous waste.
- 4.4 Follow the protocol required after significant exposure to blood and body fluids.
- 4.5 Describe the purpose of additional precautions.
- 5. Differentiate sterilization, disinfection, and aseptic techniques.
 - 5.1 Outline how sterilization, disinfection, antisepsis, sanitation, and cleaning are achieved.
 - 5.2 Classify medical items using Spaulding's Classification System.
 - 5.3 Distinguish between the least and most resistant microorganisms.
 - 5.4 Describe the three levels of disinfection.
 - 5.5 Explain the use of various modes of chemical and mechanical disinfection.
 - 5.6 Describe aseptic techniques in health care settings.
- 6. Explain workplace rules and regulations outlined by occupational health and safety legislation.
 - 6.1 Identify the provincial act related to occupational health and safety.
 - 6.2 Outline the general responsibilities of the employer and employee for safety in health care settings including emergency response codes.
 - 6.3 Describe the legislation, basic principles, and procedures for Workplace Hazardous Materials Information System (WHMIS).
 - 6.4 Name the regulations governing the transportation of dangerous goods.
 - 6.5 Describe waste handling in health care facilities.

8. Enrolment

- 8.1 Expected enrollment: 20
- 8.2 From which colleges? Dentistry

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Practical Examination	standard met/ standard not met
Task 2	Waterline Roster	standard met/ standard not met
Task 3	Mid-term Exam	30%
Task 4	Seminar Series	20%
Task 5	Final Exam	50%

- 9.1 How should this course be graded?
 C Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress)
 N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)
 P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress)
 S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:
- 9.2 Is the course exempt from the final examination? No

10. Required text: N/A

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
CO0	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable

MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DT), DT, 1
- 3.3 Prerequisite(s): none
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DETH 101, 102, 103, 105, 106 and 108
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent:

***Please note**: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive:

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 111
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Theory and Practice II Course Short Title (maximum 30 characters): Dental Hygiene Theory and Practice II

2.4	Total Hours:	Lecture: 2	Seminar: 1	Lab	Tutoria	al Other
2.5	Weekly Hours:	Lecture: 2	Seminar: 1	Lab	Tutoria	al Other
2.6	Term in which it	will be offered:	: T1	т2 х	T1 or T2	T1 and T2

2.7 Prerequisite: DEHY 101, 102, 103, 104, 105, 106 and 107

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval
- 2.8 Catalogue description (150 words or less): This course will provide you with an opportunity to advance your abilities in preventive dentistry as well as periodontal therapy. You will learn about the knowledge that underpins these therapies.
- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Examine the development of dental hygiene diagnoses integrating a human needs approach.
- 2. Analyze approaches to treatment planning for the dental hygiene scope of practice.
- 3. Explore a dental appointment management and accounts receivable system.
- 4. Review the steps involved in performing periodontal (PE) and dental (DE) examinations.

- 5. Explain basic principles and concepts of pathology such as inflammation, regeneration, repair, hyperplasia, hypertrophy, and neoplasia.
- 6. Explain the steps involved in an occlusal (OE) examination.
- 7. Explain principles of periapical radiography using conventional and digital methods.
- 8. Examine quality assurance protocols for oral health clinical environments.
- 9. Describe protocols to support medical emergency preparedness including emergency equipment and kits.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Introduction to dental hygiene diagnosis and treatment planning
- 2. Dental practice software and accounts receivable systems
- 3. Basic principles of pathology and the terminology associated with the description of oral lesions
- 4. Periodontal examination
- 5. Dental and occlusal examinations including ADA and Black's classifications of caries
- 6. History of oral radiography and effects of ionizing radiation
- 7. Periapical radiographic techniques to produce conventional and digital images.
- 8. Processing errors and quality assurance with radiographic images
- 9. Basic radiographic anatomy and diagnostic quality of radiographic images
- 10. Quality assurance protocols (managing people's records, equipment maintenance, sterilization, infection control and inventory control)
- 11. Medical emergency preparedness (including emergency equipment and kits)

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written examinations	
	Mid-term Examination	20%
	Final Examination	30%

Task 2	Objective Structured Clinical Evaluations (OSCEs) - radiographs	20%
Task 3	Comparison of Radiographic Practice Standards (Teamwork)	20%
Task 4	Professionalism (self, peer, and faculty)	10%

- 9.1 How should this course be graded?
 C Completed Requirements
 (Grade options for instructor: Completed Requirements, Fail, IP In Progress)
 N Numeric/Percentage
 (Grade options for instructor: grade of 0% to 100%, IP in Progress)
 P Pass/Fail
 (Grade options for instructor: Pass, Fail, In Progress)
 S Special
 (Grade options for instructor: NA Grade Not Applicable) If other, please specify:
- 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)

IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 112, 113, 114, 116, 117, 118 and DETH 115
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 112
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Health Sciences II Course Short Title (maximum 30 characters): Health Sciences II

2.4	Total Hours:	Lecture: 3	Seminar:	Lab	Tutoria	al Other
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lab	Tutoria	al Other
2.6	Term in which it	will be offered	: T1	т2 Х	T1 or T2	T1 and T2

2.7 Prerequisite: DEHY 102 and 103

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course continues to support your understanding of the health sciences. You will learn about general histology, oral embryology, and dental anatomy while also gaining a deeper understanding of microbiology so important to understanding the balance between health and disease.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the structure and functions of a human cell.
- 2. Describe the components and classifications of human tissues.
- 3. Describe the structure and function of the oral and peri-oral tissues.

- 4. Describe the physiology, morphology and metabolism of microorganisms including bacteria, protozoa, fungi, and viruses.
- 5. Explain the body's defense system as it relates to microbial insults.
- 6. Expand on terminology associated with crown and root morphology.
- 7. Differentiate between the morphological characteristics of permanent crowns.
- 8. Describe the root morphology of the permanent dentition.
- 9. Describe the crown and root morphology of the primary dentition.
- 10. Explore the radiographic identification of primary and permanent teeth.
- 11. Explain the embryonic development of the face and oral cavity.
- 12. Explain tooth development and the shaping of the primary and permanent dentitions.
- 13. Explore common dental anomalies in the human dentition.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. The cell, organelles, and junctions
- 2. Cellular metabolism
- 3. Epithelial tissue and glands
- 4. Connective tissue proper, cartilage and adipose tissue
- 5. Bone and nervous tissues
- 6. Oral mucous membranes, salivary glands, and saliva
- 7. Alveolar process and periodontal membrane
- 8. Bacterial morphology, physiology, and metabolism
- 9. Viral morphology, physiology, and metabolism
- 10. Morphology, physiology and metabolism of protozoa and fungi
- 11. Host-parasite relationships
- 12. Distinguishing characteristics of permanent anterior crowns and roots
- 13. Distinguishing characteristics of permanent premolar crowns and roots
- 14. Distinguishing characteristics of permanent molar crowns and roots
- 15. Distinguishing characteristics of primary crowns and roots.
- 16. Radiographic identification of permanent and primary teeth
- 17. Basic embryonic development of the craniofacial complex
- 18. Odontogenesis (including enamel, dentin, pulp, and cementum)

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations	200/
	Nild-term Examination	20%
	Final Examination	30%
Task 2	Objective Structured Clinical Evaluations (OSCEs) – dental anatomy	
	Mid-term	10%
	Final	10%
Task 3	Development of a realistic PICO question related to the embryonic development of the head and neck area (Teamwork)*	10%
Task 4	Annotated bibliography related to PICO question (Teamwork)	20%
9.1	How should this course be graded?	
0.1	C – Completed Requirements	
	Grade ontions for instructor: Completed Requirements Fail IP In Prog	ress)
	N – Numeric/Percentage	10337
	(Grade ontions for instructor: arade of 0% to 100% IP in Progress)	
	P = Pacs/Fail	
	(Grade ontions for instructor: Pass Fail In Progress)	
	S - Special	
	(Grade options for instructor: NA – Grade Not Applicable) If other, pleas	se specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No

If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
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ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

3.1 Permission Required: No

- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 111, 113, 114, 116, 117, 118 and DETH 115
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 113
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Oral Health Sciences II Course Short Title (maximum 30 characters): Oral Health Sciences II

2.4	Total Hours:	Lecture: 3	Seminar:	Lab	Tutori	ial Other
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lab	Tutori	ial Other
2.6	Term in which it	: will be offered:	T1	т2 х	T1 or T2	T1 and T2

2.7 Prerequisite: DEHY 102 and 103

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less): You will learn more about the biomaterials used to help people attain and maintain a healthy dentition. This knowledge will support the development of your dental hygiene treatment planning.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Explore the physical and chemical properties of biomaterials use in dentistry.
- 2. Describe common biomaterials used for polishing of clinical crowns.

- 3. Describe the procedures for placement of sealants on clinical crowns and the associated biomaterials.
- 4. Describe the technique and materials used to take an alginate impression.
- 5. Describe the procedures and associated materials for creating a study cast.
- 6. Describe the procedures for sports guard fabrication and insertion.
- 7. Examine common biomaterials used for the restoration of teeth.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Properties of biomaterials
- 2. Coronal polishing agents
- 3. Pit and fissure sealants
- 4. Impression materials
- 5. Alginate impressions and occlusal registration
- 6. Fabrication of study casts
- 7. Sports guard fabrication and insertion
- 8. Stainless steel crowns and the HALs technique for primary molars
- 9. Varnishes, liners, and bases
- 10. Dental amalgam
- 11. Resin composites and polyacid modified resin composites
- 12. Glass ionomer cements and resin modified glass ionomer cements
- 13. Enamel and dentin bonding biomaterials
- 14. Dental ceramics including metal bonded ceramics and all ceramic restorations

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations	
	Mid-term Examination	30%
	Final Examination	35%

Task 2	Final Objective Structured Clinical Evaluations (OSCEs)	15%
Task 3	Comparison of practice standards and the supporting evidence related to an oral health intervention (Teamwork) ^a	20%

^a For Task 3 students will select from a list of topics such as but not limited to:

- Polishing of clinical crowns
- Pit and fissure sealants
- SDF versus HAL stainless steel crowns
- Prevention and treatment of concussions
 - 9.1 How should this course be graded?
 C Completed Requirements
 (Grade options for instructor: Completed Requirements, Fail, IP In Progress)
 N Numeric/Percentage
 (Grade options for instructor: grade of 0% to 100%, IP in Progress)
 P Pass/Fail
 (Grade options for instructor: Pass, Fail, In Progress)
 S Special
 (Grade options for instructor: NA Grade Not Applicable) If other, please specify:
 - 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description

CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 111, 112, 114, 116, 117, 118 and DETH 115
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 114
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Behavioural Sciences II Course Short Title (maximum 30 characters): Behavioural Sciences II

2.4	Total Hours:	Lecture: 3	Seminar:	Lab	Tuto	orial	Other
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lab	Tuto	orial	Other
2.6	Term in which it	will be offered:	: T1	т2 х	T1 or T2	T1 and	I T2

2.7 Prerequisite: DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will allow you to continue your exploration of the behavioural sciences given that so many behaviours have an impact on general and oral health. You will be introduced to oral self-care techniques and products to assist people in making positive changes to their oral health.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene
- 4. Please list the learning objectives for this course: Learning outcomes:
 - 1. Explain the pillars of health promotion and the role of dental hygienists in this area.

- 2. Explain the process of dental hygiene care (Assess, Diagnose, Plan, Implement and Evaluate) in relation to health promotion in the community.
- 3. Examine oral self-care strategies and aids.
- 4. Explore how to incorporate the Trans -Theoretical Model (TTM) into the dental hygiene scope of practice.
- 5. Explore theories of teaching and learning from the perspective of promoting self-care.
- 6. Explain approaches to support learning for individuals and groups.
- 7. Explore competencies that support an inclusive and safe environment with people of different cultures.
- 8. Describe events that can trigger stress for people, and coping mechanisms and approaches recommended to reduce such stress.
- 9. Start developing a working relationship with a community group by learning about their values, culture, and work.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Pillars of health promotion and ADPIE in the community
- 2. Integration of TTM into self-care sessions
- 3. The impact and uses of systemic and topical fluorides (including Silver Diamine Fluoride)
- 4. Toothbrush selection and adaptation What products to select/recommend?
- 5. Inter-proximal cleaning aids
- 6. Introduction to dentifrices, gum, and oral rinses
- 7. Learning styles, and theories of teaching and learning
- 8. Inclusive and safe environments (including stress triggers and comping mechanisms)
- 9. Public speaking

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

	Mid-Term Final	15% 20%
Task 2	Self-reflection journaling assignment	15%
Task 3	Case analysis related to incorporation of the Trans-Theoretical Model (Teamwork)	15%
Task 5	Annotated bibliography related to a question about teaching and learning (Teamwork)	25%
Task 5	Professionalism – instructor, self- and peer assessment	10%
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special	ss)

(Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
CO0	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 111, 112, 113, 116, 117, 118 and DETH 115
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 116
- 2.2 Academic credit units: 2
- 2.3 Course Long Title (maximum 100 characters): Professional Communication Course Short Title (maximum 30 characters): Professional Communication

2.4	Total Hours:	Lecture: 2	Seminar:	Lab	o Tu	itorial	Other
2.5	Weekly Hours:	Lecture: 2	Seminar:	Lab	o Tu	itorial	Other
2.6	Term in which it	will be offered	T1	T2 X	T1 or T2	T1 and	1 T2

2.7 Prerequisite: DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will assist you in developing communication abilities to support relationships with the people you serve including individual and families. It is designed to provide you with situations likely to arise in your practices.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene
- 4. Please list the learning objectives for this course: Learning outcomes:
- 1. Communicate with some proficiency with the people you serve including individuals, families, and guardians.
- 2. Identify the individuals' and /or family's values, beliefs, needs and concerns.
- 3. Recognize and support individuals with fears and concerns about dental environments.

- 4. Examine how to explore difficult issues/'bad news' with individuals and families.
- 5. Explore the findings, diagnosis, etiology, risks, benefits, and prognoses of the treatment options with individuals and families.
- 6. Explore approaches to gaining informed consent and continuing consent for care.
- 7. Present and discuss the sequence of treatment, estimated fees, payment arrangements, time requirements and the individuals' and / or family's responsibilities for care.
- 8. Provide education regarding the risks and prevention of oral disease, and injury to encourage the adoption of healthy behaviours.
- 9. Maintain accurate and complete records in a confidential manner.
- 10. Demonstrate professional behaviour that is ethical, supersedes self-interest, strives for excellence, and is accountable to individuals and families.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. Other courses or program affected (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Gaining information about individuals' and families' values, beliefs, and concerns
- 2. Supporting people with dental fears
- 3. Sharing 'bad news'/ difficult issues
- 4. Techniques to support effective case presentations
- 5. Informed consent and ongoing consent
- 6. Supporting individuals and families to adopt healthy behaviours
- 7. Management of people's records

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1Case analysis related to taking a comprehensive health
history.20%Task 2Case analysis related to supporting people who experience
dental fears (Teamwork)20%

Task 3	Case analysis related to sharing challenging news (Teamwork)	20%
Task 4	Critique of a case presentation (Teamwork)	20%
Task 5	Professionalism (self & peer)	10%
Task 6	Professionalism (Instructor)	10%

9.1 How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class

FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 111, 112, 113, 114, 117, 118 and DETH 115
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 117
- 2.2 Academic credit units:
- 2.3 Course Long Title (maximum 100 characters): Indigenous Health and Wellness Course Short Title (maximum 30 characters): Indigenous Health and Wellness

2.4	Total Hours:	Lecture: 1	Seminar:	Lab	D Tu	torial	Other
2.5	Weekly Hours:	Lecture: 1	Seminar:	Lab	Tui	torial	Other
2.6	Term in which it	will be offered	T1	T2 X	T1 or T2	T1 and	T2

2.7 Prerequisite: DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will provide you with an understanding of the various dimensions of life as an Indigenous person. It will assist you in exploring the general health and oral health issues faced by Indigenous people, and the impacts on their overall health and wellness.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Explore the history of Indigenous people starting with an exploration of Indigenous life in the pre-colonization era, the colonization era and finally the post-colonization era.
- 2. Examine Indigenous ways of knowing and how Indigenous people construct knowledge.
- 3. Examine how Indigenous people view the concept of health and wellness.

- 4. Compare and contrast the general health status of the Canadian population and Canadian Indigenous people.
- 5. Compare and contrast the oral health treatment needs, utilization, and barriers to utilization of Indigenous people to those of the Canadian population.
- 6. Explore how Indigenous history has influenced the current health status of Indigenous people.
- 7. Describe the social determinants of Indigenous health and their possible impact on the care provided.
- 8. Explore competencies that support an inclusive and safe environment for Indigenous people.
- 9. Describe events that can trigger stress for Indigenous people, and coping mechanisms and approaches recommended to reduce such stress.
- 10. Include the First Nations Principles of Ownership, Control, Access, and Possession (OCAP) when gaining informed consent with Indigenous people.
- 11. Explore the important aspects of program development and evaluation from an Indigenous perspective.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Indigenous history pre-colonialization era
- 2. Indigenous history colonization era
- 3. Indigenous history post-colonization era
- 4. Truth and Reconciliation Commission provision of health services and education of health professionals
- 5. Construction of knowledge from an Indigenous perspective
- 6. Conception of health from an Indigenous perspective
- 7. Indigenous health issues across the lifespan & associated Indigenous determinants of health
- 8. Intergenerational trauma and violence
- 9. Informed consent from the perspective of OCAP
- 10. Creating a safe oral health environment for Indigenous people

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Participation in a talking circle about the Indigenous peoples' understanding of 'health.'	15%				
Task 2	Participation in a talking circle about the social determinants of health for Indigenous people	15%				
Task 3	Annotated bibliography related to a question about a health issue experienced by Indigenous people (Teamwork)	20%				
Task 4	Annotated bibliography related to an aspect of intergenerational trauma and violence (Teamwork)	20%				
Task 5	Case analysis related to the creation of a supportive environment for Indigenous people (Teamwork)	20%				
Task 6	Professionalism (self, peer, and faculty)	10%				
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: arade of 0% to 100%. IP in Progress)					

(Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No

If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 111, 112, 113, 114, 116, 118 and DETH 115
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 118
- 2.2 Academic credit units:
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Practice II Course Short Title (maximum 30 characters): Dental Hygiene Practice II

2.4	Total Hours:	Lecture: 1	Seminar:	Lab	o: 2	Tutorial	Other
2.5	Weekly Hours:	Lecture: 1	Seminar:	Lab	o: 2	Tutorial	Other
2.6	Term in which it	will be offered	: T1	T2 X	T1 or T		nd T2

2.7 Prerequisite: DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

These practice hours allow you to continue to develop your preventive abilities and develop new abilities related to Phase 1 of periodontal therapy. With each new ability, you will first be working in simulation settings and /or with your fellow students, and then shifting to provide the services with community members.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe emergency protocols and equipment in the clinical setting.
- 2. Perform oral assessments including head and neck, intra-oral, periodontal, dental, and occlusal examinations with peers.

- 3. Explain instrumentation principles and associated sharpening techniques for area specific curettes.
- 4. Explore instrumentation principles applicable to dental implants.
- 5. Test the vitality of the pulp working with a student partner.
- 6. Take a full mouth survey (FMS) working in a simulation context.
- 7. Take alginate impressions, occlusal registrations, and fabricate study casts.
- 8. Place a pit and fissure sealant in a simulation setting.
- 9. Integrate the ADPIE process when working with people.
- 10. Observe scheduling, accounts receivable, inventory control, and equipment maintenance procedures.
- 11. Work effectively with radiation equipment including exposing and processing equipment.
- 12. Plan, expose, process, manage and analyze radiographs for quality assurance.
- 13. Initiate referrals for issues beyond your personal scope of practice.
- 14. Foster a safe, ethical environment for people in the practice.
- 15. Take responsibility for basic decisions and actions that reflect critical thinking and problemsolving.
- 16. Work effectively as a member of an oral health team to provide services within clinical practice environments.
- 17. Work towards the development of a relationship with a community group by learning about their values, culture, and work.
- 18. Demonstrate professionalism through respectful and active participation in course sessions.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Emergency equipment and protocols
- 2. Landmarks of the oral and peri-oral areas working with student partners
- 3. Isolation techniques working with student partners
- 4. Oral assessments working with student partners
- 5. Full mouth surveys in simulation context and/or working with student partners
- 6. Area specific curettes including sharpening
- 7. Pulp vitality testing with student partners
- 8. Pit and fissure sealants in simulation
- 9. Alginate impressions, occlusal registration and fabrication of study casts working with student partners
- 10. Sports guard fabrication and insertion working with student partners
- 11. Practicing as a professional

- 12. Managing the practice environment
- 13. Integrating the ADPIE approach with individuals and families
- 14. Providing professional periodontal and preventive services
- 15. Using basic health promotion approaches including educational principles and strategies
- 16. Managing people's records and associated dental software

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Pre-clinical preventive competencies on manikins and student	standard met/
	partners	standard not met
	 Dental (DE), occlusal examination (OE) & periodontal 	
	examinations (PE)	
	FMS in simulation	
	Area specific curettes	
	 Pit and fissure sealant in simulation 	
	 Sports guard fabrication and insertion 	
	ART & IST in simulation	
Task 2	Clinical competencies with people	standard met/
	 General and Oral Health Assessments 	standard not met
	(HH, VS, H&N, IOE, DE, OE, PE) (with a child and an adult)	
	 BW and occlusal radiographs 	
	 Supporting self-care (oral health instruction) 	
	 Simple case debridement (with a child and an adult) 	
	Pit and fissure sealants	
	Topical fluoride application	
	 ART and IST (formative – depending on people's needs) 	
T 1 0		
Task 3	Professional capacity as expressed through the shared core	standard met/
	domains of:	standard not met
	• professionalism,	
	• evidence-informed decision-making	
	• communication,	
	collaboration, and	
	 practice management 	

Each evaluation standard must be met to proceed to the next term, except for the formative assessment described above in Task 2.

- 9.1 How should this course be graded?
 - C Completed Requirements

(Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable

PRA Practicum

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 101, 102, 103, 104, 106, 108, DETH 105 and DENT 388
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 111, 112, 113, 114, 116, 117 and DETH 115
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

***Please note**: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 201
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Theory & Practice III Course Short Title (maximum 30 characters): Dental Hygiene Theory & Practice III

2.4	Total Hours:	Lecture: 1	Seminar:	L	.ab: 2	Tutorial	Other
2.5	Weekly Hours:	Lecture: 1	Seminar:	L	ab: 2	Tutorial	Other
2.6	Term in which it	: will be offered	: T1 X	T2	T1 or T	2 T1 a	and T2

2.7 Prerequisite: DEHY 111, 112, 113, 114, 116, 117 and DETH 115

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course provides additional knowledge to develop your clinical competencies from a preventive, periodontal, and behavioural science perspective. Radiographic interpretation will promote your assessment abilities and ultimately your dental hygiene diagnoses.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Examine approaches to dental hygiene oral diagnosis and treatment planning.
- 2. Explore the evidence supporting the mechanism of action and impact of topical and systemic fluorides.
- 3. Examine the uses of fluoride and the indices used to assess its impact.

- 4. Problem-solve ways to increase the diagnostic quality of radiographic images.
- 5. Interpret radiographic images to assess the possible presence of carious lesions, periodontal bone loss and periapical lesions.
- 6. Examine the use of power-driven instruments, and air polishing equipment, and techniques to support periodontal debridement.
- 7. Examine the evidence to support the use of diverse oral health aids and agents.
- 8. Explore pre- and post-natal oral care including baby care.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Dental hygiene diagnosis and treatment planning
- 2. Caries risk analysis and caries management plans
- 3. Systemic fluorides including water fluoridation, and fluorosis indices
- 4. Topical fluorides
- 5. Radiographic exposing, processing errors, and basic radiographic interpretation
- 6. Power-driven instruments and air polishing devices
- 7. Manual versus powered toothbrushes What is the evidence?
- 8. Antimicrobial agents in rinses, dentifrices, and gums What is the evidence?
- 9. Care for removable appliances, fixed protheses, and dental implants
- 10. Pre- and post-natal care including baby care

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations	
	Mid-term Examination	20%
	Final Examination	30%
Task 2	OSCE examination (Radiographic interpretation)	20%

- Task 3Comparison of practice standards related to fluoride20%supplementation for children (Teamwork)
- Task 4Professionalism (self, peer, and faculty)10%
 - 9.1 How should this course be graded?
 C Completed Requirements
 (Grade options for instructor: Completed Requirements, Fail, IP In Progress)
 N Numeric/Percentage
 (Grade options for instructor: grade of 0% to 100%, IP in Progress)
 P Pass/Fail
 (Grade options for instructor: Pass, Fail, In Progress)
 S Special
 (Grade options for instructor: NA Grade Not Applicable) If other, please specify:
 - 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio

IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science

SOCS Social Science

ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 111, 112, 113, 114, 116, 117 and DETH 115
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 202, 203, 204 and 208
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 202
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Health Sciences III Course Short Title (maximum 30 characters): Health Sciences III

2.4	Total Hours:	Lecture: 3	Seminar:	La	b:	Tutorial	Other
2.5	Weekly Hours:	Lecture: 3	Seminar:	La	b:	Tutorial	Other
2.6	Term in which it	will be offered	: T1 X	Т2	T1 or T2	2 T1 an	d T2

2.7 Prerequisite: DEHY 111, 112, 113, 114, 116, 117 and DETH 115

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will build on the past courses by this name to expand your understanding of the complex relationships between the systems of the body and how they are affected when imbalances occur. You will also begin to explore pharmacology.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the action of commonly used pharmaceutical agents and their subsequent handling by the body.
- 2. Describe common medications that impact oral health or are used to support oral health care.
- 3. Explain common prescription terminology and protocols for documentation.

- 4. Differentiate between innate and acquired immunity.
- 5. Explain the roles of humoral and cellular immunity.
- 6. Describe primary and secondary antibody responses to inflammation and immunity.
- 7. Explore the AAP classification of periodontal and peri-implant diseases and conditions.
- 8. Explain the importance of saliva and the impacts of xerostomia on oral health.
- 9. Examine gingival diseases and conditions.

10. Explore common periodontal diseases and conditions.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Terminology and principles related to pharmacology
- 2. Autonomic drugs
- 3. Non-narcotic and narcotic analgesics
- 4. Anti-infective, antifungal, and anti-viral drugs
- 5. Sedatives and hypnotics
- 6. General and local anesthetics
- 7. Prescription writing, dispensing, and administering
- 8. Innate and acquired immunity.
- 9. Humoral and cellular immunity.
- 10. Antibody responses
- 11. Saliva and xerostomia
- 12. Overview of the AAP classification of periodontal and peri-implant diseases and conditions
- 13. Staging and grading of periodontal disease
- 14. Systemic diseases as modifying factors for periodontal disease
- 15. Gingival diseases and conditions
- 16. Diagnostic tests for periodontitis

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations					
	Mid-term Examination	25%				
	Final Examination	30%				
Task 2	Case analysis (Teamwork)	15%				
Task 3	Development of realistic PICO question related to a gingival condition (Teamwork)	10%				
Task 4	Annotated bibliography related to a PICO question about a drug category (Teamwork) ^a	20%				
^a For Task 4 stude	ents can select from a list of topics such as prescription of:					
narcotic	analgesics					
 antibiotio 	antibiotic prophylaxis					
 anti-infection 	ctive, antifungal, and anti-viral drugs					

- 9.1 How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:
- 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 111, 112, 113, 114, 116, 117 and DETH 115
- 3.4 Prerequisite(s) or Corequisite(s):

- 3.5 Corequisite(s): DEHY 201, 203, 204 and 208
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 203
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Oral Health Sciences III Course Short Title (maximum 30 characters): Oral Health Sciences III

2.4	Total Hours:	Lecture: 3	Seminar:	Lab	o: Tu	torial (Other
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lab	o: Tu	torial (Other
2.6	Term in which it	will be offered	: T1 X	Т2	T1 or T2	T1 and	Т2

2.7 Prerequisite: DEHY 111, 112, 113, 114, 116, 117 and DETH 115

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

dentition.

Catalogue description (150 words or less): This course will develop your knowledge about the influence of nutrition on general and oral health. It will also add to your understanding of the cranio-facial complex and the associated

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the essential food nutrients needed to support health.
- 2. Describe the elements of healthy eating.
- 3. Describe how nutrition influences general and oral health.
- 4. Examine approaches to help people make informed choices about food.

- 5. Explore the influence of socio-economic factors and culture on eating patterns.
- 6. Explore common nutritional deficiencies nationally and internationally and their possible oral manifestations.
- 7. Explain the histology and sequence of eruption and tooth exfoliation.
- 8. Differentiate between normal and abnormal development of the craniofacial complex.
- 9. Examine the formation of the interrelationship between the maxillary and mandibular arch.
- 10. Examine the development of the primary and permanent dentition from the perspective of biological age and skeletal age.
- 11. Explore congenital and acquired defects in dental tissues.
- 12. Explore the dental caries process and associated host contributing factors.
- 13. Analyze changes in the tissues of the teeth with age.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Overview of essential nutrients
- 2. Carbohydrates
- 3. Proteins
- 4. Lipids
- 5. Vitamins
- 6. Minerals and water
- 7. Canada's food guide and using food labels to support healthy choices
- 8. Dietary counseling for oral health
- 9. Socio-economic and cultural influences on eating choices
- 10. Common nutritional deficiency conditions and their possible oral manifestations
- 11. Enamel
- 12. Dentin, cementum, and pulp
- 13. Histology and sequence of tooth exfoliation and eruption
- 14. Craniofacial development and profiles
- 15. Occlusion including classifications
- 16. Congenital and acquired defects of dental tissues
- 17. Cariology including diagnostic tests used for detection
- 18. Dentinal hypersensitivity and the aging of the tooth tissues

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1 Task 2	Written Examinations Mid-term Examination Final Examination	25% 35%
Task 3	Annotated bibliography related to the exploration of a dental anomaly. (Teamwork)	20%
Task 4	Annotated bibliography related to a nutritional issue (Teamwork)	20%

- 9.1 How should this course be graded?
 C Completed Requirements
 (Grade options for instructor: Completed Requirements, Fail, IP In Progress)
 N Numeric/Percentage
 (Grade options for instructor: grade of 0% to 100%, IP in Progress)
 P Pass/Fail
 (Grade options for instructor: Pass, Fail, In Progress)
 S Special
 (Grade options for instructor: NA Grade Not Applicable) If other, please specify:
- 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

- ILRQ Indigenous Learning Requirement
- QRRQ Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 111, 112, 113, 114, 116, 117 and DETH 115
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 201, 202, 204 and 208
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 204
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Community Practice I Course Short Title (maximum 30 characters): Community Practice I

2.4	Total Hours:	Lecture: 3	Seminar:	Lab:	Tutorial	Other
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lab:	Tutorial	Other
2.6	Term in which it	will be offered	: T1 X	T2 T1	or T2	T1 and T2

2.7 Prerequisite: DEHY 111, 112, 113, 114, 116, 117 and DETH 115

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will provide you with further insights into community practice. You will continue to explore the complex nature of culturally safe care and the unique needs of people living with limitations, impairments, and developmental disabilities.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe public policy processes and the position of oral care within the Canadian health care system.
- 2. Explore the inverse care law as it applies to oral health status.
- 3. Describe public oral health programs available in your province and nationally.

- 4. Compare dental treatment needs and utilization of oral health services in un-served and underserved populations in Canada.
- 5. Examine approaches to support culturally safe, compassionate, and relevant care.
- 6. Explore assessment and planning within a community context.
- 7. Explore approaches to support people living with chronic medical conditions, limitations, and impairments.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Canadian health care systems and public policy related to oral health
- 2. Provincial and national oral health programs
- 3. Canadian oral health survey data
- 4. Assessing community needs
- 5. Decision making in the community including the First Nations principles of OCAP
- 6. Developing community plans
- 7. Culturally safe, compassionate, and relevant care
- 8. People living with sensory and cognitive limitations and impairments
- 9. People living with chronic medical conditions

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Self-reflection journaling assignment	20%
Task 2	Annotated bibliography related to a question about people living with a chronic medical condition (Teamwork)	20%
Task 3	Annotated bibliography related to a question about people living with limitations and impairments (Teamwork)	20%
Task 4	Community report (Teamwork)	15%

- Task 5Participation in community meeting ADPIE in community15%This community meeting will involve community members to explore
their views about your work in the community and how they would
like to see it evolve.
- Task 6Professionalism instructor, self- and peer assessment10%
 - 9.1 How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:
 - 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)

IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

- ELWR English Language Writing Requirement
 - ILRQ Indigenous Learning Requirement
 - QRRQ Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 111, 112, 113, 114, 116, 117 and DETH 115
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 201, 202, 203 and 208
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 208
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Practice III Course Short Title (maximum 30 characters): Dental Hygiene Practice III

2.4	Total Hours:	Lecture:	Seminar:		Lab:	Tutoria	1	Other: 6
2.5	Weekly Hours:	Lecture:	Seminar:		Lab:	Tutoria	1	Other: 6
2.6	Term in which it	will be offered:	T1 X	Т2	T1 or ⁻	Г2	T1 and	T2

2.7 Prerequisite: DEHY 111, 112, 113, 114, 116, 117 and DETH 115

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less): This third course in the series will utilize clinic hours to provide you with opportunities to continue to develop your dental hygiene scope of practice working in the campus clinic and the community. You will mainly be working to provide dental hygiene services with people.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Place temporary restorations.
- 2. Demonstrate coronal whitening procedures.
- 3. Demonstrate placement and removal of post-surgical dressings.
- 4. Demonstrate suture removal.

- 5. Demonstrate extra-oral imaging including panoramic, TMJ, and cephalometric radiographs and cephalometric tracings.
- 6. Assist with scheduling, accounts receivable, inventory control, and equipment maintenance procedures.
- 7. Integrate the ADPIE process when working with individuals, families, and a community group.
- 8. Use culturally sensitive and inclusive language with people, their families, and caregivers.
- 9. Assist in the delivery of local anesthesia to support pain management.
- 10. Take responsibility for basic decisions and actions that reflect critical thinking and problemsolving within dental hygiene practice environments.
- 11. Work effectively as a member of an oral health team to provide services within practice environments.
- 12. Initiate referrals for issues beyond your personal scope of practice.
- 13. Foster a safe, ethical environment for people in the practice setting.
- 14. Demonstrate professionalism through respectful and active participation in course sessions.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Placement of temporary restorations
- 2. Coronal whitening using bleaching trays
- 3. Coronal whitening using direct application
- 4. Placement and removal of post-surgical dressings
- 5. Suture removal
- 6. Panoramic, TMJ, and cephalometric radiographs & cephalometric tracing
- 7. Practicing as a professional
- 8. Managing the practice environment
- 9. Integrating the ADPIE approach in clinical and community settings
- 10. Providing professional preventive, therapeutic and health promotion services

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	 Pre-clinical competencies: Panoramic, TMJ and cephalometric radiographs & cephalometric tracing in simulation settings Suture removal Temporary restorations 	standard met/ standard not met
Task 2	 Clinical assessments General & Oral Health Assessments as per Term 2 with the addition of radiographs FMS if not included in the above assessment Diagnosis and treatment planning to the scope of practice Oral debridement (2 people) 	standard met/ standard not met
Task 3	 Pit and fissure sealants Professional capacity as expressed through the shared core domains of: professionalism, evidence-informed decision-making communication, collaboration, and practice management 	standard met/ standard not met
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP Ir N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other,	n Progress) ;) , please specify:
9.2	Is the course exempt from the final examination? No	

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program

- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement ILRQ – Indigenous Learning Requirement QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 111, 112, 113, 114, 116, 117 and DETH 115
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 201, 202, 203 and 204
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 211
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Theory & Science IV Course Short Title (maximum 30 characters): Dental Hygiene Theory & Science IV

2.4	Total Hours:	Lecture: 1	Seminar:	Lab	: Tutor	rial Other: 2
2.5	Weekly Hours:	Lecture: 1	Seminar:	Lab	: Tutor	rial Other: 2
2.6	Term in which it	will be offered	: T1	т2 х	T1 or T2	T1 and T2

2.7 Prerequisite: DEHY 201, 202, 203, 204 and 208

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course is designed to deepen your understanding of radiographic interpretation and the management of carious lesions and other defects in teeth. It provides you with an overview of restorative biomaterials important to the rehabilitation / reconstruction of teeth to build a functional occlusion.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Explore medical emergencies common in oral health settings.
- 2. Interpret radiographic images to explore periodontal bone loss, root morphology, carious lesions, pulpal changes, periapical lesions, and other variations from normal.

- 3. Examine how dental hygienists participate in the diagnosis of oral pathology and oral conditions.
- 4. Explore treatment planning considerations for more complex cases integrating the person's values and preferences.
- 5. Analyze the pros and cons of different restorative materials.
- 6. Explore current and emerging biomaterials and their potential impact on oral health therapies.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Medical emergencies within oral health settings
- 2. ADPIE process with an emphasis on diagnosis and treatment planning
- 3. Radiographic interpretation
- 4. Restorative biomaterials comparing benefits, limitations, and emerging products

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Examinations Final examination	20%
Task 2	OSCE examination	4 = 0 (
	Term OSCE in radiographic interpretation	15%
	Final OSCE in radiographic interpretation	15%
Task 3	2 Case analyses for 10% each (Teamwork)	20%
Task 4	Clinical decision analysis/decision tree related to a restorative question (Teamwork)	20%
Task 5	Professionalism – instructor, self- and neer assessment	10%
Tubic D	refeasionanisment activity sen and peer assessment	10/0

- 9.1 How should this course be graded?
 C Completed Requirements
 (Grade options for instructor: Completed Requirements, Fail, IP In Progress)
 N Numeric/Percentage
 (Grade options for instructor: grade of 0% to 100%, IP in Progress)
 P Pass/Fail
 (Grade options for instructor: Pass, Fail, In Progress)
 S Special
 (Grade options for instructor: NA Grade Not Applicable) If other, please specify:
- 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable

MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 201, 202, 203, 204 and 208
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 212, 213, 214 and 218
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.
5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 212
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Health Sciences IV Course Short Title (maximum 30 characters): Health Sciences IV

2.4	Total Hours:	Lecture: 3	Seminar:	Lab	o: Tu	torial	Other:
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lab	: Tu	torial	Other:
2.6	Term in which it	will be offered	T1	T2 X	T1 or T2	T1 and	1 T2

2.7 Prerequisite: DEHY 201, 202, 203, 204 and 208

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course is designed to deepen your understanding of radiographic interpretation and the management of carious lesions and other defects in teeth. It provides you with an overview of restorative biomaterials important to the rehabilitation / reconstruction of teeth to build a functional occlusion.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Describe the action of commonly used pharmaceutical agents and their subsequent handling by the body.
- 2. Explore medications that may have an impact on oral health care.

- 3. Examine common emergency drugs and their indications.
- 4. Describe the use of nitrous oxide and IV sedation in dental environments.
- 5. Explain the concept of pain and how it is expressed by humans.
- 6. Explore diverse pain management strategies in dental settings.
- 7. Explain the pharmacology of local anesthetic agents and vasoconstrictors.
- 8. Explain how to calculate and document appropriate doses of local anesthetics for people throughout the life cycle.
- 9. Describe complications and emergencies which may be encountered with their administration.
- 10. Describe common techniques of local anesthesia including maxillary and mandibular techniques.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Autocoids and antihistamines
- 2. Cardiovascular drugs
- 3. Psychotherapeutics
- 4. Anticonvulsants
- 5. Adrenocorticosteroids
- 6. Emergency drugs
- 7. Nitrous oxide and IV sedation
- 8. Concept of pain and pain management during dental hygiene appointments including visualization and self-hypnosis
- 9. Physical and psychological evaluation
- 10. Pain behaviour and distress in children and adults
- 11. Neurophysiology and pharmacology of local anesthetics and vasoconstrictors
- 12. Local and systemic complications
- 13. Selection of agents for individual people
- 14. Calculation of maximum dose for a person
- 15. Anatomic considerations for the delivery of local anesthesia
- 16. Injection techniques maxillary and mandibular infiltrations and blocks
- 17. Problem-solving to achieve profound anesthesia

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Written Examinations Mid-term Examination	25%
	Final Examination	25%
Task 2	Case analysis (Teamwork)	15%
Task 3	Decision analysis/decision tree for selection of anesthetic agents (Teamwork)	15%
Task 4	Annotated bibliography related to a PICO question about a medication impacting oral tissues (Teamwork)	20%

9.1 How should this course be graded?

C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 201, 202, 203, 204 and 208
- 3.4 Prerequisite(s) or Corequisite(s):

- 3.5 Corequisite(s): DEHY 211, 213, 214 and 218
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 213
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Oral Health Sciences IV Course Short Title (maximum 30 characters): Oral Health Sciences IV

2.4	Total Hours:	Lecture: 3	Seminar:	Lab	: Tu	utorial	Other:
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lab	: Tu	utorial	Other:
2.6	Term in which it	will be offered:	: T1	T2 X	T1 or T2	T1 and	1 T2

2.7 Prerequisite: DEHY 201, 202, 203, 204 and 208

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less): You will continue to increase your knowledge of general and oral pathology and to explore the multiple and complex connections between oral and general health to support your clinical decision-making.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

1. Examine the current understanding of the oral microbiome as an influence in the triggering, development, and progression of oral and systemic diseases.

- 2. Explore the difference between the health status of symbiosis and dysbiosis. Examine the oral cavity from the perspective of being an important gateway between the external environment and the human body.
- 3. Examine the impact of systemic disorders on oral health and quality of life.
- 4. Examine the implications of systemic disorders on dental hygiene services.
- 5. Review gingival disease and conditions throughout the life cycle.
- 6. Examine the histological and clinical manifestations of periodontal disease and conditions based on the AAP classification.
- 7. Use the AAP classification to support dental hygiene diagnoses, treatment plans, and prognoses.
- 8. Examine the phases of periodontal therapy with an emphasis on the management of periodontal disease.
- 9. Explore oral mucosal conditions and their impact on oral health and oral health services.
- 10. Examine diseases of the jaws and salivary glands and their possible impact.
- 11. Explore odontogenic and non-odontogenic cysts and tumours and their possible impact.
- 12. Explore the management of the above diseases and conditions.
- 13. Analyze the role of dental hygienists in the assessment, diagnosis, management, and referral of oral lesions and conditions.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Cardiovascular and respiratory disorders
- 2. Neurological disorders including dementia and Alzheimer's
- 3. Endocrine disorders
- 4. Gastrointestinal and respiratory disorders
- 5. Autoimmunity and hypersensitivities
- 6. Pathophysiological role of the human oral microbiome in health and disease
- 7. Links between periodontal disease and the immune response at a cellular and biochemical level
- 8. Gingival diseases and conditions revisited
- 9. Periodontal diseases and conditions
- 10. Integration of the AAP classification into clinical decisions
- 11. Management of periodontal conditions including surgical and non-surgical interventions
- 12. Implant infections and care
- 13. Antimicrobial therapy and low-level laser therapy in periodontal therapy
- 14. Dental pulp pathologies including endodontic-periodontic lesions
- 15. Oral mucosal conditions and their management

- 16. Diseases of the jaws and salivary glands and their management
- 17. Odontogenic and non-odontogenic cysts and tumors and their management

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Case Based Final Examination 2		
Task 2	OSCE – Radiographic interpretation		
Task 3	Annotated bibliography related to PICO question about a gingival or periodontal condition experienced by adults (Teamwork)		
Task 4	Critical analysis of assigned studies (n=3) (Teamwork) 30%		
Task 5	Annotated bibliography related to PICO question about a gingival or periodontal condition experienced by children (Teamwork)	20%	
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please s	specify:	

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No

If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
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FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

3.1 Permission Required: No

- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 201, 202, 203, 204 and 208
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 211, 212, 214 and 218
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 214
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Community Practice II Course Short Title (maximum 30 characters): Community Practice II

2.4	Total Hours:	Lecture: 13	Seminar:	Lab	: Tuto	rial Other:	26
2.5	Weekly Hours:	Lecture: 1	Seminar:	Lab	: Tuto	rial Other:	2
2.6	Term in which it	will be offered	: T1	т2 х	T1 or T2	T1 and T2	

2.7 Prerequisite: DEHY 201, 202, 203, 204 and 208

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course is designed to provide you with enhanced abilities to promote access to care for diverse people in the community. You will have the opportunity to deepen your understanding of your role in facilitating change and applying the ADPIE process to support a community group in meeting a culturally relevant oral health goal.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Develop, implement, and evaluate a lesson with student partners.
- 2. Describe the uses and development of professional portfolios.
- 3. Explore outcome measurements from a formative and summative perspective.

- 4. Compare and contrast ways of initiating and managing change for self and others.
- 5. Examine approaches to coaching, networking, and mentorship.
- 6. Explore the boundaries between individual and social responsibility with regard to health status.
- 7. Explore opportunities to collaborate with other professions and members of the community in a position to support the oral health of people.
- 8. Examine strategies to advocate with individuals, families, and communities.
- 9. Explore communication approaches to promote health literacy of people including those who have English as an additional language.
- 10. Support the development of shared language to promote communication about roles, knowledge, abilities, and oral health and wellness.
- 11. Develop professional relationships based on respect, empathy, and trust.
- 12. Contribute to the assessment and improvement of the health literacy of people.
- 13. Recognize the influence of the social determinant of health on the self-care habits of individuals, families, groups, and communities.
- 14. Create a culturally safe and relevant environment to support learning.
- 15. Coach individuals and groups in learning about oral health knowledge, skills, and habits.
- 16. Support people to develop self-management skills.
- 17. Engage with community leaders, care workers, and other professionals on issues related to oral self-care.
- 18. Assess challenges, barriers, and opportunities for effective communication with diverse individuals, groups, cultures, and communities.
- 19. Use professional resources to support the development of culturally safe and relevant oral health messages.
- 20. Evaluate the effectiveness of learning activities and revise the learning strategies as needed.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Lesson planning, implementation, and evaluation
- 2. Portfolio development
- 3. Networking, coaching, and mentorship
- 4. Formative and summative assessment of outcomes
- 5. Social and individual responsibility for health status
- 6. Community leaders and influencers
- 7. Advocacy with individuals, families, and communities
- 8. Approaches to promote health literacy including plain language communication
- 9. Communication with people who have English as an additional language

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Mini-lesson related to psychomotor, cognitive and /or value theme	20%
Task 2	Portfolio development to dental hygiene competencies	20%
Task 3	Participation in community meetings – ADPIE in community Term community meeting End of term community meeting	10% 10%
	The community meetings in this term are designed to provide you with feedback about the community work in which you are involved. It will allow community members an opportunity to share their ideas with you to support services that are aligned with their needs and desires.	
Task 4	ADPIE Analysis: Assess, plan, implement, and collect formative data about the outcomes of your work in the community (Teamwork)	15%
Task 5	Generate a plain language communication for a specific population (Teamwork)	15%
Task 6	Professionalism – instructor, self- and peer assessment	10%
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progre N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please	ss) specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program

- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement ILRQ – Indigenous Learning Requirement QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 201, 202, 203, 204 and 208
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 211, 212, 213 and 218
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 218
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Practice IV Course Short Title (maximum 30 characters): Dental Hygiene Practice IV

2.4	Total Hours:	Lecture:	Seminar:	Lab):	Tutorial	Other: 72
2.5	Weekly Hours:	Lecture:	Seminar:	Lab):	Tutorial	Other: 6
2.6	Term in which it	t will be offered	: T1	T2 X	T1 or T2	2 T1	and T2

2.7 Prerequisite: DEHY 201, 202, 203, 204 and 208

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course is designed to expand your dental hygiene judgments and abilities to provide therapeutic, preventive, and health promotion services. You will also have opportunities to apply the ADPIE process to provide culturally relevant services with individuals, families, and communities.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Administer local anesthesia working with student partners and people accessing dental care.
- 2. Explore oral photography from the perspective of supporting a case presentation.
- 3. Examine common sources of malfunction of dental equipment and strategies to address them.

- 4. Take responsibility for decisions and actions that reflect critical thinking and problem-solving within a dental hygiene practice environment.
- 5. Work effectively as a member of an oral health team to provide services within practice settings.
- 6. Apply standards, best practices, and protocols to support the safety of the people in your practice and positive oral health outcomes for the people involved in the care.
- 7. Perform needs assessments with individuals, families, and communities using evidenceinformed, culturally safe, and compassionate approaches.
- 8. Differentiate between significant and non-significant findings when summarizing assessment data including those with medically complex needs.
- 9. Recognize the rights of people and communities to determine the services they wish to receive.
- 10. Develop evidence-informed diagnostic statements.
- 11. Develop treatment options based on the individual's values, needs, beliefs, and abilities.
- 12. Plan strategies for gaining and maintaining informed consent with people, families, and communities.
- 13. Work with others to identify alternative care options for people for whom the initiation or continuation of treatment is contraindicated.
- 14. Initiate and manage primary oral health care with individuals focusing on risk assessment, prevention, education, therapeutic services, and referrals.
- 15. Assist with scheduling, accounts receivable, inventory control, and equipment maintenance procedures.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 2-6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Delivery of local anesthesia
- 2. Re-visit oral photography from the perspective of case presentations and caries management plans
- 3. Problem-solving dental equipment
- 4. Practicing as a professional
- 5. Managing the practice environment
- 6. Integrating the ADPIE approach
- 7. Providing professional health promotion, preventive, and therapeutic services

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Pre-clinical competencies with student partners Delivery of local anesthesia –maxillary and mandibular injections with student partners, fabrication of a temporary restoration, & panoramic radiograph.			
Task 2	Integrate the ADPIE process to support holistic, person-centered care (n=2) You will be implementing each phase of the ADPIE process followed by a documented self-assessment of the care provided to specific criteria.			
Task 3	Caries Management Plan (1) Develop a caries management plan for a person at risk.			
Task 4	Case Presentation (n=1) Presentation of a person's case to demonstrate a holistic, person-centered approach to the integrating of health promotion, prevention, and therapeutic services.			
Task 5	Local Anesthesia with people (n= 2 block injections)			
Task 6	 Professional capacity as expressed through the shared core domains of: professionalism, evidence-informed decision-making communication, collaboration, and practice management 			

9.1 How should this course be graded?

C – Completed Requirements
(Grade options for instructor: Completed Requirements, Fail, IP In Progress)
N – Numeric/Percentage
(Grade options for instructor: grade of 0% to 100%, IP in Progress)
P – Pass/Fail
(Grade options for instructor: Pass, Fail, In Progress)
S – Special
(Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	<u>Clinical</u>	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

FNAR Fine Arts HUM Humanities SCIE Science SOCS Social Science

ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 201, 202, 203, 204 and 208
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 211, 212, 213 and 214
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 301
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Theory & Practice V Course Short Title (maximum 30 characters): Dental Hygiene Theory & Practice V

2.4	Total Hours:	Lecture: 13	Seminar:		Lab: 26	Tutorial	Other
2.5	Weekly Hours:	Lecture: 1	Seminar:		Lab: 2	Tutorial	Other
2.6	Term in which it	will be offered	: T1 X	Т2	T1 or T	2 Т	1 and T2

2.7 Prerequisite: DEHY 211, 212, 213, 214 and 218

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will expand your knowledge of the recognized dental specialities to provide you with an appreciation of the scope of oral health services available. It will expand your understanding of the importance of effective referral approaches to build your advocacy abilities.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene
- 4. Please list the learning objectives for this course: Learning outcomes:
 - 1. Examine recognized specialties in dentistry other than the public health specialty.
 - 2. Explain common therapeutic services provided by different dental specialists.
 - 3. Explore unique aspects of oral self-care related to the speciality.

- 4. Explore pre- and post surgical care and instructions associated with the specialty.
- 5. Analyze criteria for referrals to various dental specialists.
- 6. Review the elements of effective referral communications.
- 7. Develop effective referral communications.
- 8. Explore advocacy and how dental hygienists can support individuals in meeting their needs.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) Topics include but are not limited to:

- 1. Periodontics with a focus on Phases II & III Therapy
- 2. Endodontics
- 3. Prosthodontics
- 4. Oral medicine and pathology
- 5. Oral and maxillofacial radiology
- 6. Pediatric dentistry
- 7. Orthodontics and dentofacial orthopedics
- 8. Oral and maxillofacial surgery and dental anesthesia
- 9. Advocating with individuals

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Final OSCE Examination	15%
Task 2	2 Case analyses for 15% each (Teamwork)	30%
Task 3	Clinical decision analysis/decision tree related to dental specialty referrals (Teamwork)	15%
Task 4	Development of a referral letter / communication based on a provided case.	10%

Task 5	Concept Analysis of Advocacy (Teamwork)*	20%
Task 6	Professionalism – instructor, self- and peer assessment	10%

- 9.1 How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:
- 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
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IN3	Internship - General	SUP	Teacher Supervision

IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 211, 212, 213, 214 and 218
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 302,304, 308 and DETH 303
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 302
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Heath Sciences V Course Short Title (maximum 30 characters): Health Sciences V

2.4	Total Hours:	Lecture: 39	Seminar:	Lal	b:	Tutorial	Other
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lal	b:	Tutorial	Other
2.6	Term in which it	: will be offered	: T1 X	Т2	T1 or T2	2 T1 an	d T2

2.7 Prerequisite: DEHY 211, 212, 213, 214 and 218

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will continue to deepen your understanding of the growing evidence supporting associations between oral and general health. It will also increase your knowledge of pharmacology, nutrition, and pathology to support the development of your diagnostic and treatment planning abilities.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene
- 4. Please list the learning objectives for this course: Learning outcomes:
 - 1. Analyze current evidence surrounding oral-systemic links.
 - 2. Explain the role of Health Canada and the National Association of Pharmacy Regulatory Authorities (NAPRA) in scheduling drugs in Canada.

- 3. Review the pharmacology of drugs used for the management of oral pathologies and conditions within the dental hygiene scope of practice.
- 4. Analyze optimal therapy (medication and non-medication) considering actual and potential contraindications/concerns including drug-person, drug-condition, and drug-drug interactions.
- 5. Examine how to safely and effectively, communicate medication information with the person and others involved in supporting the person.
- 6. Explain how to manage medications including documentation, handling, and storage.
- 7. Review the limitations and benefits of prophylaxis with antimicrobials.
- 8. Analyze how to review and monitor the impact of drugs on people's outcomes.
- 9. Analyze the role of dental hygienists in the diagnosis, management, and referral of neoplastic and non-neoplastic oral lesions.
- 10. Explain modifiable risk factors and non-modifiable risk factors for oral and oropharyngeal cancers.
- 11. Analyze the impact of Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) on oral health care.
- 12. Explore the oral health impact of chemotherapeutics and radiation therapy to treat cancers.
- 13. Explore transplant immunology.
- 14. Analyze eating patterns throughout the life cycle.
- 15. Explain how to support eating competence working with individuals, families, and communities.
- 16. Explore dietary considerations important for oral health and quality of life.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Inflammation as a common factor between oral and systemic conditions
- 2. Current evidence regarding oral-systemic links including the relationship between periodontitis and cardiovascular disease, Type 2 diabetes, respiratory diseases, and adverse pregnancy outcomes
- 3. New relationships being investigated for oral-systemic links
- 4. Drug scheduling in Canada
- 5. Prescription protocols and management of medications including documentation, handling, and storage
- 6. Prophylactic antibiotic use
- 7. Opioid crisis and the role of oral health professionals
- 8. Cannabis uses and abuses What is the evidence?
- 9. E-cigarettes and tobacco products including commercial and sacred tobacco products
- 10. Neoplastic and non-neoplastic lesions of the head and neck

- 11. Modifiable risk factors and non-modifiable risk factors for oral and oropharyngeal cancer
- 12. Oral and oropharyngeal squamous cell carcinoma, and HPV infection and vaccinations
- 13. Cancer chemotherapeutics and radiation therapy
- 14. Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS)
- 15. Transplant immunology
- 16. Sexually transmitted diseases
- 17. Eating competence and food insecurity
- 18. Child nutrition patterns, and nutrition and ageing
- 19. Sugar-sweetened beverage consumption, and obesity prevention
- 20. Eating disorders and the oral cavity

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Final case-based examination	20%
Task 2	Case analysis related to oral pathology and pharmacology (Teamwork) (n=2)	30%
Task 3	Annotated bibliography related to a question about cancer (Teamwork)	20%
Task 4	Annotated bibliography related to a question about a nutrition issue (Teamwork)	20%
Task 5	Professionalism – instructor, self- and peer assessment	10%

- 9.1 How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:
- 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

FNAR Fine Arts HUM Humanities SCIE Science SOCS Social Science

ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 211, 212, 213, 214 and 218
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 301, 304, 308 and DETH 303
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 304
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Community Practice II Course Short Title (maximum 30 characters): Community Practice II

2.4	Total Hours:	Lecture: 13	Seminar:	La	ab:	Tutorial	Other: 26
2.5	Weekly Hours:	Lecture: 1	Seminar:	La	ab:	Tutorial	Other: 2
2.6	Term in which it	will be offered	: T1 X	Т2	T1 or T	2 T1	and T2

2.7 Prerequisite: DEHY 211, 212, 213, 214 and 218

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less): This course is designed to continue to expand your knowledge of leadership and advocacy approaches so important to supporting communities. You will also be introduced to social entrepreneurship and social intrapreneurship to support your work at a community level.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Analyze the relationship between social entrepreneurship, social intrapreneurship, leadership, advocacy, and managerial competencies.
- 2. Analyze the important elements of a project/business plan and how to communicate /present the elements to possible funding sources.

- 3. Analyze approaches to measuring outcomes of clinical and community initiatives.
- 4. Explore abilities to support negotiation and conflict management.
- 5. Examine approaches to work with professional interpreters, brokers, and community health workers.
- 6. Analyze the impact of intergenerational trauma and violence, and its impact on oral health care.
- 7. Explore mental health first aid to support the people of your community (see https://www.mentalhealthcommission.ca/English/resources/mental-health-first-aid)
- 8. Explore the development of social marketing messages related to oral health.
- 9. Use principles of critical reflection to support the empowerment of individuals and communities.
- 10. Strive to develop partnerships with communities, other professionals, and other partners to create culturally safe health promotion, and preventive goals.
- 11. Apply knowledge of the social and ecological determinants of health and associated inequities when participating in the assessment and planning of health promotion, and preventive activities and programs.
- 12. Support people within communities to build their capacity for oral health and wellness based on their beliefs and spiritual values.
- 13. Work with community partners to select and implement evidence-informed and culturally safe health promotion and preventive strategies and interventions.
- 14. Raise awareness of risk factors such as diet, drugs, and substances such as commercial tobacco and alcohol on oral and general health.
- 15. Use a range of preventive agents and products based on best practice standards.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Social entrepreneurship and intrapreneurship, leadership, advocacy, and managerial competencies
- 2. Small business development resources in the community
- 3. Project/business plan development
- 4. Measuring oral health outcomes of clinical and community initiatives
- 5. Professional interpreters, brokers, and community health workers
- 6. Negotiation and conflict management
- 7. Intergenerational violence and trauma
- 8. Mental health first aid

9. Social marketing

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Portfolio development to dental hygiene competencies	20%
Task 2	Participation in community meetings – ADPIE in community Mid-term End of term	10% 10%
	As in previous term, the community meetings are designed to involve the community members with whom you are working.	
Task 3	Annotated bibliography related to oral health outcomes measurements (Teamwork)	20%
Task 4	Create a draft project/business model to support access to oral health services within your community (Teamwork)	20%
Task 5	Create a social marketing message for a target population	10%
Task 6	Professionalism – instructor, self- and peer assessment	10%
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Prog N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, pleas	ress) se specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

11.1 Proposed instructor: N/A

- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts HUM Humanities SCIE Science
- SCIE Science
- SOCS Social Science

ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 211, 212, 213, 214 and 218
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 301, 302, 308 and DETH 303
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.


1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 308
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Practice V Course Short Title (maximum 30 characters): Dental Hygiene Practice V

2.4	Total Hours:	Lecture: 13	Seminar:		Lab:	Tutoria	al	Other: 26
2.5	Weekly Hours:	Lecture: 1	Seminar:		Lab:	Tutoria	al	Other: 2
2.6	Term in which it	t will be offered	: T1 X	T2	T1 or T	2	T1 and	d T2

2.7 Prerequisite: DEHY 211, 212, 213, 214 and 218

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

These practice experiences will help to expand your understanding of the ADPIE process. You will increase your abilities to provide holistic, person-centered services with individuals, families, and communities as well as continuing to develop your self- and peer-assessment abilities that are so critical to health professionals.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene
- 4. Please list the learning objectives for this course: Learning outcomes:
 - 1. Analyze ethical dilemmas arising in practice contexts.
 - 2. Assist a person with a wheelchair transfer

- 3. Take responsibility for decisions and actions that reflect critical thinking and problem-solving within a dental Hygiene practice environment.
- 4. Work effectively as a member of an oral health team to provide services within practice environments.
- 5. Apply standards, best practices, and protocols to support the safety of the people in your practice and positive oral health outcomes for the people involved in the care.
- 6. Perform needs assessments with individuals, families and communities using evidenceinformed, culturally safe, and compassionate approaches.
- 7. Differentiate between significant and non-significant findings when summarizing assessment data including those with medically complex needs.
- 8. Recognize the rights of people and communities to determine the care they wish to receive.
- 9. Develop evidence-informed diagnostic statements.
- 10. Develop treatment options based on the values, needs, beliefs, and abilities of individuals, families, and communities.
- 11. Plan strategies for gaining and maintaining informed consent with people, families, and communities.
- 12. Work with others to identify alternative care options for people for whom the initiation or continuation of treatment is contraindicated.
- 13. Initiate and manage primary oral health care with individuals, families and communities focusing on risk assessment, prevention, education, therapeutic services, and referrals.
- 14. Assist with scheduling, accounts receivable, inventory control, and equipment maintenance procedures.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Ethical Reasoning
- 2. Wheelchair transfers
- 3. Practicing as a professional
- 4. Managing the practice environment
- 5. Integrating the ADPIE approach
- 6. Providing professional health promotion, preventive, and restorative services

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1 Integrate the ADPIE process to support holistic, person-centered care (n=4)¹ You will be implementing each phase of the ADPIE process followed by a documented self-assessment of the care provided to specific criteria.

Task 2 Case Presentations (n=2)

Presentation of people's data to demonstrate a holistic, person-centered approach to the integrating of health promotion, prevention, and therapeutic services.

Task 3 **Evaluation of Caries Management Plan (n=1)** Presentation of a person's data to evaluate the outcome of a caries management plan.

Task 4 Ethical dilemma analysis (Teamwork)

- Task 5 **Professional capacity** as expressed through the shared core domains of:
 - professionalism,
 - evidence-informed decision-making
 - communication,
 - collaboration, and
 - practice management
 - 9.1 How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:
 - 9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 211, 212, 213, 214 and 218
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 301, 302, 304 and DETH 303
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 311
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Theory & Practice VI Course Short Title (maximum 30 characters): Dental Hygiene Theory & Practice VI

2.4	Total Hours:	Lecture: 13	Seminar:	Lab	o: 26	Tutoria	l Other
2.5	Weekly Hours:	Lecture: 1	Seminar:	Lab	o: 2	Tutoria	l Other
2.6	Term in which it	will be offered:	: T1	т2 х	T1 or T	2	T1 and T2

2.7 Prerequisite: DEHY 301, 302, 304, 308 and DETH 303

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will deepen your abilities to understand the complexities of coordinating, managing, and evaluating care for diverse people and families. You will also be exploring your role as a health professional in participating in the management of incidents, outbreaks, and emergencies.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Explore decision-making approaches in rural and remote areas.
- 2. Examine the diagnostic potential of saliva.
- 3. Examine the importance of screening programs in promoting the oral health of people.

- 4. Explore the possible contributions of tele-health and e-health in supporting the oral health of people.
- 5. Examine the evidence to support the four phases of periodontal therapy.
- 6. Participate in the development of mechanisms to monitor, evaluate, and modify services for their cultural relevance, safety, effectiveness, and quality.
- 7. Collect data regarding the outcomes of services provided within the dental hygiene clinic to support ongoing revision and implementation of care.
- 8. Describe the current and potential role of oral health professionals in the management of community incidents, outbreaks, and emergencies.
- 9. Examine strategies to support the transition from an educational setting to practice settings including regulatory requirements and ongoing competence activities.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Co-ordination and management of care including decision-making in rural & remote areas
- 2. Tele-health and e-health approaches
- 3. The potential role of saliva in oral and systemic diagnostics
- 4. Oral screening approaches the scope and the evidence to support them
- 5. Phases of periodontal therapy -the scope and the evidence to support them Halitosis the etiology and the treatments

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Evaluating outcomes – data collected by the dental hygiene clinic and within the community about the outcomes of services is assessed in relation to the literature (Teamwork)	20%
Task 2	Case analyses (Teamwork)	20%
Task 3	Annotated bibliography related to e-health and tele-health approaches (Teamwork)	20%

Task 4	Annotated bibliography related to a general or oral health screening initiative / program (Teamwork)	20%
Task 5	Personal Conception of Advocacy in Practice (1-page social marketing communication for peers in future practice)	10%
Task 6	Professionalism – instructor, self- and peer assessment	10%

9.1 How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Progress) N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress) P – Pass/Fail (Grade options for instructor: Pass, Fail, In Progress) S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class

FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
IND	Independent Studies	TEL	Televised Class
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 301, 302, 304, 308 and DETH 303
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 312, 314, 318 and DETH 313
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 312
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Health Sciences VI Course Short Title (maximum 30 characters): Health Sciences VI

2.4	Total Hours:	Lecture: 39	Seminar:	Lab): T	Tutorial	Other
2.5	Weekly Hours:	Lecture: 3	Seminar:	Lab): T	Tutorial	Other
2.6	Term in which it	will be offered:	: T1	T2 X	T1 or T2	T1 an	d T2

2.7 Prerequisite: DEHY 301, 302, 304, 308 and DETH 303

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course will allow you additional experiences to integrate your knowledge of general and oral health care with its multiple complexities. You will be exploring the scope of dental hygiene practice through problem-based learning cases working with other health professional students to unravel the many issues that require attention.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Navigate through diverse databases and resources about oral and general health.
- 2. Differentiate between more and less valid, reliable, and/or credible types of information.
- 3. Weigh various perspectives, biases, and assumptions related to complex issues.

- 4. Take responsibility for integrating current best practice guidelines and standards.
- 5. Assess the relevance of resources for practice decisions.
- 6. Develop approaches for dealing with the ambiguities, incomplete information, and the uncertainty of an ever-changing environment.
- 7. Collaborate with other health professional students to analyze problem-based learning cases.
- 8. Exercise initiative, personal responsibility, and accountability working in an interprofessional team setting.
- 9. Manage own learning in changing circumstances.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) The topics will unfold based on student generated issues and those arising from the problembased learning (PBL) cases involving a child, an adult, and a family.

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Analysis of the 3 PBL cases (25% / case) Teamwork	75%
Task 2	Self and peer assessment related to the 3 cases (5% per case)	15%
Task 3	Professionalism – instructor	10%
9.1	How should this course be graded? C – Completed Requirements (Grade options for instructor: Completed Requirements, Fail, IP In Pro N – Numeric/Percentage	gress)

(Grade options for instructor: grade of 0% to 100%, IP in Progress)

P – Pass/Fail

(Grade options for instructor: Pass, Fail, In Progress)

S – Special (Grade options for instructor: NA – Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
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MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 301, 302, 304, 308 and DETH 303
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 311, 314, 318 and DETH 313
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 314
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Community Practice IV Course Short Title (maximum 30 characters): Community Practice IV

2.4	Total Hours:	Lecture: 13	Seminar:	Lab): Т	Tutorial	Other: 26
2.5	Weekly Hours:	Lecture: 1	Seminar:	Lab): Т	Tutorial	Other: 2
2.6	Term in which it	t will be offered	: T1	T2 X	T1 or T2	T1 and	d T2

2.7 Prerequisite: DEHY 301, 302, 304, 308 and DETH 303

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less):

This course is designed to expand your knowledge and abilities in social entrepreneurship and intrapreneurship, leadership, and advocacy so you can increase your engagement with community members. You will gain abilities to explore the outcomes of dental hygiene services with community members and to generate relevant community reports.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Work with others to create environments that support social justice through the acknowledgement of power, privilege, and oppression.
- 2. Examine the elements of a report focused on community audiences.

- 3. Explore how to share data related to your work with community members.
- 4. Explore the implementation and ongoing operational challenges of a new program / business.
- 5. Explore funding sources available in the public and private sectors for oral health programs and projects.
- 6. Analyze strategies to interpret, work with, and evaluate budgets.
- 7. Explore insurance plans and accounting programs.
- 8. Explore issues and therapies related to gender identity and change
- 9. Examine contract and labour law with a focus on the implications for dental hygiene practice.
- 10. Explore resume development and interview strategies to support you in communicating your abilities, goals, and vision.
- 11. Explore strategies for self-advocacy within varied dental hygiene practice settings.
- 12. Use principles of critical reflection to support the empowerment of individuals and communities.
- 13. Strive to develop partnerships with communities, other professionals, and other partners to create culturally safe health promotion, and preventive goals.
- 14. Apply knowledge of the social and ecological determinants of health and associated inequities when participating in the assessment and planning of health promotion, and preventive activities and programs.
- 15. Support people within communities to build their capacity for oral health and wellness based on their beliefs and values.
- 16. Work with community partners to select and implement evidence-informed and culturally safe health promotion and preventive strategies and interventions.
- 17. Raise awareness of risk factors such as diet, drugs, and substances such as commercial tobacco and alcohol on oral and general health.
- 18. Use a range of preventive agents and products based on best practice standards.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? None
 - 6.2 Courses for which this course will be a prerequisite? All Term 6 courses in the Dental Hygiene program
 - 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Implementation phase and ongoing challenges of new programs / businesses
- 2. Funding sources
- 3. Working with budgets
- 4. Structural competence including stigma, discrimination, and prejudice
- 5. LGBT/ 'queer'/two-spirit communities
- 6. Transgender hormonal and non-hormonal therapy

- 7. Community reports how to structure and communicate information
- 8. Accounting packages and insurance claims
- 9. Contract and labour law
- 10. Resume development and Interview strategies
- 11. Self-advocacy within diverse dental hygiene practice contexts

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1	Portfolio finalization and presentation to colleagues	15%
Task 2	Develop a community report to share the outcomes of your community work: (Teamwork)	
	Develop an outline for the report	10%
	Develop a community report	20%
Task 3	Participate in a community meeting to share your report with community members (Teamwork)	10%
	This community meeting is designed to provide you an opportunity to share your formative and summative information with community members to support their ongoing planning to meet the needs of their members.	
Task 4	Identify small business resources in your community and your province	20%
Task 5	Revision of project proposal / business model to include a plan for accessing relevant community resources to assist you in possible implementation (Teamwork)	15%
Task 6	Professionalism – instructor, self- and peer assessment	10%
9.1	How should this course be graded? C – Completed Requirements	
	(Grade options for instructor: Completed Requirements, Fail, IP In Progre	ess)
	N – Numeric/Percentage	
	(Grade options for instructor: grade of 0% to 100%, IP in Progress)	
	P - Pass/Fall	
	(Grade options for instructor: Pass, Fall, in Progress) S – Special	
	(Grade options for instructor: NA – Grade Not Applicable) If other, please	specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

11. Resources

- 11.1 Proposed instructor: N/A
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Instructors are to be hired for the program
- 11.3 Are sufficient library or other research resources available for this course? Yes
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? No

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use tuition category) TC51
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? No
- If so, please include an approved "Application for New Fee or Fee Change Form" <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
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IND	Independent Studies	TEL	Televised Class
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LL	Lecture/Laboratory (Dent Only)	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

- ILRQ Indigenous Learning Requirement
- QRRQ Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 301, 302, 304, 308 and DETH 303
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 311, 312, 318 and DETH 313
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

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- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:



1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: Dentistry
- 1.2 Department with academic authority: Non-departmentalized
- 1.3 Term from which the course is effective: 202409

2. Information required for the Catalogue

- 2.1 Label & Number of course: DEHY 318
- 2.2 Academic credit units: 3
- 2.3 Course Long Title (maximum 100 characters): Dental Hygiene Practice IV Course Short Title (maximum 30 characters): Dental Hygiene Practice IV

2.4	Total Hours:	Lecture: 13	Seminar:	Lab	: Tutor	ial Other: 26
2.5	Weekly Hours:	Lecture: 1	Seminar:	Lab	: Tutor	ial Other: 2
2.6	Term in which it	t will be offered	: T1	T2 X	T1 or T2	T1 and T2

2.7 Prerequisite: DEHY 301, 302, 304, 308 and DETH 303

If there is a prerequisite waiver, who is responsible for signing it? None

- D Instructor/Dept Approval
- H Department Approval
- I Instructor Approval

2.8 Catalogue description (150 words or less): These clinical practice hours provide you with opportunities to refine all aspects of the ADPIE process of care as you work collaboratively with the members of the clinical team and others in the community to support the oral health of community members.

- 2.9 Do you allow this course to be repeated for credit? Yes
- 3. **Please list rationale for introducing this course:** Core course in the proposed Bachelor of Science in Dental Hygiene

4. Please list the learning objectives for this course: Learning outcomes:

- 1. Analyze ethical dilemmas arising in practice contexts.
- 2. Take responsibility for decisions and actions that reflect critical thinking and problem-solving within a clinical practice environment.

- 3. Work effectively as a member of an oral health team to provide services within clinical and community practice environments.
- 4. Apply standards, best practices, and protocols to support the safety of the people in your practice and positive oral health outcomes for the people involved in the care.
- 5. Perform needs assessments with individuals, families and communities using evidenceinformed, culturally safe, and compassionate approaches.
- 6. Differentiate between significant and non-significant findings when summarizing assessment data including the data of persons with medically complex needs.
- 7. Recognize the rights of people and communities to determine the services they wish to receive.
- 8. Develop evidence-informed diagnostic statements.
- 9. Develop treatment options based on the values, needs, beliefs and abilities of individuals, families, and communities.
- 10. Plan strategies for gaining and maintaining informed consent with people, families, and communities.
- 11. Work with others to identify alternative care options for people for whom the initiation or continuation of treatment is contraindicated.
- 12. Initiate and manage primary oral health care with individuals, families and communities focusing on risk assessment, prevention, education, therapeutic services, and referrals.
- 13. Assist with scheduling, accounts receivable, inventory control, and equipment maintenance procedures.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? No If so, were these departments consulted? (Include correspondence) N/A Were any other departments asked to review or comment on the proposal? No

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? None
- 6.2 Courses for which this course will be a prerequisite? All Term 6 courses in the Dental Hygiene program
- 6.3 Is this course to be required by your majors, or by majors in another program? Only Dental Hygiene students

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.) *Topics include but are not limited to:*

- 1. Ethical Reasoning
- 2. Practicing as a professional
- 3. Managing the practice environment
- 4. Integrating the ADPIE approach
- 5. Providing professional health promotion, preventive, and restorative services

8. Enrolment

- 8.1 Expected enrollment: 18
- 8.2 From which colleges? Dentistry only

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

Task 1 Orthodontic Procedures: in simulation setting

Task 2Integrate the ADPIE process to support holistic, person-centered care (n=4)You will be implementing each phase of the ADPIE process followed by a
documented self-assessment of the care provided to specific criteria.

Task 3 Case Presentations (n=4)¹

Presentation of people's data to demonstrate a holistic, person-centered approach to the integrating of health promotion, prevention, and therapeutic services.

Task 4 Evaluation of Caries Management Plan (n=1)

Presentation of a person's data to evaluate the outcome of a caries management plan.

Task 5 Ethical dilemma analysis (Teamwork)

Task 6 **Professional capacity** as expressed through the shared core domains of:

- professionalism,
- evidence-informed decision-making
- communication,
- collaboration, and
- practice management
- 9.1 How should this course be graded?
 C Completed Requirements
 (Grade options for instructor: Completed Requirements, Fail, IP In Progress)
 N Numeric/Percentage
 (Grade options for instructor: grade of 0% to 100%, IP in Progress)
 P Pass/Fail
 (Grade options for instructor: Pass, Fail, In Progress)
 S Special
 (Grade options for instructor: NA Grade Not Applicable) If other, please specify:

9.2 Is the course exempt from the final examination? No

10. Required text

Include a bibliography for the course.

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Detailed Course Information

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PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

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- SCIE Science
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- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

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3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: No
- 3.2 Restriction(s): Dentistry, Bachelor of Science (DH), DH, 1
- 3.3 Prerequisite(s): DEHY 301, 302, 304, 308 and DETH 303
- 3.4 Prerequisite(s) or Corequisite(s):
- 3.5 Corequisite(s): DEHY 311, 312, 314 and DETH 313
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information: N/A

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: N/A

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, Degree Works will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: N/A

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

The Bachelor of Science in Dental Hygiene [B.Sc. (DH)]

The Bachelor of Science in Dental Hygiene [B.Sc. (DH)] is a direct-entry degree program that consists of 24 months of study over a three-year period. Students will be educated and trained to the standards required to write and pass the NDHEB exams and be eligible for licensure in all provinces and territories in Canada. This program will occur primarily in the evening hours to allow for those students who have other commitments during the day to achieve their goal of becoming an oral health professional.

The admission process is outlined in the <u>Admission Requirements</u> section of this Catalogue. The following outlines the program of study for the program:

Bachelor of Science in Dental Hygiene (BSc. DH) (112 credit units)

Students must successfully complete all courses in each year of the program to progress on to the next year and on to graduate.

Year 1 – 43 credit units

Term 1 (23 cu)

DEHY 101	Dental Hygiene Theory & Science I	2
DEHY 102	Health Sciences I	3
DEHY 103	Oral Health Sciences I	3
DEHY 104	Behavioural Sciences I	3
DETH 105	General Anatomy & Physiology I	3
DEHY 106	Principles and Practice in Dentistry	3
DENT 388	Infection Control in Dentistry	3
DEHY 108	Dental Hygiene Practice	3
Term 2 (2	1 cu)	
DEHY 111	Dental Hygiene Theory & Science II	3
DEHY 112	Health Sciences II	3
DEHY 113	Oral Health Sciences II	3
DEHY 114	Behavioural Sciences II	3
DETH 115	General Anatomy & Physiology II	3
DEHY 116	Professional Communication	2
DEHY 117	Indigenous Health and Wellness	1
DEHY 118	Dental Hygiene Practice	3

Year 2 – 30 credit units

i cu)	
Dental Hygiene Theory & Science III	3
Health Sciences III	3
Oral Health Sciences III	3
Community Practice I	3
Dontal Hygiana Brastica	E
Dental Hygiene Fractice	5
o cu)	5
Dental Hygiene Theory & Science IV	3
Dental Hygiene Flactice Dental Hygiene Theory & Science IV Health Sciences IV	3
Dental Hygiene Fractice 5 cu) Dental Hygiene Theory & Science IV Health Sciences IV Oral Health Sciences IV	3 3 3
5 cu) Dental Hygiene Theory & Science IV Health Sciences IV Oral Health Sciences IV Community Practice II	3 3 3 3
	5 cu) Dental Hygiene Theory & Science III Health Sciences III Oral Health Sciences III Community Practice I

Year 3 – 30 credit units

Term 2 (15 cu)

DEHY 301	Dental Hygiene Theory & Science V	3
DEHY 302	Health Sciences V	3
DETH 303	Oral Health Sciences V	3
DEHY 304	Community Practice III	3
DEHY 308	Dental Hygiene Practice	6

Term 2 (15 cu)

DEHY 311	Dental Hygiene Theory & Science VI	3
DEHY 312	Health Science VI	3
DETH 313	Oral Health Sciences VI	3
DEHY 314	Community Practice IV	3
DEHY 318	Dental Hygiene Practice	6

Admission Requirements - <u>https://programs.usask.ca/programs/admission-</u> requirements.php#CollegeofDentistry)

College of Dentistry

<u>Doctor of Dental Medicine</u> <u>International Dental Degree Program</u>



University of Saskatchewan

Financial Implications - New or Major Revision of Existing Program Proposal

Requirements:

Of primary importance to the University of Saskatchewan is that academic programs:

- be of high quality
- be in demand by students and the public
- use resources efficiently.

This form identifies the relevant financial implications that should be summarized in your proposal and is to be completed for all new programs and major revisions (that require new resources).

Please ensure that this form is completed and reviewed with Office of Institutional Planning & Assessment **prior** to submission of the program proposal to the Academic Programs Committee of Council.

Program Information:

- Name of the program:
- Bachelor of Science in Dental Hygiene
- 2 Sponsoring unit (department/college/school):
- College of Dentistry Is this an interdisciplinary program? If yes, provide details:
- No
- 4 Is there a formal agreement required with any parties external to USask for this program?
 - No

Enrolment Expectations:

- 5 What is the projected student enrolment in the program initially, and over time, and on what evidence is the projection based?
- Comment upon whether the program is primarily designed to: a) cater to graduates of sponsoring college/school/USask, <u>b) meet a provincial demand (as presented in the SK Growth Plan),</u> c) meet national demand, or d) meet an international demand?

18 students per year for a combined maximum enrolment of 54 students, not accounting for potential attrition assumed to be 1 student per year. Graduates are to contribute to alleviating a provincial demand first and foremost as set out in Chapters 1 and 5 of the SK Growth Plan.

6 What is the minimum number of students needed for this program to be viable? Please provide support for calculation.
 While the college has developed a budget built on solid foundations, running a new program with differential tuition categories makes it difficult to determine a precise number of students required to make the program financially sustainable. Further complicating this is the fact that each student in the DH program generates clinical revenue to support the program. Despite
 7 What is the maximum enrolment, given the limitations of the resources allocated to the program?

The maximum enrolment of the program is set to be 54 when all three years are filled.

How is enrolment expected to increase or decrease in the sponsoring college/department, and in other colleges/departments as result of this new program?
 Is the expectation that total enrolment for USask would increase as a result of this new program? *Especially comment if any new courses are being created*.
 As the only program of it's kind at USask, it is anticipated that this program will increase the enrolment in the college and university. All courses will be new and will be limited only to students in the program so that they will not compete with other programs and units on campus for students.

Faculty and Staff:

Are there sufficient numbers of appropriately qualified faculty and staff to support the program (teaching, advising, etc)?
If not, will you be looking to hire? If hiring, what positions and FTE are needed?
In the first year of the program, 2 full time instructors, 1 full time Dental Assistant and 1 full time clerical will be hired. When the second year of the program begins, an additional 2 full time instructors will be hired and that will achieve the full complement of faculty and staff required to run the program.

- Please explain if/how teaching assignments of (each) unit and instructor are affected by this proposal?
 Current teaching assignments will not be impacted as all instructors will be hired and not from existing numbers.
- 11 Are courses or programs being eliminated in order to provide time to teach the additional courses? If so, please list.

No.

- Resource Implications 12 Are there any capital or start-up costs anticipated, and how will these costs be covered?
- Costs can include new space, renovations, equipment, computer hardware and software, marketing and promotion, faculty recruitment, curriculum development, etc. Please provide the exact amounts on sheet titled "Budget".

No, all anticipated costs will be covered by current infrastructure and through the current renovation plan.

Explain budget allocations and how the unit resources will be reallocated to accommodate this proposal. (Unit administrative support, space issues, classroom availability, studio/practice rooms laboratory/clinical or other instructional space requirements)?

All space issues, classroom space and pre-clinical and clinical space is accounted for in the college's main clinic building. With the program being delivered outside of regular instructional hours, the college will better utilize its space.

If this program is to be offered in a distributed context, please describe the costs associated with this approach of delivery and how these costs will be covered. Please describe the resources available and committed to the program, both in terms of one-time costs and ongoing operating costs.

There will be no distributed learning

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

N/A

List all new funding sources and amounts (including in-kind) and the anticipated contribution of each to offset incremental program costs. Please identify if any indicated funding is contingent on subsequent approval by a funding authority and/or future conditions.

New funding sources will be realized through an expanded patient pool with associated fees charged for service once the

program is in its second year and students begin seeing patients.

Tuition and Student Cost:

What tuition will the program be charging (Will the program utilize a special tuition model or existing tuition categories)? Note: As per the Tuition & Fees policy, authority for tuition approval

17 *is delegated to the Provost on behalf of the Board of Governors*

The program will utilize a differential tuition structure: SK students will be charged \$33,000/yr, OOP students will be charged using a 1.5x multiplier for \$49,500/yr and international students will be subject to a 2x multiplier for a tuition amount of \$66,000/yr

- 18 If this is an interdisciplinary program, please explain the proposal for how tuition could be shared amongst the participating colleges/schools? ? (please provide supporting documents) N/A
- What is the total annual cost of the program for a student (tuition and fees included, if any)?
 SK resident \$42,413.72 (2023/24 Usask student fees = 1,088.72), OOP resident \$58,913.72, International student \$75,417.72

20 Will there be a tuitiion deposit for this program? if yes, what is the planned rate?

<u>Please visit the Fee Review Committe website for information on the prosesses to set-up a tuition deposit</u> Yes, the College of Dentistry will maintain consistency and charge a 15% deposit as it does for all programs.

- 21 Compare the proposed total annual cost of the program per student (both domestic and international) with that of similar programs at USask or other relevant institutions (i.e. U15). The tuition and fees charged for SK and OOP students are comparable to those charged to our current Bachelor of Science in Dental Therapy students; the college has determined that a 2.0 multiplier for International students is more appropriate for this program than the 3.0 used for our DMD as it is an undergraduate program.
- What provisions are being provided for student financial aid and to promote accessibility of the program? What scholarships will students be able to apply for, and what proportion of students would be eligible?

As a full-time only program, students would be eligible for all current forms of student loans offered and all relevant scholarships and awards; the college will investigate the creation of new awards for this program as opportunities arise.



University of Saskatchewan Financial Implications - New or Major Revision of Existing Program Proposal

Instructions:

1. Identify limited term and ongoing revenue and expenditure estimates directly in the worksheet below.

2. Areas shaded in grey denote required inputs. All other cells are auto-calculated.

3. For programs expected to generate a deficit in any given year, provide an explanation (in the Comments section) of how that deficit will be managed in future year(s) in

order to ensure long-term financial sustainability.

			Academic Year				
Devenue	Year 1	Year 2	Year 3	Year 4	Year 5	Comments	
Revenue							4
New domestic students (SK students)	10	10	10	10	10		4
Domestic students (SK students)	10	10	20	$\frac{1}{2}$			4
Total # of domestic students (headcount)	10	20	30	30	30		4
Domestic tuition rate per credit unit, <i>if known</i>	10	20		<u> </u>	,		
Domestic tuition rate per student	\$ 33,000.00	\$ 34,320.00	\$ 35,692.80	\$ 37,120.51	\$ 38,605.33		1
Total tuition revenue - domestic	\$ 330.000.00	\$ 686.400.00	\$ 1.070.784.00	\$ 1.113.615.36	\$ 1.158.159.97		1
New domestic students (Out of Province)	7	7	7	7 7	7 7		1
		6	12	2 12	2 12		1
						Assumption of attrition of one student per year from any	
Out of Province students continuing in the program						category, use of OOP as resulting average tuition loss	
Total # of Out of Province students	5 7	13	19	9 19	9 19]
Out of Province tuition rate per student	\$ 49,500.00	\$ 51,480.00	\$ 53,539.20	\$ 55,680.77	\$ 57,908.00]
Total Tuition Revenue - OOP	\$ 346,500.00	\$ 669,240.00	\$ 1,017,244.80	\$ 1,057,934.59	\$ 1,100,251.98		
New international students	1	1	1	1	1		
Int'l students continuing in the program	0	1	2	2 2	2 2		
Total # of international students (headcount)	1	2	3	3 3	3 3		
Int'l tuition rate per credit unit, if known							
International tuition rate per student	\$ 66,000.00	\$ 68,640.00	\$ 71,385.60	\$ 74,241.02	\$ 77,210.66		
Total tuition revenue - international	\$ 66,000.00	\$ 137,280.00	\$ 214,156.80	\$ 222,723.07	\$ 231,631.99		
Total Tuition Revenue	\$ 742,500.00	\$ 1,492,920.00	\$ 2,302,185.60	\$ 2,394,273.02	\$ 2,490,043.94	4% inflation index for Year 2 and beyond	4
							4
Student fees (specific to course or program) use total amount, not per student	4	A	4	4			4
Supplemental Fee - Materials	\$ 3,600.00	\$ 3,744.00	\$ 3,893.76	\$ 4,049.51	\$ 4,211.49		4
Supplemental Fee - Clinical	\$ 4,725.00	\$ 4,914.00	\$ 5,110.56	\$ 5,314.98	\$ 5,527.58		In the first year of clinical revenue, a 75% factor has been
		\$ 286,875.00	\$ 397,800.00	\$ 413,712.00	\$ 430,260.00	Fee for service billing through College clinic, assumption	applied to acknowledge the need for multiple patient
						that only Year 2 & Year 3 students will generate patient	appoints for single charges, as well as cancellations and
						fees/revenue - \$75 per patient, 2 patients per day, 150 days	sicknessIn the second and subsequent years of clinical
						per year	need for multiple patient appoints for single charges, as well
Other (list in Comments)							as cancellations and sickness
Other (list in Comments)	¢ 140.850.00	¢ 580.005.00	¢ 866.024.64	¢ 000 665 63	¢ 026 601 77		4
	\$ 149,850.00	\$ 589,905.00	\$ 866,024.64	\$ 900,665.63	\$ 936,691.77		4
External funding support (list in Comments)							4
External runding support (list in comments)							4
Internal re-allocation (list in Comments)							4
	\$ 892 350.00	\$ 2,082,825,00	\$ 3 168 210 24	\$ 3 294 938 65	\$ 3 426 735 72		4
	<i>\</i>	÷ 2,002,020.00	<i> </i>	<i><i><i>ϕ ϕ ϕ ϕ ϕ ϕ ϕ ϕ ϕ ϕ</i></i></i>	<i>•••••••••••••••••••••••••••••••••••••</i>		1
Costs							1
Start-up costs							1
New space/renovations (classroom, office, laboratory, workshop, etc.)							1
Equipment, including IT (e.g. hardware, software, lab material)							1
Faculty Recruitment							1
Marketing and Promotion, if not using centralized services							1
Curriculum Development, if not using centralized services	20,000						1
Other start-up costs]
Total Start-up Costs	\$ 20,000.00]
Salary and benefits (if hired new)				-			
Faculty	\$ 270,400.00	\$ 562,432.00	\$ 584,929.00	\$ 608,326.00	\$ 632,660.00	2 full time instructors in Year 1, expand to 4 in Year 2	4
Sessionals or limited term instructional support							4
Students (Teaching and/or Marking Assistants)							4
Staff	\$ 217,914.00	\$ 268,230.00	\$ 278,960.00	\$ 290,117.00	\$ 301,723.00	Includes additional clinical and clerical staff members	4
Honoraria	4				4		4
Total New Salary and Benefits	\$ \$ 488,314.00	\$ 830,662.00	\$ 863,889.00	\$ 898,443.00	\$ 934,383.00		4
Other Organities of Conta							4
Other Operational Costs							4
Scholarships and bursaries							4
Marketing and promotion							4
							4
	\$ 35,000,00	\$ 74.453.00	\$ 79 569 00	\$ 82,652,00	\$ 85,858,00	Includes Dental supplies instruments and Dh-specific	4
Materials and supplies	\$ 33,000.00	<i>, , , , , , , , , ,</i>	\$ 75,505.00	\$ 82,052.00	\$ 05,050.00	equinment	
							4
Travel							1
							1
Equipment and IT							1
							1
	\$ 116,663.00	\$ 502,179.00	\$ 863,826.00	\$1,273,074.00	\$ 1,325,917.00	Includes: CDAC Accreditation Fee, Tuition Levy and	1
Other costs (list in Comments)		,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	contingency of 20% of expenses	
Total Other Operational Costs	\$ 151,663.00	\$ 576,632.00	\$ 943,395.00	\$ 1,355,726.00	\$ 1,411,775.00		1
Total Costs	\$ 659,977.00	\$ 1,407,294.00	\$ 1,807,284.00	\$ 2,254,169.00	\$ 2,346,158.00		1
							1
Estimated Surplus or Deficit*	\$ 232,373.00	\$ 675,531.00	\$ 1,360,926.24	\$1,040,769.65	\$ 1,080,577.72]
ner student	\$ 21,124,82	\$ 30,705,95	\$ 41,240,19	\$ 31 538 47	\$ 32,744,78		

* If deficit in any given year, explain how it will be managed:



University of Saskatchewan Financial Implications - New or Major Revision of Existing Program Proposal

IPA REVIEW	COMMENT
Remaining questions:	
Reviewer(s):	
Date reviewed:	
Recommendation:	
Rationale for recommendation:	
Date approved:	

(Choose from drop down menu) Application Fee Community Registration Fee Compulsory Academic Fee - Excursion Compulsory Academic Fee - Lab Fee Service Fee Supplemental Fee - Materials Supplemental Fee - Professional Supplemental Fee - Clinical Supplemental Fee - Experiential Learning Third Party Fee - USSU Third Party Fee - GSA Third Party Fee - CFS Third Party Fee - Recreation Third Party Fee - Sheaf Third Party Fee - WUSC Third Party Fee - Athletics Third Party Fee - Other Tuition/Acceptance Deposit Other (please specify)

(Choose from drop down menu) Yes

No

use total amount, not per student

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?

Is an existing degree, diploma, or certificate being renamed?

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?

Bachelor of Science in Dental Hygiene [BSDH] - suggested Banner code; [Bachelor of Sc Dental Hygiene] - suggested 30 character short description

[60 character maximum for the long description; 30 character maximum for short description; 6 character maximum for code]

3 What is the credential of this new degree, diploma, or certificate? [Example - D.M.D. = Doctor of Dental Medicine]

B.Sc.(DH)

4 If you have renamed an existing degree, diploma, or certificate, what is the current name?

N/A

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?

Degree level

6 If this is a new degree level certificate, can a student take it at the same time as pursuing another degree level program?

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?

College of Dentistry [DE]

9 Is there more than one program to fulfill the requirements for this degree, diploma, or certificate? If yes, please list these programs.

N/A

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.

NOTE: Minors and concentrations are listed on transcripts, but not on parchments (this note also applies to options which are built as concentrations in Banner).

Yes	Х	No	
Yes		No	Х



Title: New Program - Bachelor of Science in Dental Hygiene

Page 2 of 17

DENT [Dentistry] - currently exists in Banner and is attached to the Bachelor of Science in Dental Therapy programs 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?

Is an existing program being revised?

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?

Bachelor of Science in Dental Hygiene [BSDH] - suggested Banner code; [Bachelor of Sc Dental Hygiene] - suggested 30 character short description

3 What is the name of this new/revised program?

Yes	

Yes X No

Yes

Nol X

As tuition is different for the 3 groups of students (SK resident, out-of-province resident, and international resident there will be 3 program codes/descriptions required so as to correctly assess tuition [similar to the DMD program]).

- Bachelor of Science in Dental Hygiene [BSDH] - suggested Banner code (for SK residents); [Bachelor of Sc Dental Hygiene] - suggested 30 character short description

- Bachelor of Science in Dental Hygiene [BSDH-OP] - suggested Banner code (for out-of-province residents); [Bachelor of Sc Dental Hygiene] - suggested 30 character short description

- Bachelor of Science in Dental Hygiene [BSDH-INTL] - suggested Banner code (for international); [Bachelor of Sc Dental Hygiene] suggested 30 character short description

4 What other program(s) currently exist that will also meet the requirements for this same degree(s)?

N/A

5 What College/Department is the academic authority for this program?

College of Dentistry [DE] / Department of Dentistry (Dean's Office) [DE] - currently exist in Banner

6 Is this a replacement for a current program?

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?

N/A

9 If this is a new non-degree or undergraduate level program, what is the expected completion time?

3 years

Title: New Program - Bachelor of Science in Dental Hygiene

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.



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.
- 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.

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?

No X Revised Yes





Effective Term: 202409 [Sept 2024]

Title: New Program - Bachelor of Science in Dental Hygiene

Section 6: New College / School / Center / Department or Renaming of Existing

1 Is this a new college, school, center, or department?Is an existing college, school, center, or department being renamed?Is an existing college, school, center, or department being deleted?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.)?

Yes	No	Х
Yes	No	Х
Yes	No	Х

Title: New Program - Bachelor of Science in Dental Hygiene

Yes

Yes

No X

No X

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 - DEHY [Dental Hygiene]

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 Dentistry [DE] / Department of Dentistry (Dean's Office) [DE] - 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?

4 Does the program timetable use standard class time slots, terms, and sessions?

If NO, please describe.

Classes will primarily occur in the evening hours to allow for students who have other commitments during the day to achieve their goal of becoming an oral health professional; classes will run into 1st week of May and no student fees will be assessed for the spring term

5 Does this program, due to pedagogical reasons, require any special space or type or rooms?

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

1 Will students apply on-line? If not, how will they apply?

Yes - as per current set-up

2 What term(s) can students be admitted to?

YYYY09 [Sept]

3 What is the application deadline for each term(s) students can be admitted to?

March 1 - application open

April 15 - application closes

May 1 - preliminary document deadline

June 30 - conditional offers sent out

Aug 1 - final document deadline

4 For undergraduate programs, will students be admitted to one of the approved majors or an undeclared major?

Only one major attached to the program

5 For undergraduate programs, if there's more than one degree proposed (ex. 3Y and 4Y), which program/degree will students be admitted to?

N/A

6 Does this impact enrollment?

Slight increase; target is 18 students per year for a total of 54 students in the 3 year program.

7 How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

Refer to the College of Dentistry

8 Can classes towards this program be taken at the same time as another program?

No

9 What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)

Effective Term: 202409 [Sept 2024]

Regular Admission - High School (less than 18 cu's of transferable post-secondary)	
•Grade 12 standing or equivalent.	
•ELA A30 and B30; Biology 30, Chemistry 30, Foundations of Math 30 or Pre-calculus; one elective from social sciences/natural s	sciences or
humanities at the 30 level (no deficiencies allowed) or equivalents.	
•Minimum average of 75% on five subject high school average.	
Proficiency in English.	
Regular Admission - Post-Secondary (18 cu's or more transferable post-secondary)	
•Minimum average of 60% on 18 or more transferable credit units or the cumulative weighted average from a recognized and/or	r accredited
post-secondary institution; average calculated on all attempted courses (without breaking up an academic session) which are tr	ransferable to
the University of Saskatchewan.	
•ELA A30 and B30; Biology 30, Chemistry 30, Foundations of Math 30 or Pre-calculus; one elective from social sciences/natural s	sciences or
humanities at the 30 level (no deficiencies allowed) or equivalents.	
• Proficiency in English.	
Special Mature Admission	
•Proof of age (21 or older).	
•A written submission demonstrating capacity to undertake university-level studies.	
•Less than 18 credit units of transferable post-secondary coursework.	
• Transcripts of any secondary or post-secondary coursework.	
•Resume.	
• Proficiency in English.	
What is the selection criteria? (IE. If only average then 100% weighting; if other factors such as interview, essay, e weighting of each of these in the admission decision.)	etc. what is the
Regular Admission	
oAcademic average - 80% weighting (Average is calculated using five high school subjects or on 18 or more transfer	able credit
oWritten Statement – 20% weighting	
Special Mature Admission	
oApplicants are admitted at the discretion of the college. The admission decision is based on the applicant's writte	en submission
and demonstrated academic potential.	
What are the admission categories and admit types? (IE. High school students and transfer students or one group?	Special
admission? Aboriginal equity program?)	

- Saskatchewan Residents
- Canadian Applicants
- **Regular Admission**
- Special (Mature) Admission
- Indigenous Specific Seats (4 seats designated)
- International Applicants
- **Regular Admission**

12 What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

Online application and supplemental information to the College of Dentistry

13 Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

College of Dentistry

14 Letter of acceptance - are there any special requirements for communication to newly admitted students?

College of Dentistry will be responsible for

15 Will the standard application fee apply?

\$165.00 application fee; the College of Dentistry doesn't allow an applicant to apply for multiple programs with one fee; applicants must submit a separate application and fee for each program that they apply for

16 Will all applicants be charged the fee or will current, active students be exempt?

All students will be charged the fee

17 Is there a tuition deposit required?

NOTE: Tuition deposits are non-refundable.

If YES, what is the amount?

15% deposition

If YES, has it been approved by the Fee Review Committee?

The fees have been sent and are being reviewed by the Fee Review Committee. The next meeting of the committee is Jan. 22, 2024.

18 Are international students admissible to this program? If YES, see Section 18 for Tuition and Fees information.

Yes X No

Yes X No

Title: New Program - Bachelor of Science in Dental Hygiene

Section 9: Government Loan Information

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? Yes

Section 10: Convocation Information (only for new degrees)

1 Are there any 'ceremonial consequences' of this proposal (ie. New degree hood, special convocation, etc.)?

Yes; new degree hood

2 If YES, has the Office of the University Secretary been notified?

3 When is the first class expected to graduate?

June 2027 (Spring Convocation)

4

What is the maximum number of students you anticipate/project will graduate per year (please consider the next 5-10 years)?

18

Section 11: Schedule of Implementation Information

1 What is the start term?

202409 [Sept]

2 Are students required to do anything prior to the above date (in addition to applying for admission)?

If YES, what and by what date?

Yes No X

Section 12: Registration Information

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; undergraduate degree level certificates will use numeric year.)

degree level certificates will use numeric year.) Numeric year 2 Will students register themselves? Yes X No If YES, what priority group should they be in? As per current set-up Section 13: Academic History Information 1 Will instructors submit grades through self-serve? Yes X No 2 Who will approve grades (Department Head, Assistant Dean, etc.)? As per current set-up for the College of Dentistry Section 14: T2202 Information (tax form) 1 Should classes count towards T2202s? Yes X l No Section 15: Awards Information 1 Will terms of reference for existing awards need to be amended? No X Yes 2 If this is a new undergraduate program, will students in this program be eligible for College-specific awards? Yes Section 16: Government of Saskatchewan Graduate Retention (Tax) Program 1 Will this program qualify for the Government of Saskatchewan graduate retention (tax) program? Yes X 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?	-	
2 Will there be any courses closed as a result of this termination?		
If yes, what courses?	res	
	٦	
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?		
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

1 How will tuition be assessed?



Yes X No

NOTE 1: Proposal indicates the program will utilize a differential tuition structure:

- SK students \$33,000/year
- out-of-province students 1.5 times multiplier for \$49,500/year
- international students 2 times multiplier for \$66,000/year

NOTE 2: If a student needs to repeat, they will be assessed the full annual tuition and fees each academic year.

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?

By term (2 terms per year)

4 Does proponent's proposal contain detailed information regarding requested tuition?

If NO, please describe.

5 What is IPA's recommendation regarding tuition assessment? When is it expected to receive approval?

The tuition will be coming through the 2024/2025 rate setting process as agreed in November. Submisison of tuition rates are due Feb 16, 2024. Provost approval expected early March 2024. Approved rates cannot be communicated until Board review in April 2024.

6 IPA Additional comments?

Based on the proposed tuition rates and fees, and other revenue and expense information provided by the College of Dentistry, the program appears to generally be financially stable. There is a small deficit forecasted in the first year but the college has indicated that they will be able to cover this through operational surplus. Future years all show a surplus position. It is our understanding that the College of Dentistry is also exploring another revenue source to support this program.

7 Will students outside the program be allowed to take the classes?

No

8 If YES, what should they be assessed? (This is especially important for program based.)

Title: New Program - Bachelor of Science in Dental Hygiene

9 Do standard student fee assessment criteria apply (full-time, part-time, on-campus versus off-campus)?



If YES, what is the tuition amount for the first 12 months for a full-time international student? This information is required for the Immigration, Refugees and Citizenship Canada [IRCC] form (this form is for students who need to get a visa to study here). \$66,000/year

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?
- 2 Has TLSE, Admissions, been informed about this new / revised program?
- 3 Has TLSE, Student Finance and Awards, been informed about this new / revised program?
- 4 Has TLSE, Transfer Credit, been informed about any new / revised courses?
- 5 Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?
- 6 Has the Library been informed about this new / revised program?
- 7 Has ISA been informed of the CIP code for new degree / program / major?
- 8 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?
- 9 Has the Convocation Coordinator been notified of a new degree?
- 10 What is the highest level of financial approval required for this submission? Check all that apply.
 - a. None as it has no financial implications

- b. Fee Review Committee
- c. Institutional Planning and Assessment (IPA)
- d. Office of the Provost
- e. Board of Governors
- f. Other

SIGNED

Date:

Registrar (Russell Isinger):

College Representative(s):

IPA Representative(s):

Yes No Yes No Yes No Yes No No Yes No Yes Yes No Yes No Yes No



Revised: August 3, 2023

UNIVERSITY COUNCIL

ACADEMIC PROGRAMS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY:	Carolyn Augusta, chair, Academic Programs Committee
DATE OF MEETING:	March 21, 2024
SUBJECT:	Termination of the Postgraduate Diploma in Aboriginal Agriculture and Land Management
MOTION:	It is recommended that Council approve the termination of the Postgraduate Diploma in Aboriginal Agriculture and Land Management, effective May 2025.

PURPOSE:

University Council has the authority to approve the termination of degree programs and degreelevel programs.

CONTEXT AND BACKGROUND:

The College of Graduate and Postdoctoral Studies and the College of Agriculture and Bioresources are recommended that Council approve the termination of the Postgraduate Diploma in Aboriginal Agriculture and Land Management. The College of Agriculture and Bioresource's noted that there are currently no students enrolled in the program and there have not been any students complete the program in many years. Interest in the program has been low since its inception and, additionally, faculty who delivered courses for this program retired a number of years ago.

CONSULTATION:

This change was reviewed by the Graduate Programs Committee on January 10, 2024 and were supportive of the termination. The Academic Programs Committee reviewed the proposed changes at its January 24, 2024 meeting. The committee supported the termination, and in response to concerns about the termination of a program focusing on Indigenous land management, the College of Agriculture and Bioresources indicated that with this termination, the college will be able to support the development of other land-based programming opportunities. The committee voted to recommend that Council approve this termination.

ATTACHMENTS:

1.

Report for Termination Form – Postgraduate Diploma in Aboriginal Agriculture and Land Management



M E M O R A N D U M

То:	Academic Programs Committee of Council
From:	Graduate Programs Committee, CGPS
Date:	January 15, 2024
Re:	Postgraduate Diploma in Aboriginal Agriculture and Land Management

The College of Graduate and Postdoctoral Studies is recommending the approval of the deletion of the Postgraduate Diploma (PGD) in Aboriginal Agriculture and Land Management. Deletion of this program will not affect current course offerings or current students. The expected implementation date for this program deletion is May 1, 2025.

The Graduate Programs Committee of the College of Graduate and Postdoctoral Studies reviewed the proposal at its meeting on January 10, 2024. The committee inquired if the College of Agriculture & Bioresources had plans to create alternative land-based graduate programming. The College of Agriculture & Bioresources noted they are looking into exciting land-based programming opportunities; however, it is not currently being explored at the graduate level. The Graduate Programs Committee approved the proposal with the following motion:

Motion: To recommend the deletion of the Postgraduate Diploma in Aboriginal Agriculture and Land Management Yang/Heavin – CARRIED (6 in favour, 1 abstention)

Attached please find the proposal for deletion of the Postgraduate Diploma in Aboriginal Agriculture and Land Management.

If you have any questions, please contact the Academic Affairs Specialist at gradprograms.academicaffairs@usask.ca



Program(s) to be deleted: Postgraduate diploma in Aboriginal Agriculture and Land Management

Effective date of termination: May 1, 2025

1. List reasons for termination and describe the background leading to this decision.

This program was developed and offered over a decade ago by faculty who have long since retired. There was only little interest in the program while it was offered and currently no demand. The faculty voted to terminate the program given the lack of demand and because there are no faculty members working in this area. It will not negatively affect our programs or course offerings.

2. Technical information.

2.1 Courses offered in the program and faculty resources required for these courses. There were no dedicated courses for this program. Students could take graduate classes in ARE or other department on campus.

- 2.2 Other resources (staff, technology, physical resources, etc) used for this program. *None*
- 2.3 Courses to be deleted, if any. *None*
- 2.4 Number of students presently enrolled. 0
- 2.5 Number of students enrolled and graduated over the last five years. *0*

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? *There are no current students in the program. Students in other programs will be unaffected.*
- 3.2 What impact will this termination have on faculty and teaching assignments? *None*

- 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? *No courses will be deleted.*
- 3.5 Is it likely, or appropriate, that another department or college will develop a program to replace this one? *No.*
- 3.6 Is it likely, or appropriate, that another department or college will develop courses to replace the ones deleted? *No courses will be deleted.*
- 3.7 Describe any impact on research projects. *None*
- 3.8 Will this deletion affect resource areas such as library resources, physical facilities, and information technology? *No*
- 3.9 Describe the budgetary implications of this deletion. *None*

<u>T</u> External

- 3.10 Describe any external impact (e.g. university reputation, accreditation, other institutions, high schools, community organizations, professional bodies). *None*
- 3.11 Is it likely or appropriate that another educational institution will offer this program if it is deleted at the University of Saskatchewan? *No*

<u>Other</u>

- 3.12 Are there any other relevant impacts or considerations? *None that we are aware of*
- 3.13 Please provide any statements or opinions received about this termination. As the program has had no students over the previous number of years, faculty in the department are supportive of removing it.

(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.

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?

Is an existing degree, diploma, or certificate being renamed?

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?

[60 character maximum for the long description; 30 character maximum for short description; 6 character maximum for code]

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?

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.

NOTE: Minors and concentrations are listed on transcripts, but not on parchments (this note also applies to options which are built as concentrations in Banner).

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?

Yes	No	Х
Yes	No	Х

Yes

No

Section 2: New / Revised Program for Existing or New Degree / Diploma / Certificate Information

1 Is this a new program?

Is an existing program being revised?

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?

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?

9 If this is a new non-degree or undergraduate level program, what is the expected completion time?



Yes

No

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.



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.
- 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.

 ${\bf 2}$ 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 <u>and</u> 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?

Yes No X Revised

Yes No X Revised

Effective Term: 202505 [May 2025]

Title: Deletion of Aborig Agric and Land Mgmt [AALM] major in the Post Graduate Diploma Program [PGD-GP]

Section 6: New College / School / Center / Department or Renaming of Existing

1 Is this a new college, school, center, or department?Is an existing college, school, center, or department being renamed?Is an existing college, school, center, or department being deleted?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.)?

Yes	No	Х
Yes	No	Х
Yes	No	Х

Yes

Yes

No

Section 7: Course Information - NOT APPLICABLE

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?

If NO, please describe.

5 Does this program, due to pedagogical reasons, require any special space or type or rooms?

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 - NOT APPLICABLE

1 Will students apply on-line? If not, how will they apply?

2 What term(s) can students be admitted to?

3 What is the application deadline for each term(s) students can be admitted to?

4 For undergraduate programs, will students be admitted to one of the approved majors or an undeclared major?

5 For undergraduate programs, if there's more than one degree proposed (ex. 3Y and 4Y), which program/degree will students be admitted to?

6 Does this impact enrollment?

7 How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

- 8 Can classes towards this program be taken at the same time as another program?
- 9 What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)
- 10 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.)
- 11 What are the admission categories and admit types? (IE. High school students and transfer students or one group? Special admission? Aboriginal equity program?)
- 12 What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

13 Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

14 Letter of acceptance - are there any special requirements for communication to newly admitted students?

15 Will the standard application fee apply?

16 Will all applicants be charged the fee or will current, active students be exempt?

Yes

Yes

No

No

17 Is there a tuition deposit required?

NOTE: Tuition deposits are non-refundable.

If YES, what is the amount?

If YES, has it been approved by the Fee Review Committee?

18 Are international students admissible to this program? If YES, see Section 18 for Tuition and Fees information.

Effective Term: 202505 [May 2025]

Title: Deletion of Aborig Agric and Land Mgmt [AALM] major in the Post Graduate Diploma Program [PGD-GP]

Section 9: Government Loan Information - NOT APPLICABLE

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 - NOT APPLICABLE

1 What is the start term?

2 Are students required to do anything prior to the above date (in addition to applying for admission)? If YES, what and by what date? Yes No

Section 12: Registration Information - NOT APPLICABLE

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; undergraduate degree level certificates will use numeric year.)

2 Will students register themselves?

If YES, what priority group should they be in?

Section 13: Academic History Information - NOT APPLICABLE

1 Will instructors submit grades through self-serve?

2 Who will approve grades (Department Head, Assistant Dean, etc.)?

Section 14:	T2202 Information	(tax form) - NO	T APPLICABLE
• • • •		(,,	

1 Should classes count towards T2202s?

Section 15: Awards Information	- NOT	APPLICABLE
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1 Will terms of reference for existing awards need to be amended?

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 - NOT APPLICABLE

1 Will this program qualify for the Government of Saskatchewan graduate retention (tax) program?

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.



Yes

Yes

No

No

Yes No





1 Is this a program termination?	Yes	< No	
If yes, what is the name of the program?	_		
Aborig Agric and Land Mgmt [AALM] major in the Post Graduate Diploma [PGD-GP] program			
2 What is the effective date of this termination?	_		
202505 [May 2025]	1		
3 Will there be any courses closed as a result of this termination?	Yes	No	Х
If yes, what courses?			 4
4 Are there currently any students enrolled in the program?	Yes	No	X
If yes, will they be able to complete the program?	ـــــ م		
5 If not, what alternate arrangements are being made for these students?]		
6 When do you expect the last student to complete this program?] T		
7 Is there mobility associated with this program termination?	Yes	No	Х
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	

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?	r	
3	If program based tuition, how will it be assessed? By credit unit? By term? Elsehow?	i	
Ĩ			
4	Does proponent's proposal contain detailed information regarding requested tuition?	Yes	No
	If NO, please describe.	I	
ſ			
5	What is IPA's recommendation regarding tuition assessment? When is it expected to receive approval?		
ĺ			
6	IPA Additional comments?	ſ	
7	Will students outside the program be allowed to take the classes?	1	
[l	
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)?		
		l	
10 [Do standard cancellation fee rules apply?		
11 11	Are there any additional fees (e.g. materials, excursion)? If yes, see NOTE below.		
	Are you maying from one tuition code $(T()$ to another tuition code?	v	
12	Are you moving from one curtion code (TC) to another curtion code:	res	NO
ſ	IT TES, from which tuition code to which tuition code?		
13	If international students are admissible to the program, will they pay the international tuition differential? If YES, explain the		
	amount.	Yes	No
[

14

If YES, what is the tuition amount for the first 12 months for a full-time international student? This information is required for the Immigration, Refugees and Citizenship Canada [IRCC] form (this form is for students who need to get a visa to study here).

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?
- 2 Has TLSE, Admissions, been informed about this new / revised program?
- 3 Has TLSE, Student Finance and Awards, been informed about this new / revised program?
- 4 Has TLSE, Transfer Credit, been informed about any new / revised courses?
- 5 Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?
- 6 Has the Library been informed about this new / revised program?
- 7 Has ISA been informed of the CIP code for new degree / program / major?
- 8 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?
- 9 Has the Convocation Coordinator been notified of a new degree?
- 10 What is the highest level of financial approval required for this submission? Check all that apply.
 - a. None as it has no financial implications

<u>OR</u>

- b. Fee Review Committee
- c. Institutional Planning and Assessment (IPA)
- d. Office of the Provost
- e. Board of Governors
- f. Other

SIGNED

Date:

Registrar (Russell Isinger):

College Representative(s):

IPA Representative(s):





Revised: November 22, 2023

UNIVERSITY COUNCIL

ACADEMIC PROGRAMS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY:	Carolyn Augusta, chair, Academic Programs Committee
DATE OF MEETING:	March 21, 2024
SUBJECT:	Change to Admissions Qualifications – Master of Business Administration Program
MOTION:	It is recommended that Council approve changes to the Admissions Qualifications for the Master of Business Administration Program, effective the 2025-26 admissions cycle.

PURPOSE:

University Council has the authority to approve changes to admissions qualifications. Senate confirmation of the decision is required before the changes can take effect.

CONTEXT AND BACKGROUND:

The College of Graduate and Postdoctoral Studies and the Edwards School of Business is proposing a change that will modify the conditions under which the requirement of a GMAT examination may be waived for applicants to the MBA program. The change expands the list of degrees from Canadian institutions that an applicant may hold that would exempt them from taking the GMAT.

CONSULTATION:

This change was reviewed by the Graduate Programs Committee on January 10, 2024 and were supportive of the change. The Academic Programs Committee reviewed the proposed changes at its January 24, 2024 meeting. The committee raised concerns at that time that the proposed change exempted those holding a PhD from a Canadian institution from taking the GMAT, but did not exempt those holding other earned doctoral degrees from Canadian institutions. The committee's suggestions were considered and an amended proposal that expanded the list to include earner doctoral degrees was submitted. This was approve by the Graduate Programs Committee by way of electronic vote on March 5, 2024 and was submitted to APC on March 6, 2024. The committee voted to recommend that Council approve this change.

ATTACHMENTS:

1.

Master of Business Administration – Admissions requirement changes



M E M O R A N D U M

То:	Academic Programs Committee of Council
From:	Graduate Programs Committee, CGPS
Date:	March 5, 2024
Re:	Master of Business Administration – Admission requirement changes (resubmission)

The College of Graduate and Postdoctoral Studies is recommending the approval of admission requirement changes for the Master of Business Administration (MBA). The proposed changes will modify the conditions under which the GMAT exam may be waived for applicants to the Edwards MBA program. The expected implementation date for these changes is May 1, 2025.

The Graduate Programs Committee of the College of Graduate and Postdoctoral Studies reviewed the proposal at its meeting on January 10, 2024. The committee felt the proposal was clear and noted these changes will be formalizing holistic admission practices that are currently handled through exemption approvals. The Graduate Programs Committee approved the proposal, with the following motion:

Motion: "To approve the proposed admission changes for the Master of Business Administration" Yang/Heavin – CARRIED unanimously

Following the Academic Program Committee's concern with the finite nature of the exemption list of acceptable degrees from a Canadian university, the proposal was resubmitted to the Graduate Programs Committee to change the degree listed on the exemption list from "PhD" to "earned doctoral degree." The Graduate Programs Committee approved the modification through email vote with the following motion, to be ratified at an upcoming meeting:

Motion: "To approve a modification to the MBA admission requirements previously approved on January 10, 2024, to change the reference to applicants holding a PhD from a Canadian university to be a reference to applicants holding an earned doctoral degree from a Canadian university" – **Martin/Heavin – CARRRIED (7 in favour; 3 abstentions).**

Attached please find the updated proposal for the Master of Business Administration admission requirement changes.

If you have any questions, please contact the Academic Affairs Specialist at gradprograms.academicaffairs@usask.ca


The Edwards School of Business develops business professionals to build nations.

MEMORANDUM TO: College of Graduate and Postdoctoral Studies FROM: Marjorie Delbaere Associate Dean, Research, Graduate Programs & Faculty Relations Edwards School of Business DATE: February 27, 2024 RE: Proposed MBA Program Revisions

The following item was approved by the MBA Committee on February 21, 2024 and is presented to the College of Graduate and Postdoctoral Studies for immediate approval:

MOTION: Amend the previous motion approved by the MBA Committee on November 17, 2023 to change the reference to applicants holding *a PhD* from a Canadian university to be a reference to applicants holding *an earned doctoral degree* from a Canadian university.

RATIONALE: This additional change was made based on a recommendation from the Academic Programs Committee of Council, after reviewing the original motion sent to the Graduate Programs Committee of CGPS in November. The substance of the original motion remains unchanged.

From the memorandum sent to CGPS on November 24, 2023:

The following item was approved by the MBA Committee on November 17, 2023 and is presented to the College of Graduate and Postdoctoral Studies for immediate approval:

MOTION: Modify the current verbiage of the conditions under which the GMAT exam may be waived for an applicant to the Edwards MBA program.

RATIONALE: MBA applications are globally on a decline, while interest in graduate level business studies and value of an MBA remain constant. While there is still value in keeping the GMAT as one of the criteria for admission, especially in situations where there aren't other

significant indicators or qualifiers to assess an applicant, we have learnt over the last admission cycle that the waiver options we had suggested need some verbiage modifications to clarify the meaning of and expand certain options.

The expansion involves waiving the GMAT for people holding a CPHR (Chartered Professionals in Human Resources). The process to attain and maintain the designation is rigorous, and the HR Specific and General Competencies that need to be demonstrated cover quantitative, qualitative, strategic, and analytical skills that are required to succeed in the MBA.

The Graduate Certificate in Leadership (GCL) was designed as a stackable certificate to the MBA program. The proposed waiver of the GMAT for GCL students is to make the pathway to the MBA more accessible, thereby increasing our enrolment from an audience that has familiarized themselves with graduate level courses and have demonstrated success by achieving an overall aggregate percentage. The potential GCL applicant to the MBA would have to take GMAC's Business Fundamentals courses in Finance & Accounting, which would not only further prove their quantitative abilities but also serve as a genuine preparatory course.

Explicitly stating the waiver conditions will reduce administrative back and forth between our College and CGPS for exemptions and probationary admissions.

GMAC has introduced the GMAT Focus Edition to replace the prior GMAT test. Starting February 1, 2024, the only version of the GMAT available for candidates to take will be the updated GMAT[™] Focus Edition following the sunset of the previous GMAT[™] Exam on January 31, 2024.

The modifications to the verbiage appear in red below:

Admission Requirements

- 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 degree, or equivalent, from a recognized college or university.
 - Applicants with three-year degrees may be considered for admission. Applicants will be considered using a holistic admissions approach and should demonstrate a strong potential for success in the program through outstanding GMAT scores and/or exceptional leadership experience.
- <u>Statement of Intent</u>: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to undertake the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program and their chosen field of study. This statement is a key component in adjudicating each

applicant's suitability to the program. An interview may also be required to assess language proficiency.

- Current resume detailing positions held and a description of responsibilities.
- Two years of leadership* experience. Emerging leaders who have fewer than two years of leadership experience but who demonstrate exceptional leadership potential through their professional and life experiences, are preparing for further leadership roles, and otherwise meet the standard admissions criteria, are encouraged to apply. Please ensure that you demonstrate your leadership experience in your detailed resume and Statement of Intent.
- Minimum score of 500 Graduate Management Admission Test (GMAT) or equivalent GMAT Focus Edition score
- Three confidential letters of recommendation (minimum one academic).
- Each applicant package will be reviewed holistically to assess the skills, personal attributes, background, and experiences, and how these relate to success in the MBA program. While a minimum GMAT score of 500 or equivalent GMAT Focus Edition score is required, it may be waived if one or more of the following are met:
- An applicant has successfully completed a Bachelor of Commerce degree from the Edwards School of Business within the last 10 years and achieved an average of 75% in their last two years of full-time study (60 credit units).
- An applicant has successfully completed the Edwards School of Business Master of Professional Accounting program. or holds an undergraduate medical doctor (MD) degree, or holds a PhD from a Canadian university
- An applicant holds a PMI issued PMP, or a recognized Canadian professional designation, namely, CPA, CFA, CPHR PMP, and PEng.
- An applicant is currently enrolled in good standing in their third year of the University of Saskatchewan's Doctor of Veterinary Medicine program or Doctor of Pharmacy program.
- An applicant has achieved the minimum required score on the LSAT, MCAT, or DAT, and have been admitted to the respective University of Saskatchewan colleges
- An applicant holds one of the following degrees from a Canadian university:
 - Doctor of Veterinary Medicine (DVM)
 - Medical Doctor (MD)
 - Juris Doctor (JD)
 - Doctor of Pharmacy (PharmD)
 - Doctor of Dental Medicine (DMD)
 - Earned Doctoral Degree PhD
- An applicant has successfully completed an undergraduate business degree from an accredited Canadian business school (ie: AACSB) and has a converted entrance average of a minimum of 80% in the last two years of full-time study (60 credit units) of their respective business program.

- An applicant has successfully completed the Edwards School of Business Graduate Certificate in Leadership and achieved a minimum 75% cumulative average. This applicant will be required to take the following preparatory courses and request that their scores be submitted to the school before starting the MBA program:
 - o GMAC Business Fundamentals: Finance
 - o GMAC Business Fundamentals: Accounting

Applicants whose qualifications do not meet the minimum requirements are encouraged to contact the Edwards MBA office to discuss potential opportunities for admission. Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on probationary status to a program. Applicants in this category will be required to participate in an interview with the Edwards MBA Admissions Committee and may be required to take certain preparatory courses to improve their qualifications. In this case they will be required to pay additional fees. The student's status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Edwards MBA Admissions Committee may recommend to CGPS that the student be considered fully qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or, failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions agreed to by the student and by the College of Graduate and Postdoctoral Studies.

*Leadership experience could include (but is not limited to) one or more of the following:

- Formal leadership role within an organization or volunteer group
- Extensive, high-level supervisory experience
- Experience in consulting or negotiating change in a complex environment
- Experience leading others to shared outcomes (informal leadership experience)

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

UNIVERSITY COUNCIL

ACADEMIC PROGRAMS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY:	Carolyn Augusta, chair, Academic Programs Committee
DATE OF MEETING:	March 21, 2024
SUBJECT:	Master of Chemical Risk Assessment
MOTION:	It is recommended that Council approve Master of Chemical Risk Assessment program, effective Fall 2024.

PURPOSE:

University Council has the authority to approve new degrees and degree-level programs.

CONTEXT AND BACKGROUND:

The College of Graduate and Postdoctoral Studies is proposing a new program – the Master of Chemical Risk Assessment (MRA), to be offered through the Toxicology Centre. The program will formalize a partnership with Aarhus University in Denmark and is an innovative program that addresses a growing need to trained professionals in this discipline.

There is a growing demand for professionals working as environmental scientists, analysts, regulatory affairs associates, and/or consultants in the environmental, resource and chemical sectors to have specialized training in chemical risk analysis and regulatory changes in continental Europe is fueling that growth.

This program will target both domestic and international domestic students, with students from Aarhus University being assessed as domestic students. This program is unique in Canada and one of few offerings internationally and it is anticipated that there will be strong demand for the program.

Twelve new courses have been developed for this program, which is a 36 cu course-based Master's program. Tuition would be charged per credit unit. The program anticipates having 15 students enrolled in year 1, and scaling up to 30 in year 2, and 40 in year 3. 40 students is the targeted maximum enrolment for the program. It is anticipated that about one third of students will be domestic and the remaining two thirds will be international students.

CONSULTATION:

This proposal was reviewed by the Graduate Programs Committee on January 24, 2024 and they were supportive of the new program. The Academic Programs Committee reviewed the proposal at its March 6, 2024 meeting. The committee supported the new program and voted to recommend that Council approve the program.

ATTACHMENTS:



MEMORANDUM

To:Academic Programs Committee of CouncilFrom:Graduate Programs Committee, CGPSDate:February 28, 2024Re:Master of Chemical Risk Assessment

The College of Graduate and Postdoctoral Studies is recommending the approval of a new program Master of Chemical Risk Assessment (MRA) program, offered through the Toxicology Centre. This program is designed to train students in current risk assessment practices and properly prepare them for careers in chemical and environmental risk assessment and risk analysis within any sector context. The program will formalize a partnership between USask and Aarhus University (AU) in Denmark, with faculty from AU teaching in the USask program. The MRA is a course-based program and will be offered every two years, with the first intake of students expected to start in September 2024.

The Graduate Programs Committee of the College of Graduate and Postdoctoral Studies reviewed the proposed revisions at its meeting on January 24, 2024. The committee found the proposal to be clear, well presented, and convincing on need and uniqueness of the program. It was noted that research on the rationale was thorough with input from different sectors. The committee met with the proponents who were able to clarify details about admissions, course prerequisites and sequencing, and assessment in courses. The committee flagged potential issues of course sequencing for students who fall out of sync with their cohort and encourages Toxicology to work with students should this occur. The committee recommended approval of the proposal with the following motion:

Motion: "That the Graduate Programs Committee recommend the approval of the program proposal for the new Master of Chemical Risk Assessment, subject to clarification of the variation of admission qualification wording through the proposal" **Martin/Heavin – CARRIED (1 abstention)**

The twelve course proposals were considered separately and approved pending minor edits to most courses. Motions are not included and can be provided if required.

The proponent diligently addressed all revisions as confirmed by the Graduate Programs Committee Chair, Dr. Mark Eramian, on February 20, 2024.

Attached please find the proposal for Master of Chemical Risk Assessments.

If you have any questions, please contact the Academic Affairs Specialist at gradprograms.academicaffairs@usask.ca

Proposals for Academic or Curricular Change

Master of Chemical Risk Assessment (MRA)

Submitted 15 December 2023

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PROPOSAL IDENTIFICATION: Master of Chemical Risk Assessment (MRA)

Title of proposal: Proposal for new graduate degree in Toxicology

Degree(s): Master of Chemical Risk Assessment (MRA)

Field(s) of Specialization: n/a

Level(s) of Concentration: n/a

Option(s): n/a

Contact person(s):

Dr. Debby Burshtyn Dean College of Graduate and Postdoctoral Studies (CGPS) gradprograms.academicaffairs@usask.ca **Dr. Karsten Liber** Executive Director School of Environment and Sustainability (SENS) <u>karsten.liber@usask.ca</u>

Dr. Markus Brinkmann Director Toxicology Centre <u>markus.brinkmann@usask.ca</u>

Proposed date of implementation: September 2024

Proposal Document

Academic Justification

Overview

Chemical risk assessments are scientific reviews of how or if a chemical substance may potentially affect the health of people and the environment. They follow prescribed procedures that are globally standardized, but details, regulations and implementation approaches vary to some extent by country or region. Every chemical approved for sale and use, and every contaminated industrial site, must go through a risk assessment, some more detailed than others. Risk assessment is one of the most common practices used in regulatory decision-making, yet very few academic programs exist globally that train individuals specifically on how to perform detailed risk assessments. The proposed professional *Master of Chemical Risk Assessment* (MRA) will be a globally unique program specifically designed to train participants in current risk assessment practices and properly prepare them for careers in chemical and environmental risk assessment and risk analysis within any sector context (e.g., government, industry, consulting firms). The program will lead to a formal master's degree in risk assessment (credential: MRA) and will be offered through the University of Saskatchewan (USask) in partnership with Aarhus University (AU), Denmark. Given the partnership between USask and AU, Danish students will be considered domestic students and will pay domestic student tuition rates. Students completing the program receive a USask degree, but courses will be delivered by faculty from both institutions. The program will have a global focus and will be delivered entirely in an online format (an option to study in-person may be added at a later date). Students can enroll and participate from anywhere in the world. Courses will have sections or specific lectures delivered by globally recognized experts from other institutions around the world. The MRA will include both theoretical and practical components, including learning how to use actual risk assessment software and tools.

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

Toxicology has been a recognized strength at USask for over two decades and all day-to-day activities have been managed through the <u>Toxicology Centre</u> since 1982. The Toxicology Centre is the foremost centre of its type in Canada and the existing interdisciplinary Toxicology academic programs (undergraduate and graduate) are routinely rated as top in Canada and among the best in the world. Now that the Toxicology Centre has moved under the School of Environment and Sustainability (SENS), thus becoming part of an academic unit, it is even better positioned to deliver and manage academic programs and to ensure its continued growth and success.

A key part of this growth involves the creation of this **course-based master's program**—*The Master of Chemical Risk Assessment*—referred to as the MRA program. This program will significantly increase graduate student enrolment in Toxicology (SENS) and generate much needed revenue that will help support the growth of the Toxicology Centre under SENS. While chemical risk assessment is one of the major tasks performed by professionals hired within the environmental science and chemical regulatory sectors globally, no universities in Canada offer a graduate degree or any sort of programming in chemical or environmental risk assessment; lack of required programing and training in the field provides a significant opportunity for USask at this time.

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.

Developing a program in Chemical Risk Assessment will allow the USask Toxicology Centre and SENS to continue and expand their Canadian and international leadership. The proposed MRA program aligns strongly with the institutional priorities as set out in the <u>University Plan 2025</u> (USask, 2018) and the <u>USask International Blueprint</u> (USask, 2018). To become the "university the world needs" (USask, 2018), the Toxicology Centre and SENS—in

collaboration with our European Union partner, Aarhus University (AU)—are uniquely poised to prepare graduates to undertake chemical risk assessments in their professional careers.

The partnership between USask (Toxicology Centre and SENS) and AU in Denmark is critical for the success of this MRA program. Bringing our two universities together strongly aligns with USask's second commitment in the University Plan—Boundless Collaboration and its goal of emboldening partnerships by growing international partnerships in research, scholarship, and training. Additionally, our new partnership also aligns with the International Blueprint. Under Goal 1—Internationalizing Learning Experiences—in the *Blueprint*, the MRA would "enhance international and cross-cultural perspectives in content and learning in curriculum" by partnering with AU, Denmark. AU is an ideal partner for two reasons. First, they have expertise that is very complementary to our own expertise. While there is some overlap, AU also has very different strengths in risk assessment that mean that we can combined offer a program neither university can do on its own. Second, they have the teaching capacity in that as a new department at AU (formerly a government department incorporated into AU), they do not yet have a full teaching load. This program will take advantage of that unique and timely opportunity.

In the program, Toxicology/SENS faculty will work collaboratively and in partnership with colleagues at AU to build and deliver international and cross-cultural content for the chemical risk assessment curriculum applicable globally, but with a focus on North American and European professionals. The program has been developed with a global focus from the start. Students will work virtually in groups with students from other parts of the world on group assignments, some with different regional foci. Group-based solutions to global challenges and teamwork will be stressed and expected.

The MRA also aligns with many of USask's institutional signature areas—*Agriculture* (pesticides), *Communities and Sustainability* (sustainable use of chemicals), *Energy and Mineral Resources* (mining and metals), *Health and Wellness* (human health risk assessment), *Indigenous Peoples* (protection of natural resources and related Treaty and Aboriginal Rights), *One Health* (environmental exposures), and *Water* (pollution).

Changes currently happening in Europe are partly driving why the chemical risk assessment program is so important. In 2020, the European Commission published its <u>Chemical Strategy for Sustainability</u> (CSS) as the first step towards Europe's *zero pollution ambition* where it strives to "reconcile the societal value of chemicals with human health and planetary boundaries" and "to support industry in producing safe and sustainable chemicals" (p. 24). Part of the CSS is to provide pathways for "green" transition of the chemical industry for a "more sustainable chemical economy, encompassing good science that fits the practical needs of the end users" (Sanderson, et al. 2023). However, to facilitate the "green transition", professionals need the training and tools to assess if and how chemicals affect humans and the environment. Europe is responsible for 17% of the world's production and consumption of chemicals (https://www.eea.europa.eu/publications/managing-the-systemic-use-of). There are approximately 15,000 small and medium sized companies in Europe that mostly lack expertise with the new EU chemical regulations and with risk assessment procedures and requirements. These are the companies that are asking for a program like the one we are proposing here, as well as consulting companies across Canada (Liber, pers. com.). Now is a very opportune time for SENS and USask to become a world leader in this domain by building and delivering a much-needed program for environmental sciences professionals, chemical and resource companies, and regulatory agencies.

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 was designed for early- and mid-career professionals working as environmental scientists, analysts, regulatory affairs associates, and/or consultants in the environmental, resource and chemical sectors. Consultation with government, industry, and consulting firms has demonstrated a need for early career professionals to be proficient in the theory, principles, data collection, and use of software and tools for undertaking risk assessments. Indeed, 30–50% of the job accountabilities for these types of professionals includes chemical risk assessments—for example:

- Environmental assessment
- Feasibility assessment
- Chemical use
- Approval of new chemicals
- Industrial regulations/approvals
- Environmental disturbances

As mentioned above, small and medium size chemical companies in Europe have asked for such a program for their employees so that they can be properly trained in the underlying principles of the new EU chemical regulations and risk assessment process.

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

Presently, no universities in Canada offer a graduate degree of any sort in chemical or environmental risk assessment. Some Canadian universities offer individual courses, but those courses are part of broader graduate programs in environmental sciences, toxicology, or public health (see Appendix B).

<u>Canada</u>

- Presently no degree programs are offered anywhere in Canada in chemical risk assessment.
- Approximately 20 courses are delivered at other Canadian universities that cover or include aspects of chemical risk assessment. These are largely individual courses, or very rarely 2–3 courses (Universities of Montreal, Ottawa, and Waterloo), that are part of a degree in other programs.

Denmark and the European Union

The assessment of need for the European continent was performed with a starting focus on Denmark since AU is a partner in this program. There are five major universities in Denmark besides AU (Copenhagen University, Aalborg University, The Danish Technical University, Roskilde University, and University of Southern Denmark). They all provide degrees in environmental science. Risk analysis and chemical risk assessment are part of their programs, but not as a stand-alone full program. Moreover, none of their courses have a global focus and none are online programs.

We have also reviewed the programs from leading European universities with an environmental focus and other research institutions via the Partnership for European Environmental Research (PEER) collaboration (https://www.peer.eu/) of which AU is a long-standing and active partner. The picture is much the same as in Danish universities – there are courses in chemical risk assessment, but not full programs and none with a global e-learning platform.

We have also conducted quick reviews and found online courses in risk assessment and chemical risk assessment from trade groups and other organizations and research institutions, but again none that were full 2-yr comprehensive programs with the focus and depth of the proposed MRA. Furthermore, in the CSS of the EU there has been an explicit request for universities to update their educational programming to reflect the new regulations that are coming. Moreover, we have talked with SMEUnited (https://www.smeunited.eu/) who represent Small and Midsize Enterprises in the EU (including ~13,000 chemical producers) and have heard that they all need new training like the program we are proposing. The chemical use landscape is changing fast in the EU and there is a huge educational need that we hope to partly fill.

In addition, we have discussed the development of the MRA program with partners in other networks that we are involved with, such as the WHO Chemical Risk Assessment Network (WHO CRAN) (https://www.who.int/groups/chemical-risk-assessment-network); The Health and Environmental Sciences Institute (https://hesiglobal.org/); and ECETOC (https://www.ecetoc.org/). Partners from these and from PEER all agreed on the need for a program like the one presented here and many also showed interest in supporting and contributing to our proposed program (e.g., guest speakers and guest instructors).

Our AU colleagues have also worked on projects and as advisors to the Danish and European environmental authorities and regulatory bodies, as well as with similar organizations in the USA. We therefore understand the differences in risk assessment approaches among these entities. Moreover, via work with HESI and WHO CRAN it has become clear that there is a growing and diverse need for further educational training regarding chemical risk assessment, in particular among countries outside of the Organization for Economic Cooperation and Development. We also conducted a survey among WHO CRAN members from the developing economies and found that more than 60% of them lack basic information to enable sound public health and environmental protection via risk assessment of chemicals in use.

In general, the development, production of and use of chemicals is increasing globally not the least among developing nations—there are now >200 million registered chemical structures (https://www.cas.org/cas-data/cas-registry). The consumption of hazardous chemicals remains high in the EU despite strong regulations (see figure below from EUROSTAT). The same picture is expected globally.



This pattern has been recognized in Europe and a new chemicals policy for sustainability (https://environment.ec.europa.eu/strategy/chemicals-strategy_en) is being implemented as part of the new Green Deal in the EU. In addition to the above-mentioned challenges, the European industry represents approximately 10% of total CO₂ emissions globally and is one of the five major drivers responsible for biodiversity loss globally. These facts have also led to an increasing lack of public trust in chemicals regulations in the EU where more than 80% fear health and environmental impacts of toxic chemicals, possibly suggesting that they are not satisfied with the current policies, regulations, and science underpinning these. Therefore, there is a need to update, expand and enhance education on chemical risk assessment as proposed in the MRA program, which to our knowledge is unique in scope, reach and content globally.

<u>Globally</u>

- Only a few programs exist globally that focus on chemical risk assessment. The following are the programs we are aware of.
 - <u>Master of Environmental Risk Assessment and Remediation</u> (University of Newcastle, Australia, start date = 2019). This program is offered in conventional classroom format, not online; It also has much more limited scope than what is proposed here.
 - <u>Environmental Risk Assessment Postgraduate Certificate</u> (American Public University); limited in scope but offered online; faculty not widely recognized.
 - <u>Environmental Risk</u>, M.Sc. (Roskilde University, Denmark). Offered in conventional face-to-face format; limited scope.
 - <u>Environmental Risk Assessment, Graduate Certificate</u> (University of Illinois Springfield, USA); limited scope, not a degree program.
 - <u>MSc in Toxicology for Human Risk Assessment</u> (Johns Hopkins University, Bloomberg School of Public Health)

The proposed MRA program offers several advantages over other programs with a risk assessment focus offered by other universities elsewhere in the world:

- All lectures will be delivered by well-recognized university professors and world-recognized experts in topics related to chemical risk assessment (including M. Hecker., M. Brinkmann, K. Liber, and P. Jones at the USask, and H. Sanderson, J. Jensen, PB Sørensen, P Fauser, AB Pedersen at AU—See Appendix C for a complete list of all faculty/experts and their expertise.)
- Completion of the program will lead to a full master's degree in Chemical Risk Assessment (MRA).
- The program can be accessed and completed from anywhere in the world with a good internet connection; students will not be required to travel to relocate to either USask or AU.
- The program is specifically created to allow working professionals to take the program without having to leave their place of employment.
- All courses have very practical, "hands-on" components where students learn to use current risk assessment models, tools, software, and approaches.
- The expected completion time for the program is two years; however, there will be no requirement that the program has to be completed in one 2-year cycle.
- Courses have a global focus and are structured so that students from around the world will work together to address real-world issues related to chemicals management, chemicals and human health, and chemicals in the environment (global problems require global solutions).
- No mandatory residency will be required.
- Successful completion of the program will prepare graduates well for separate certification in environmental risk assessment managed by the *Society of Environmental Toxicology and Chemistry*.

Admissions

a. What are the admissions requirements of this program?

Admission Requirements

- a four-year degree, or equivalent, from a recognized college or university in a science-related discipline, OR a three-year first cycle undergraduate degree in an academic discipline relevant to the proposed field of study from an institution that meets the criteria set forth in the **Bologna Declaration** will be acceptable as the equivalent of an undergraduate degree.
- a minimum cumulative weighted average of **at least** a 70% (USask grade system equivalent) in the last two years of study (e.g., 60 credit units)
- Language proficiency requirement: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English.

- a statement of intent
- an up-to-date Curriculum Vitae

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

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

Students in the Program shall be subject to the rules, regulations, policies, and procedures set out in the USask Catalogue, Policies and Procedures Manual (<u>http://policies.usask.ca</u>), as well as other policies, regulations and standard practices of USask and its College of Graduate and Postdoctoral Studies.

*Contact the <u>Toxicology Centre</u> for details about the online application process

Selection Criteria

A completed online application, the associated application fee, and all supporting application documents including:

- Statement of Intent: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to join the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program. This statement is a key component in adjudicating each applicant's suitability for the program.
- Letters of reference: Applicants will need to provide three letters of reference—either academic or professional letters. In their letters of reference, all referees should speak to the applicant's ability to succeed in a graduate program.
- Up-to-date Curriculum Vitae: Applicants must include all post-secondary education, work experiences, and any publications, presentations, and awards.
- Transcripts: Full transcripts and a copy of the previous degree diploma must be provided upon application.

Description of Program

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

The Master of Chemical Risk Assessment is a 36-credit unit program (twelve 3cu courses). Program content will largely follow the standard risk assessment paradigm and include the four key components: problem formulation, exposure characterization, hazard characterization, and risk characterization.

Overall Curricular Objectives

Graduates of the MRA program will:

- Develop an in-depth knowledge of all aspects of chemical risk assessment from theoretical to practical.
- Become efficient at obtaining data for chemical risk assessments and learn to use tools and models to perform chemical or site-specific risk assessments.
- Learn how to use modern, science-based risk assessment approaches in support of decision making, both corporate and regulatory.
- Develop an appreciation for the regulations and policies that often govern how risk assessments need to be done.
- Learn how to work in groups representing diverse stakeholders to set risk assessment goals and come to mutually acceptable solutions.

General Program Content Outline

Courses will include problem formulation and conceptual models, consultation, and social license, environmental chemodynamics, exposure characterization and modeling, principles of toxicology, ecotoxicology and hazard determination, guidelines and benchmarks, cumulative risk assessment, risk characterization, probabilistic Ecological Risk Assessment, protocols, and national/international regulations (incl. applicable laws), and decision making and risk communication.

The MRA program is comprised of four phases of learning which includes 12 courses in total:

1. Problem Formulation and Historical Lessons (6 cu)

- a. Introduction to Chemical Risk Assessment and Problem Formulation
- b. Historical Lessons in Chemical Risk Assessment
- 2. Exposure Characterization & Hazard Characterization (12 cu)
 - a. Environmental Exposure Characterization
 - b. Principles of Ecotoxicological Hazard Characterization
 - c. Principles of Human Exposure Characterization
 - d. Principles of Human Hazard Characterization

3. Approaches, Tools, and Regulations (12 cu)

- a. Approaches, Models and Tools for Characterizing Exposure and Hazard
- b. Practical Skills for Characterizing Exposome
- c. Practical Skills for Characterizing Hazard
- d. Risk Assessment and Regulatory Systems

4. Integration & Future Directions (6 cu)

- a. Sustainable Chemical Risk Characterization for Decision-Making
- b. Chemical Risk Assessment Project

See Appendix D for the proposed MRA course sequencing and 2-year schedule.

Figure 1: Structure for the Proposed Master of Chemical Risk Assessment (MRA) Program

Master in Chemical Risk Assessment (MRA)



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

The impetus behind developing the MRA was to create an exceptional global program that meets the current and future demand from government, industry, and consulting firms for chemical risk assessment and aims to build comprehensive skills and knowledge for all participants. The characteristics embedded within the proposed program include:

- Current and highly applied solutions-oriented programming.
- Experiential learning opportunities (i.e., learning by doing—guided by regulatory requirements and needs identified by practitioners).
- Online courses— Courses will be delivered in an online format to accommodate working professionals worldwide.
- Bring highly experienced instructors from two major universities together to broaden and deepen the scope of the program.
- A focus on working in small groups to address real-world chemical and risk assessment challenges.
- Extended use of real datasets and case studies.
- Graduates will be well prepared for subsequent certification in risk assessment through the International Board of Environmental Risk Assessors (IBERA) run through the Society for Environmental Toxicology and Chemistry (SETAC).

MRA program courses will be delivered in a 6-week compressed format; we do not anticipate any courses would be delivered in the conventional 1-term/semester format. Time of day for course delivery will have to be considered for international students and because instructors are on two different continents. For compressed courses, this would amount to 6 hours per week for 6 weeks. The courses will be a mix of synchronous and asynchronous delivery. Typically, asynchronous time will be used for activities such as listening to recorded lectures, doing assignment/group work, and completing additional readings/work. The synchronous time will be for Q&A, group discussions, discussion of assignments, etc. Also, we expect to deliver fewer hours of synchronous classes per week (than is typical for traditional courses), which is more accommodating for our working professionals target demographic to complete the program.

All lectures will be video- and voice-recorded so that students can watch at their leisure (videos only available to enrolled students for the duration of the program). Some students may not always be available to participate in the live, interactive classes, but we will schedule synchronous sessions so that most students can participate (which will also be recorded for those who cannot join live). This timing will also vary from course to course and will consider where the students are located.

We will engage highly recognized external experts in the delivery of some courses to obtain deeper expertise in some subject areas and gain wider recognition of program quality.

c. Provide an overview of the curriculum mapping.

				MRA Courses
Leader	ability to lead (sustainability) teams	ethics	models ethical practice, integrity, and responsibility	870, 871, 880, 881
to engage in respectful		commitment	demonstrates commitment to sustainability principles and social justice	870, 871, 880
	relationships with other individuals and organizations,	trust	creates organizational cultures that foster learning and trust between those organizations and others they collaborate with	All courses (they all have group work requirements)
	reflective practice, and	reconciliation	seeks strategies for reconciliation between Indigenous and non-Indigenous peoples	870,871
	undertakings in the	growth	supports the professional and personal growth of team members	870, 876, 877, 878, 880
	face of changing conditions and sustainability	adaptive	adapts their own leadership style as situations demand, with consideration for others' individual styles, strengths, interests, needs, and capabilities	870, 876, 877, 878, 880, 881
	challenges	risk-taking	takes measured risks to embrace innovative and entrepreneurial solutions to sustainability challenges	870, 880
Integrator	ator ability to understand and apply strategies <i>understand</i>		generates understanding of their organization's culture, policies, and behaviour to constructively influence change	870, 871, 879, 880
ethical inquiry to support organizational learning and effectiveness <i>ir</i>	multiple sources	uses frameworks for comprehensively integrating knowledge from multiple sources to inform decisions, which translate that knowledge into action	870, 876, 880, 881	
	theories of interaction	applies appropriate principles, methods, and theory of human interaction at individual and group levels to clarify and steer organizations towards sustainability objectives	870, 871, 880	
cho		change agents	identifies and meaningfully engages key change agents to influence and support organizational decisions and practices	870, 871, 876, 880, 881
		conflict	seeks strategies to acknowledge, confront, and grow from conflicting points of view within a sustainability organization or project	870, 871, 880, 881
Thinker	the ability to guide personal and organizational strategy	complexity	effectively navigates complexity and uncertainty in socio-ecological systems and understands how to cope effectively with those characteristics of sustainability challenges	870, 871, 879, 880
	by applying systems open-minded		approaches problems openly and systematically, without prejudging their solutions	870, 876, 877, 878, 880
	thinking to develop holistic, innovative solutions to sustain	multiple dimensions	effectively explains and understands the origins and multiple dimensions of sustainability	870, 871, 873, 877, 878, 880
	ability challenges	challenge	regularly challenges assumptions to facilitate learning and performance in oneself and others	All courses
		diverse data	interprets, integrates, and acts on diverse quantitative and qualitative data related to human and natural systems, including their own organizations to advance practice	All courses
Collaborator	ability to convey and receive information	communication	applies effective two-way communications strategies to work with different audiences and contexts	All courses

and build effective, respectful r relationships with		relationships	creates and maintains constructive and respectful relationships and networks across collaborating organizations	All courses
others, especially where differences	others, especially where differences	ways of knowing**	enables respectful inclusion of multiple ways of knowing, being, and doing, particularly those of Indigenous Peoples	870, 880
	exist	humility	balances expertise with humility and openness	All courses
		healthy debate	facilitates exchange of knowledge, values, and perceptions among parties to generate healthy debate and formulate strategies	All courses
Adaptor ability to learn experience an in ways that g beyond simply achieving obje	ability to learn from experience and action in ways that go	self-awareness	demonstrates awareness of strengths, limitations, and assumptions of one's own standpoint on sustainability issues and in interactions with others	All courses
	beyond simply achieving objectives,	continual learning	encourages continuous learning in oneself and others, as well as fostering effective organizational learning that continuously evaluates decisions	All courses
continuously learn and man		management	generates and/or maintains effective systems for management of projects and programs	All courses
	re-assess their own goals, policies, and	feedback	seeks and provides feedback to team members to enhance individual and group performance	All courses
	procedures	self-monitoring	effectively self-monitors and manages oneself and others in the context of sustainability projects	All courses

** NOTE It is critical that all relevant stakeholders are at the table at the Problem Formulation stage, the first important step of a risk assessment (RA). All involved parties have to come to agreement on the scope of the RA, where the "boundaries" of the assessment are, and what assessment and measurement endpoints will be included (among other things). If all parties do not buy into the study and the approach from the beginning, they will not accept the outcome. In such assessments, stakeholders may include industry, government/regulator, consultant, community, including Indigenous community members, and possibly academics. Students must understand and represent the different stakeholders are tasked with arguing the case of the RA from their stakeholder's perspective, including representing Indigenous concerns and wishes. At the end of the exercise, the groups must come to consensus on how the RA should be performed. Indigenous views and multiple ways of knowing will be included here.

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

Our program and courses are centered on building professional skills and knowledge for problem solving and application of solutions. Students will develop their skills in synthesis and analysis, application of appropriate approaches, critical thinking, and problem solving through every single course in the program.

e. Explain the comprehensive breadth of the program.

The primary objective of the MRA is to train graduates to become fully proficient in the art and science of chemical risk assessment to the point where they can immediately step into the workforce as a risk assessor or be able to perform in their existing job at a higher level. The program is designed to benefit both those with no risk assessment background and those with limited to moderate risk assessment experience. This program is therefore designed to meet the needs of working professionals and recent graduates wanting to expand their skills in a highly employable field.

The principles of risk assessment, whether focused on assessment and regulatory approval of chemicals or assessment and evaluation of contaminated industrial sites, are largely standardized globally. As a result, the proposed program should be relevant to and of interest to individuals globally. While the program content does have a North American and European focus, examples and case studies from around the world will be used. In addition, participants are free to choose examples for their many projects with a focus that is of interest to them or relevant to the country or region from which they come. Participants are required to have some background in natural science (e.g., a four- year degree in a science-related discipline). Having participants from slightly different backgrounds actually helps with the group work that will permeate the program. This diversity is also seen in the background of the dozen or so different faculty that will deliver the program. The program will cover both principles and concepts and introduce participants to the tools and models needed in modern chemical risk assessment. Hands-on experience and group work is part of all courses. Students will learn how to find the data and information needed and learn how to apply the knowledge and skills they have acquired. The program will be relevant to all main employment sectors: government, industry, and consulting.

This MRA program will also allow us to contribute to and advance positive solutions towards the United Nations' <u>Sustainable Development Goals (SDGs)</u>. The following table outlines which of the SDGs the program works to address and advance.



Connection to Sustainable Development Goals (SDGs) Sustainable Development Goals

SDG	i	Aspiration				
3	Good Health & Well-being	Ensure healthy lives and promote well-being for all				
4	Quality Education	Ensure quality education and promote lifelong learning opportunities for all				
6	Clean Water & Sanitation	Ensure access to water and sanitation for all				
8	Decent Work & Economic	Economic growth of chemical companies and resource industries is tied to producing safer				
	Growth	chemicals and operating in a greener and more sustainable manner				
13	Climate Action	Take urgent action to combat climate change and its impacts				
14	Life Below Water	Conserve and sustainably use the oceans, seas, and marine resources for sustainable				
		development				
15	Life on Land	Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage				
		forests, combat desertification, and halt and reverse land degradation and halt biodiversity				
		loss				

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

The table below illustrates how the required courses in the Master of Chemical Risk Assessment align with the Five Learning Objectives outlined in the University's *Learning Charter*. The course numbers are listed for each learning objective and its sub-objectives.

	Description	MRA courses
Pursuit of Truth and	Critical thinking	All courses
Understanding	Multiple ways of knowing and learning	TOX 870, 871, 880, 881
	Intellectual flexibility	All courses
Pursuit of	Depth of understanding in subject area	All courses
Knowledges	Breadth of understanding how subject area intersects with related subject areas	All courses
	Understanding how one's subject area impacts communities	TOX 870, 871, 873, 874, 877, 879, 880
	Using and applying one's knowledge with respect to all individuals	All courses
Pursuit of Integrity	Exercising intellectual integrity and ethical behavior	TOX 870, 871, 879, 880
and Respect	Recognizing and thinking through moral and ethical issues	TOX 870, 871, 879, 880
	Recognizing the limits to one's knowledge, skills and understanding and acting in accordance with these limits	All courses
	Appreciate one's own worldview while showing respect for others' worldviews	TOX 870, 871, 879, 880
Recognizing and thinking through	Develop and apply research, inquiry, knowledge creation and translation skills	TOX 870, 871, 879, 880
moral and ethical	Communicate clearly, substantively and persuasively in different contexts	All courses
issues	Locate, understand, evaluate and use information effectively, ethically, legally and with cultural appropriateness	All courses
Pursuit of Skills and Practices	Commit to positive growth and change for oneself and for local, national, and global communities	All courses
	Act with confidence and strength of purpose for the good of oneself and different communities	TOX 870, 871, 879, 880
	Embrace responsibilities to oneself and others in ways that are authentic and meaningful	TOX 870, 871, 879, 880
	Sharing knowledges and exercise of leadership as acts of individual and community responsibility	All courses

Learning Charter: Five Learning Objectives

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

The *Master of Chemical Risk Assessment* is open to individuals who have completed a 4-year undergraduate degree in a program relevant to the MRA program curriculum and to students holding a graduate degree in an appropriate science-related discipline. In unique situations, some students may also be able to transfer into the MRA program from other SENS and TOX graduate programs, but it would be rare that their previous academic background would allow for credit transfer since very little of this material is taught in other USask courses.

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

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

- 1. **Enrolment**: We project that the MRA will meet its full enrolment target (40 students) by the third intake (2028). Success for the first intake would be 12–16 students.
- 2. **Target Audience**: We will measure success by attracting early-career working professionals who work in any sector in any jobs that undertake risk assessments (annually).
- 3. **Demand**: Measured by the percentage of high-quality applicants and application numbers (biannually).
- 4. Student satisfaction: Measured by exit surveys and course evaluations (annually).
- 5. Feedback from Employers: Evaluated via surveys with agencies or companies where participants already work, or in the case of new students, for future employers (every two years—after each cycle of the program).
- 6. **Certification Success**: The number of graduands who successfully pursue IBERA certification (every two years—after each cycle of the program).

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.

While the MRA program will not be an accredited program, its comprehensiveness provides all the information students need to become IBERA certified. Upon its completion, graduands should be fully prepared to sit for the risk assessment board exam offered through IBERA, the International Board for Environmental Risk Assessment. The MRA program has been created with meeting that professional standard in mind.

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 is an entirely new program, and all associated courses are new. There is no similar program in either Toxicology or SENS, or in any other unit at USask. Most of the courses within the MRA program will be open to Toxicology and SENS thesis-based graduate students as electives that may complement some of their research work. Some courses may also be taken as an elective for students in SENS non-thesis Master of Sustainability – Regenerative Sustainability program.

Graduate students outside of SENS will also benefit from individual course offerings. We note that there is a paucity of graduate courses on offer across campus related to risk assessment, whether chemical, environmental, or human health; some courses may be particularly useful to students in other graduate programs.

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

No other unit has been consulted since the MRA program does not infringe on any existing program at USask.

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

We provide students with all they need through the course. There are a significant number of free online and government resources. See Appendix F for the Library Consultation Form.

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

Prior to development of the MRA program, consultation was performed in both Canada (by K. Liber, USask) and in Europe (by H. Sanderson, AU) with senior leaders of government, industry, and consulting firms.

The Canadian consultation included discussions with key representatives from Environment and Climate Change Canada and Health Canada (primarily the Pest Management Regulatory Agency). These consultations were either in-person at their places of employment or via telephone. Additional and extensive consultation was also undertaken with senior leaders of major consulting firms (Canada North Environmental Services; Golder (now WSP); Azimuth Consulting Group; Intrinsik Corp.) and with some natural resource industry (Cameco Corp., Suncor Energy) employees. The outcome was overwhelmingly positive with many individuals saying "if you create this program, we will send some of our junior employees". The response was similarly positive in Europe where all major users and manufacturers of chemicals must now approach product development and use from a risk assessment and sustainability perspective. Consultation was also conducted with board members of the Society of Environmental Toxicology and Chemistry (SETAC) that has launched the IBERA certification. Dr. Liber was part of the board of directors that oversaw the launch of a certification program in North America.

We performed assessment of MRA program demand in Denmark and broader qualitative assessments of the available online learning-based chemical risk assessment educational options in Denmark, Europe and globally. In Denmark there are five universities (AU, University of Copenhagen, South Danish University, Roskilde University, and Aalborg University) that offer environmental studies programs. These entail courses that addresses pollution, including chemical pollution. The universities have courses that introduce toxicology, exposure assessment, and the key tenants of risk assessment. However, none of them offer chemical risk assessment as the focal topic of a Master's program. Additionally, while the universities have transferred more of their teaching to online learning, none of them have all the elements connected in a global context in an online learning program.

According to the EU consultations with the Danish Center for Environment and Energy (DCE: <u>https://dce.au.dk/en/</u>), the Partnership for European Environmental Research (PEER: <u>https://www.peer.eu/</u>), and HESI organization (<u>https://hesiglobal.org</u>) where Dr. Sanderson is a member of the Board of Trustees, no global 2-year Master's Program in Chemical risk assessment exists. However, the consultations indicated that there was a clear need, particularly in developing nations, for training on global risk assessment. This is why HESI has started the GRATC (Global Risk Assessment Training Program) project (<u>https://hesiglobalrisktrain.org/</u>). H. Sanderson, our Danish lead, is also a member of the WHO Chemicals Risk Assessment Network, CRAN (<u>https://www.who.int/groups/chemical-risk-assessment-network</u>) and leader of a task force under CRAN with a focus on developing nations chemical risk assessment educational needs. A list for the 97 participating institutions in the CRAN can be found at the link provided above. In a recent survey among 15 developing countries, none of them had an adequate inventory over chemicals imports, production, and use in their country—thus limiting effective risk management. The task force Sanderson leads is focused on addressing this challenge.

Chemical risk assessment can be split in two broad approaches: (1) retrospective risk assessment assessing risks from contamination that has or is occurring and (2) prospective risk assessment which focuses on assessing the risk of chemicals before they enter the market or reevaluating chemicals already on the market. The latter is impacted by the various chemicals management programs around the world. Currently, the regulations in the EU, the second largest market for chemicals in the world, is changing with the new policy called Chemicals Strategy for Sustainability. This will set new standards for access of chemical producers to the EU market. Given these new standards, people working in the chemical sector will require upgraded and new skills to satisfy the new demands to the formulation and marketing of chemicals globally. Our first of its kind master's program will provide these skills to the new work force and upgrade the people already working in the sector.

<u>Budget</u>

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

We estimate that approximately 12–14 instructors will participate in delivering the program, including faculty from both USask and AU and sessional instructors from other organizations (~0.15 FTE for each 3-cu course solely delivered). **Note:** We anticipate that some instructors will teach more than one course within the program, and in most cases, they will be co-taught. Many courses will also have guest presentations by different faculty members from TOX. The number in Table 3 below refers to the number of 3-cu equivalent courses to be delivered in the program by faculty and two courses by sessional instructors <u>in each 2-year cycle of delivery</u>. Given the multiple courses and co-teaching, we have provided budget numbers by course (0.15 FTE) rather than by instructor. All faculty salary costs will be provided by each university as in-kind contributions.

The total number of credit units needed to deliver the program is 36 credit units.

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

No courses will be eliminated. However, some Toxicology graduate courses may be offered less frequently (maybe every 2–3 years) to accommodate the addition of the new MRA courses. All these courses will be open as electives for other SENS and Toxicology graduate students. No program or course is being eliminated at AU; this program will be a new endeavour for them and the partner group from AU already have their teaching commitment approved by their college.

c. How are the teaching assignments of each unit and instructor affected by this proposal?

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) will voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

The program will be offered on a two-year cycle (thus all courses are only offered once every two years) with intakes in September 2024, September 2026, September 2028, etc. This will reduce course delivery pressure on core faculty (only approx. 40% of the curriculum will be delivered by USask faculty, averaging to 20% per year).

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

One-time costs:

• Teaching Assistant positions—We expect to hire TAs to assist instructors with the preparation of courses, including getting the course set up in Canvas—approximately ~30 hours per course (i.e., 180 hr/year for Y1 and Y2).

On-going costs: On-going costs will be absorbed by the Unit. Faculty come from our existing faculty complement; administrative support will be provided by existing staff. We anticipate on-going commitments associated with:

• Salaries of USask and AU Faculty; these costs will be provided as in-kind costs from USask and AU. There are no incremental costs.

- Sessional Lecturers— ~6 cu per 2-year cycle will be delivered by external partners and adjunct faculty under contract. We will pay about \$10,000 per 3-cu course (delivered online).
- Salary of Admin support: We anticipate that the admin support needed to facilitate this program will be provided by the current Toxicology administrative staff. We anticipate that the work will be roughly equivalent to 0.25 FTE of an ASPA phase 1 position in the first couple of cycles of the program. As the demand for the program grows and administrative work starts to exceed this, we may consider hiring another part-time admin support person as the revenue allows.
- Teaching Assistant positions—We expect to hire TAs to assist instructors with the delivery of the courses (~120 hours/year). This is for USask only. AU will hire their own TAs to support their faculty.
- Promotion: We anticipate spending ~\$4,000 CAD every second year for promotion and marketing (marketing efforts will largely focus only on the year prior to intake of new students).

As enrolment and revenue increase, we anticipate that some revenue will be reinvested to offset on-going costs. Once our external costs (e.g., sessional salaries) and administrative/operational costs have been covered, the remaining tuition revenue equivalent will be calculated. This will then be split between USask (TOX/SENS) and AU based on the credit unit equivalent of teaching provided by faculty from the two institutions. This calculation will be performed at the end of each academic year. Aarhus U will then be compensated via a payment from USask for their teaching efforts. It is anticipated that this split will be approximately 50% for each of the two institutions, but it could vary somewhat from year to year.

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

Faculty course development and delivery costs of the distributed content will be covered under the normal assignment of duties. We will provide the team of instructors with support and instruction on how best to deliver the program jointly over two continents. Teaching Assistants will be hired as one way to support instructors for preparation and delivery.

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

This program will be delivered in partnership with AU, Denmark. Aarhus U has their own resources that will contribute to TA costs for Danish faculty and marketing within Europe. There is no direct cost to USask for the time of their faculty; the revenue they receive for their contribution to delivery of the program will cover their expenses.

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?

The MRA is expected to be a self-funded program. However, a number of the government, industry, and consultation firms we have consulted with have indicated that they would pay for some of their employees to take such a program. This program is similar in principle to other SENS non-thesis professional Master's programs Master of Sustainability and Master of Water Security).

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).

Based on the existing professional master's program tuition models in SENS, we propose a special tuition model that charges student tuition based on a single credit unit (or 3-cu course). Our tuition projections are based on

\$425 per credit unit for domestic students and \$956 for international students (based on the existing 2.25 differential for all international master's students) in the 2024–2025 academic year (a 4% increase in tuition from the current academic year). We anticipate an approximate 4% tuition increase each year after the beginning of the program as well.

Therefore, we propose a tuition model where a 3-credit unit course would be \$1,275 ($$425 \times 3$) for domestic students and \$2,868 ($$956 \times 3$) for international students. In this model, tuition costs for each student will be assessed each semester according to how many credit units the student is taking in that semester (rather than the full program divided equally among terms). This tuition model is necessary to accommodate students to complete the program in longer than 2 years.

Note: Given the partnership between USask and AU, Danish students will be considered comparable to domestic students and will pay domestic student tuition rates. This has been approved by the Provost's office (mechanism still to be determined).

	Cost per 3 cu course	Cost per 36 cu program
	(2024–2025)	(2024–2025)
Domestic Students (Canada and Denmark)	\$1,275	\$15,300
International Students	\$2,868	\$34,416

Table 1 Tuition costs for Domestic and International students for 2024–2025

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

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

The following tables provide the budget projections for delivery of the program. Table 2 indicates the enrolment projections and the associated revenue for the program over the next 6 years. Table 3 indicates the expected tuition revenue and costs associated with program delivery. The highlighted column indicates the year (Year 5— i.e., the third intake) when we anticipate reaching our target enrolment numbers for the program. In this year, the estimated cost of the program is \$74,038 while the estimated revenue is \$663,020, which would lead to a **\$588,982** surplus in Year 5. We project a surplus in all years.

Intake Year	Program year	Domesti	c students	dents International Students		Total Tuition	
		Number	Revenue	Number	Revenue	Revenue	
September	Y1 (2024)	F	\$38,250	10	\$172,125	\$210,375	
2024	Y2 (2025)	5	\$39,780	10	\$179,010	\$218,790	
September	Y1 (2026)	10	\$82,742	20	\$372,341	\$455,083	
2026	Y2 (2027)	10	\$86,052	20	\$387,234	\$473,287	
September	Y1 (2028)	10	\$116,342	27	\$543,677	\$659,646	
2028	Y2 (2029)	13	\$120,996	27	\$565,424	\$686,420	

Table 2 Enrolment and Revenue projections

* Assume 4% increase each year with a 2.25 international differential.

The program will be offered on a two-year cycle (thus all courses are only offered once every two years) with intakes in September 2024, September 2026, September 2028, etc. Students can only enter initial courses in September every two years. This table outlines the enrolment projections along with the expected revenue per year—factoring in 4% increases in tuition year over year and a 2.25 international differential. Additionally, we anticipate approximately 33% domestic enrolment and 66% international enrolment.

Important Note: This budget has been developed in partnership with and with the full support of the Deputy Provost, Dr. Patti McDougall, and Jennifer Beck (Chief Resources Allocation and Planning Officer).

Table 3: 6-year budget projections for total (YR1) and incremental costs of MRA program from 2024 to 2029.

EXAMPLE FOR EXPLANITORY PURPOSES ONLY

Master of Chemical Risk Assessment - Program costs

	REVENUE		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Tuition (cu)		425	442	460	478	497	517
	International differential		2.25	2.25	2.25	2.25	2.25	2.25
	Domestic (33%)	38,250	39,780	82,742	86,052	116,342	120,996
	Internation	al (66%)	 172,125	179,010	372,341	387,234	543,677	565,424
			 210,375	218,790	455,083	473,287	660,020	686,420
	Tuition Allo	cation	\$ 210,375	\$ 218,790	\$ 455,083	\$ 473,287	\$ 660,020	\$ 686,420
	Incrementa	al allocation over prior year		\$ 8,415	\$ 236,293	\$ 18,203	\$ 186,733	\$ 26,401
	Application	Fee Revenue	\$ 1,200	\$ 1,200	\$ 2,200	\$ 2,200	\$ 3,000	\$ 3,000
	Total Yearl	y Revenue	\$ 211,575	\$ 219,990	\$ 457,283	\$ 475,487	\$ 663,020	\$ 689,420
	EXPENDIT	URES						
		SALARY & BENEFITS	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2		Sessional lecturer (@\$10K each)	20,000	20,000	20,000	20,000	20,000	20,000
0.25	0.25 FTE	TOX Administrative Support (ASPA 1)	19,646	20,235	20,842	21,468	22,112	22,775
0.1	0.1 FTE	SENS Administration (ASPA 3)	13,278	13,677	14,087	14,510	14,945	15,393
180	26.62	TAship (development and preparation)	4,935	5,083	0	0	0	0
240	26.62	TAship (delivery)	 6,580	6,778	6,981	7,191	7,406	7,629
		Total Salary & Benefits	64,440	65,773	61,911	63,168	64,463	65,797
		OTHER EXPENDITURES		6.0%	6.0%	6.0%	6.0%	6.0%
		Operating Costs - promo & recruitment	6,000	6,360	6,742	7,146	7,575	8,029
		Miscellaneous	 2,000	2,000	2,000	2,000	2,000	2,000
		Total other expenditures	8,000	8,360	8,742	9,146	9,575	10,029
		TOTAL EXPENDITURES	 72,440	74,133	70,652	72,314	74,038	75,826
	REVENUE O	VER EXPENDITURES SURPLUS (DEFICIT)	 139,135	145,857	386,631	403,173	588,982	613,594
	Overhead (3	5% applied to all expenses)	25,354	25,947	24,728	25,310	25,913	26,539
6% reserves (as per Program Financial Reserves in MoU)		8,348						
	Shared Re	venue USask (amount to each university)	52,716	59,955	180,951	188,931	281,534	293,528
	Shared Re	venue AU (amount to each university)	52,716	59,955	180,951	188,931	281,534	293,528
			120 125	145 057	206 621	402 173	500 000	612 504
			123,132	143,657	200/031	405,175	200,982	013,394

Assumptions

Notes:

1 Tuition based on \$425/cu for 2024-2025 with increases of 4% per year, Int'l differential at 2.25 for all years

2 Overall salary escalation of 3% forecasted for all employee groups

3 Non-salary expenditures escalate 6% per year

TABBS projections are not included given that TABBS reporting is currently on hold. The Budget Implications Form has been included as part of the proposal package.

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 program will be offered on a two-year cycle (thus all courses are only offered once every two years) with intakes in September 2024, September 2026, September 2028, etc. Students can only enter initial courses in September every two years.

We anticipate enrolments of **15** students in the first intake (2024), **30** students in the second intake (2026) and **40** students in the third intake (2028)—with 40 students as our target (and maximum) enrolment for the program. The minimum enrolment for the program will be 15 students. Full-time students will be expected to complete 18 cu of course work in each year of their program.

Additionally, we anticipate 33% domestic and 66% international students. Given the partnership with AU, we will consider students from Denmark as domestic students—we expect fewer than 10% of students to come from Denmark. All other EU students will be considered international 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?

As a new program, the net revenue (minus the incremental costs) will be considered new revenue. In Table 3 above, we provide a comparison of the total revenue, total costs, and the incremental costs of the proposed program.

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

The minimum enrolment number for the program to be independently sustainable is 15 students (5 domestic and 10 international). To be independently sustainable for both USask and AU, we factored in the cost of recovery plus a surplus of \sim \$100,000 (shared between partners) for program growth.

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

We expect to reach our target enrolment of 40 in September 2028. In this year, the incremental cost for the program is \$74,038 plus the 35% overhead (\$25,913), which is less than the projected tuition revenue of \$663,020 by \$588,982. Our budget projections indicate surpluses in every year. See table 3 above (p. 21).

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

None

<u>References</u>

- European Commission. (2020, October). Chemical Strategy for Sustainability. Retrieved from <u>https://environment.ec.europa.eu/strategy/chemicals-strategy_en</u>
- Government of Canada. (2016). Chemical Risk Assessments. Retrieved from <u>https://www.canada.ca/en/health-</u> <u>canada/services/chemicals-risk-assessments.html</u>.
- Sanderson, H., Bloor, M., Bosveld, B., Campos, B., Groh, K., Leopold, A., Thomas, P., & Posthuma, L. (2023, February). Swiftly changing landscapes for European chemicals regulation. SETAC Globe. Retrieved from https://globe.setac.org/swiftly-changing-landscapes-for-european-chemicals-regulation/.

University of Saskatchewan. (2018). University Plan 2025. Retrieved from https://plan.usask.ca/.

University of Saskatchewan. (2018). The International Blueprint for Action 2025. Retrieved from <u>https://plan.usask.ca/international/</u>.

School Statement

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

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

The school statement for the new Master of Chemical Risk Assessment (MRA) is included in Appendix A.

Related Documents

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

Letters of Support

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

Department of Environmental Sciences, Aarhus University, Denmark Pest Management Regulatory Agency, Health Canada, Nepean, Ontario Canada North Environmental Services Limited Partnership, Saskatoon, Saskatchewan Orano Canada Inc., Saskatoon, Saskatchewan Azimuth Consulting Group Inc., Vancouver, BC

All letters are included in Appendix E.

Consultation Forms

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

- 2. Financial Implications Form—completed in consultation with (and with full approval of) Patti McDougall (Deputy Provost) and Jennifer Beck (Chief Resource Allocation and Planning Officer)
- 3. Complete Catalogue Entry

Catalogue Entry for Master of Chemical Risk Assessment (MRA)

Admission Requirements

- a four-year degree, or equivalent, from a recognized college or university in a science-related discipline, OR a three-year first cycle undergraduate degree in an academic discipline relevant to the proposed field of study from an institution that meets the criteria set forth in the **Bologna Declaration** will be acceptable as the equivalent of an undergraduate degree.
- a minimum cumulative weighted average of **at least** a 70% (USask grade system equivalent) in the last two years of study (e.g., 60 credit units)
- Language proficiency requirement: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English.
- a statement of intent
- an up-to-date Curriculum Vitae

For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies <u>Academic Policies</u> for more information.

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

Students in the Program shall be subject to the rules, regulations, policies, and procedures set out in the USask Catalogue, Policies and Procedures Manual (<u>http://policies.usask.ca</u>), as well as other policies, regulations and standard practices of USask and its College of Graduate and Postdoctoral Studies.

*Contact the <u>Toxicology Centre</u> for details about the online application process

Degree Requirements

• <u>GPS 960.0</u> Introduction to Ethics and Integrity

A minimum of 36 credit units are required to complete this program, including the following:

- TOX 870.3 Introduction to Chemical Risk Assessment and Problem Formulation
- TOX 871.3 Historical Lessons in Chemical Risk Assessment
- TOX 872.3 Environmental Exposure Characterization
- TOX 873.3 Principles of Ecotoxicological Hazard Characterization

- TOX 874.3 Principles of Human Exposure Characterization
- TOX 875.3 Principles of Human Hazard Characterization
- TOX 876.3 Approaches, Models and Tools for Characterizing Exposure and Hazard
- TOX 877.3 Practical Skills for Characterizing the Exposome
- TOX 878.3 Practical Skills for Characterizing Hazard
- TOX 879.3 Risk Assessment and Regulatory Systems
- TOX 880.3 Sustainable Chemical Risk Characterization for Decision-making
- TOX 881.3 Chemical Risk Assessment Project

* Students may take up to two break terms during the program. Students who choose to take break term are required to communicate their intent to the Toxicology Centre and register in a maintenance of status course for the term(s).

4. Course Proposal Forms

See Appendix G for all twelve Course Proposals forms and associated syllabi.

Appendices

Appendix A: School Statement



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

MEMORANDUM

То:	College of Graduate and Postdoctoral Studies University Council
From:	Karsten Liber, Executive Director
Subject:	School Statement: Master of Chemical Risk Assessment
Date:	15 December 2023
CC:	

Colleagues,

I am pleased to offer this proposal from Toxicology Centre and School of Environment and Sustainability. On 15 December 2023, the faculty of Toxicology voted unanimously in favour of pursuing this new professional master's program in Chemical Risk Assessment (MRA).

We undertook several rounds of collaborative work and revision between the USask Toxicology Centre and our partner, Aarhus University in Denmark to develop and refine the 12 new courses and their associated syllabi. They are included below in Appendix G. The process to arrive at the recommendation for the structure of the program and the individual courses was an iterative one, with extensive faculty involvement and input prior to a faculty vote.

We have had several both in-person and virtual meetings between the USask faculty group and the Aarhus U faculty group (their faculty have now been approved as adjunct faculty at USask (through SENS). These meetings started in 2019 and have continued on an annual basis with anywhere from 1-3 meetings per year. In addition, I have traveled to Aarhus U in both 2018 and 2019 to work in person with Dr. Sanderson on the concept and program scope. I also met with their faculty and with departments heads and the dean. In addition, we have met in person at several SETAC meetings, the most recent in Dublin, Ireland, in May 2023. Furthermore, I meet regularly via Zoom with Sanderson (on a monthly basis or more). We have also had several meetings of the USask faculty alone to scope out curriculum content and teaching capacity. Overall, planning has been extensive and detailed.

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

Key issues	Resolution
Target audience	Target audience is working professionals in the chemical and natural
	resource industries, government scientists, and environment and risk
	assessment consultants.
Mode of delivery	The program will be delivered online, with both synchronous and
	asynchronous components. See syllabi. This blend of delivery modalities
	will be implemented to reduce barriers for working professionals to
	complete the program while still working full time.
Professional skills vs. academic	Courses are oriented to supporting professional skill development to
offerings	address common toxicology issues. The MRA also includes basic learning
	around chemical risk assessment and prepares graduates for separate
	certification through IBERA (International Board of Environmental Risk
	Assessors).

We are very excited about this new program in Chemical Risk Assessment and the partnership between SENS and the Toxicology Centre and Aarhus University, which are critical for moving SENS, the Toxicology Centre, and the University of Saskatchewan forward to become the "University the World Needs."

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

Sincerely,

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

KEL/jlm

Appendix B: Graduate-level Courses at Canadian Universities that Focus on or Include Aspects of Chemical Risk Assessment (2019–2020)

<u>City or University</u>	<u>Province</u>	Graduate-level courses in Chemical Risk Assessment
Athabasca, Calgary, Edmonton	AB	None
Edmonton	AB	None
Calgary	AB	ENVS 3335: Issues in Environmental Assessment
Edmonton, Camrose, Calgary	AB	SPH 512: Environmental Risk Assessment and Management
	AB	BMC 215: Environmental Risk Management and
Calgary, Edmonton		Communication
Lethbridge, Edmonton, Calgary	AB	None
North Vancouver	BC	None
Vancouver	BC	None
Richmond, Surrey, Langley, and Cloverdale	BC	None
Victoria	BC	ENVR 581: Toxicology and Risk Assessment
	BC	REM 610 G200: Applied Environmental Toxicology and
Burnaby, Surrey, Vancouver	PC	Environmental Management of Contaminants
Kamloops	BC	None MINE 541 Environmental Dick Association to
Vancouver Kelowna	BC	Mining
		PATH 582 Toxicology III: Environmental Toxicology
Victoria	BC	None
Abbotsford Chilliwack and Mission	BC	None
Drince George	BC	None
Nanaimo Duncan Darksvillo Dowell Pivor	BC	None
Drandon		None
Brandon The Des. Thempson	MB	None
me Pas, mompson	MB	None The Master of Science Environment and Geography appears to
	WID	have some sort of risk assessment curriculum, but it is virtually
Winnipeg		impossible to access this information
Winnipeg	MB	None
Winnipeg	MB	None
Sackville	NB	None
Fredericton	NB	None
Fredericton, Saint John	NB	ENVS6003: Environmental Management Tools
Moncton, Shippagan, Edmundston	NB	None
St. John's, Corner Brook, Harlow, UK	NF & LB	ENVS 6007: Environmental Risk Assessment
Wolfville	NS	None
Sydney	NS	None
Halifax, Truro	NS	None
Halifax	NS	None
Halifax	NS	None
Halifax	NS	None
Antigonish	NS	None
Halifax	NS	None
Church Point	NS	None
Sault Ste. Marie	ON	None

Program Proposal: Appendices—FINAL revised 15 February 2024
St. Catharines, Hamilton	ON	MPHA 5P12: Environmental and Occupational Health
Ottawa	ON	None
Ottawa	ON	None
	ON	Health Sciences 5213 Environmental and Occupational Public
Thunder Bay, Orillia	C N	Health
Sudbury, Barrie, Hearst, Kapuskasing, Timmins	ON	None
Hamilton	ON	None
North Bay, Bracebridge, Brantford	ON	None
Toronto	ON	None
Kingston	ON	None
Ottawa	ON	None
Kingston	ON	CC541 Environmental Toxicology and Risk Assessment
Toronto	ON	None
Peterborough, Oshawa	ON	None
Guelph, Toronto, Alfred, Ridgetown, Kemptville	ON	ENVS 6882: Special Topics in Plant and Environmental Health: Environmental Toxicology and Risk Assessment OpenEd (professional development and graduate courses): 2000030 - Advanced Principles of Toxicology
Oshawa	ON	None Graduate Diploma Population Health Risk Assessment and Management (not strictly focussed on chemicals), three
Ottawa	ON	courses:
		1.) PHR 5181 Population Health Risk Assessment I
		2.) PHR 6101 Risk Management in Government
		3.) PHR 6182 Population Health Risk Assessment II
Toronto (St. George), Scarborough, Mississauga	ON	EES1704H: Environmental Risk Assessment
London	ON	None Health Studies (HLTH) 608 Health and Risk Communication in
Waterloo, Cambridge, Kitchener, Stratford	ON	Public Health Health Studies (HLTH) 623 Risk and Exposure Assessment in Public Health
London	ON	None
Windsor	ON	None
Waterloo, Brantford, Toronto, Kitchener	ON	None
Toronto	ON	None
Charlottetown	PEI	None
Sherbrooke	QC	None
Montreal	QC	None
Montreal	QC	None
Quebec	QC	
City, Montreal, Gatineau, Saguenay, Trois- Rivières		None
Montreal	QC	None
Montreal	QC	None
Quebec City, Montreal, Laval, Varennes	QC	None
Montreal, Ste-Anne-de-Bellevue	QC	ENVB 500: Advanced Topics in Ecotoxicology (Graduate & Undergraduate)
		FDSC 626: Food Safety Risk Assessment

Montreal	OC	Specialized Graduate Diploma in Toxicology and Risk Analysis (three courses on Risk Assessment and Management):
		1.) MSN 6021: Environmental Health Risk Management
		2.) MSN 6136: Principles of Risk Analysis 1
		3.) MSN 6138: Principles of Risk Analysis 2
Sherbrooke	QC	Environmental Master Program, two courses:
		1.) Ecotoxicological risk assessment
		2.) Environmental risk management
Rouyn-Noranda, Mont-Laurier	QC	None
Gatineau, Saint-Jérôme	QC	None
Chicoutimi	QC	None
Montreal	QC	None
Rimouski and Lévis	QC	None
Trois-Rivières	QC	None
Quebec City	QC	None
Regina, Saskatoon, Prince Albert	SK	None
Regina, Saskatoon, Swift Current	SK	None
Saskatoon	SK	TOX 820.3 Exposure Assessment
		TOX 821.3 Human Health Chemical Risk Assessment
		TOX 840.3 Wildlife Toxicology and Ecological Risk

IOX 840.3 Wildlife Toxicology and Ecological Risk ENVS 832.3 Risk Assessment & Negotiation of Environmental Issues

ENVS 898.3 Chemical Risk Assessment

Appendix C: USask and Aarhus Faculty to deliver courses in the MRA program

University of Saskatchewan Faculty

 Bluhm, Kerstin (Ph.D. RWTH Aachen University, Germany), Postdoctoral fellow General expertise: Aquatic ecotoxicology, toxicity to freshwater organisms, genotoxicity, green toxicology, omics, adverse outcome pathways. Chemical risk assessment expertise: General ecological risk assessment principles and approaches, general principles and concepts in ecotoxicology, European regulatory systems and frameworks, animal alternatives.
 Brinkmann, Markus (Ph.D. RWTH Aachen University, Germany), Associate Professor General expertise: Aquatic ecotoxicology, bioavailability, and toxicity to freshwater organisms, toxicokinetic modelling, biotransformation, in vitro-in vivo and cross-species extrapolation, omics, adverse outcome pathways, hydrologic and chemical fate modelling. Chemical risk assessment expertise: General ecological risk assessment principles and approaches, general principles and concepts in ecotoxicology, European regulatory systems and frameworks, bioaccumulation assessments, animal alternatives.
 Hecker, Markus (Ph.D. University of Hamburg, Hamburg, Germany), Professor and Canada Research Chair in Predictive Aquatic Toxicology General expertise: Adverse outcome pathways, aquatic toxicology, cross-species extrapolation, endangered species, environmental DNA, fish biology, <i>in vitro-in vivo</i> extrapolation, invasive species, mechanistic toxicology, metabolomics, proteomics, regulatory toxicology, test development, toxicogenomics. Chemical risk assessment expertise: General ecological risk assessment, general principles and concepts in ecotoxicology, hazard assessment, effect-directed exposure assessment, test guideline development, animal alternatives, endocrine disruptor assessment, next generation approaches in hazard and risk assessment.
 Hogan, Natacha (Ph.D. University of Ottawa, Ontario, Canada), Associate Professor General expertise: Aquatic toxicology, systemic toxicology, nutritional toxicology, in vitro testing models in toxicology, bioanalytical toxicity assessment of environmental samples. Chemical risk assessment expertise: General principles and concepts in toxicology, new tools, and approaches in hazard characterisation (molecular tools, omics).
David Janz (Ph.D. University of British Columbia, Vancouver, Canada), Professor General expertise: Aquatic ecotoxicology, biochemical toxicology, developmental toxicology, reproductive toxicology, endocrinology, ecophysiology Chemical risk assessment expertise: ecological risk assessment of selenium in aquatic environments, toxic equivalency factors, principles of human health and ecological risk assessment

Jardine, Tim (PhD University of New Brunswick, New Brunswick, Canada), Associate Professor General expertise: Aquatic food webs, contaminant bioaccumulation, fish movement and migration, social-ecological systems, tropical floodplain ecology, stream ecology. Chemical risk assessment expertise: Source and fate of chemicals in aquatic systems, Indigenous engagement, environmental impact assessment, environmental effects monitoring.
Jones, Paul (Ph.D. University of Otago, Dunedin, New Zealand), Assoc. Professor General expertise: Aquatic ecotoxicology, environmental chemistry, toxicity to freshwater organisms, organic contaminant bioavailability in sediment, water quality guidelines, risk assessment, toxicogenomics, biochemistry. Chemical risk assessment expertise: General ecological risk assessment principles and approaches, general principles and concepts in ecotoxicology, ecological safety assessment of chemicals, probabilistic risk assessment approaches, contaminated site risk assessment.
Liber, Karsten (Ph.D. University of Guelph, Ontario, Canada), Distinguished Professor General expertise: Aquatic ecotoxicology, metal bioavailability and toxicity to freshwater organisms, contaminant bioavailability in sediment, water quality guidelines, pesticide ecotoxicology, use of autonomous sensor systems in aquatic monitoring. Chemical risk assessment expertise: General ecological risk assessment principles and approaches, general principles and concepts in ecotoxicology, ecological safety assessment of chemicals, Canadian regulatory systems and frameworks.
 Niyogi, Som (Ph.D. Jadavpur University, Calcutta, India), Professor General expertise: Environmental toxicology, metal uptake, accumulation and toxicity to aquatic and terrestrial organisms, mechanistic toxicology, neuro-behavioural toxicology. Chemical risk assessment expertise: General principles and concepts in ecotoxicology, application of biomarkers for ecological risk assessment, site-specific risk assessment for metals using the biotic ligand model (BLM) approach.
Stewart, Katherine (Ph.D. University of Northern British Columbia, Canada), Associate Professor General expertise: Restoration ecology, hydrocarbon and heavy metal remediation, contaminants in northern plant-soil systems, soil ecotoxicology, herbicide ecotoxicology. Chemical risk assessment expertise: General principles and concepts in ecotoxicology, ecological safety assessment of chemicals, risk communication with the public and Indigenous communities.



Aarhus University

Aarhus University (AU) AU Roskilde – Dept. Environmental Science AU Aarhus – Dept. Bioscience AARHUS UNIVERSITY Sanderson, Hans (Ph.D. Roskilde University, Denmark), Senior Scientist, Dept. Env. Sci. General expertise: Aquatic ecotoxicology, environmental quality standards risk assessment, computational toxicogenomics, animal alternatives, site specific risk assessment, global public health risk analysis. Chemical risk assessment expertise: Primarily prospective risk assessment and regulatory toxicology. Environmental toxicity and risk of contaminants of emerging concern. QSARs and modelling of chemicals. Higher tier risk assessment methods. Industrial chemicals approval processes globally. Jensen, John (Ph.D. Royal University of Pharmacy, Copenhagen, Denmark), Senior Scientist, Dept. Bioscience General expertise: Terrestrial and aquatic ecotoxicology, environmental quality standards derivation, risk assessment, site-specific risk assessment, field studies and higher tier methods **Chemical risk assessment expertise**: Metals, incl. BLM, pesticides, pharmaceuticals, frameworks for regulatory ecotoxicology incl. guideline development, environmental impact of farming incl. hazardous substances in sewage sludge and manure (biosolids) Bester, Kai (Ph.D. University of Hamburg, Germany), Professor, Dept. Env. Sci. General expertise: Environmental Chemistry with focus on organic micropollutants, process studies, special focus on organic micropollutants in urban water systems and advanced & biological removal systems. Enantioselective processes in degradation and toxicity. Chemical risk assessment expertise: Transformation of chemicals in urban water systems. Fate of compounds. Comparison of source strength, dilution, degradation, and occurrence in the environment. Means to determine compounds at trace levels. Regulation of chemicals in urban water context and Biocidal Product Directive Carvalho, Pedro (Ph.D. University of Porto, Portugal), Researcher, Dept. Env. Sci. General expertise: fate or organic pollutants in the environment, development of water treatment technology, water reuse Chemical risk assessment expertise: Environmental Chemodynamics, namely chemical categories and processes, sampling, and analytical chemistry, and (bio)geochemistry. Biodegradation of pesticides. Phytotoxicity.

Weber, Lynn (B.Sc. Pharmacy; Ph.D. University of British Columbia, British Columbia,

& drug toxicology, alterations in physiological homeostasis, animal models.

General expertise: Effects of environmental factors such as contaminants and nutrition on cardiovascular and metabolic health of humans, other mammalian species and fish. **Chemical risk assessment expertise**: Mechanisms of contaminant action, pharmacology

Canada), Professor and Assoc. Dean Research WCVM

Sørensen, Peter Borg (Ph.D. Aalborg University, Denmark), Senior Scientist, Dept. Bioscience General expertise: Methods for assessing chemicals and ecosystem dynamics using applied mathematics and statistics. Development of risk indicators and application of new technology for data collection in fieldwork. Chemical risk assessment expertise: Methods of risk assessment and uncertainty assessment. Risk ranking methods of chemical hazard potentials.
 Fauser, Patrik (Ph.D. Technical University of Denmark (DTU) and Risø National Laboratory, Denmark), senior scientist, Dept. Env. Sci. General expertise: Environmental contaminants. Fate-, emission-, exposure- and risk assessment and modelling of (in)organic contaminants, heavy metals, plastics in air, soil, water. Chemical risk assessment expertise: Sources, emissions, and fate of chemicals in the environment. General ecological and human health risk assessment principles and approaches. Focus on both scientific and advisory activities.
 Pedersen, Anders Branth (PhD Aarhus University, Denmark), Senior Researcher, Dept. Env. Sci. General expertise: Environmental policy analyses; environmental governance; effectiveness of environmental policies and policy instruments; implementation barriers Chemical risk assessment expertise: Analyses of pesticide regulation in Europe; co-supervisor on PhD project on EU REACH regulation (2011-2014)
Vorkamp, Katrin (Ph.D. University of Bayreuth, Germany), Senior Scientist, Dept. Env. Sci. General expertise: Environmental chemistry, analytical chemistry (organics), contaminant fate in the environment, Arctic pollution, chemicals of emerging concern, environmental monitoring, human exposure Chemical risk assessment expertise: Environmental toxicity and risk of contaminants of emerging concern, POP and PBT assessments (Stockholm Convention and REACH framework), exposure assessments, Arctic
 Hansen, Martin (Ph.D. University of Copenhagen), Associate Professor, Senior Researcher, Dept. Env. Sci. General expertise: Environmental endocrine disruptors, endocrine disruption in wildlife and people; molecular toxicology; fate and effects of pollutants. Chemical risk assessment expertise: Interdisciplinary research at the interface of environmental chemistry, biology and analytical chemistry, state-of-the-art exposure characterization for both targeted and non-targeted analysis; metabolome, exposome and proteome characterizations.

Appendix D: Program Course Sequence and Schedule for 2-year program

B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ

21 MONTH PROGRAM

Year 1

Year 2



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	3.0 (TOX 8)	76)	3	a: Appro	aches,	, Models	and To	ols for Ch	aracteriz	zing	the Expose	ome																										
				3.	.0 (то	X 877)		3b: Pract	tical Skill	ls for	Character	ization	of th	e Expos	ome																							
								1.5 (1	OX 878)	1.5	3c: Pra	ctical	Skills fo	or Char	racter	izing ŀ	lazar	ď																			
													3.0	(TOX 8	79)		3d: Ri	isk As	sessme	nt an	d Regu	atory	/ System	s														
																		3.0	о (тох в	80)		4a: 5	Sustaina	ble Ch	emical	Risk Char	acteriz	ation for	Decisi	on Ma	aking							
																						1.5	(TOX 8	1)	1.5	4b:	Chem	ical Risk	Assessi	ment	Projec	t						

FORMULATION	Characteristics
PRINCIPLES	6 week courses
TOOLS/METHODS	sequential delivery
INTEGRATION	4 courses would span two academic terms and would need to create two 1.5 credit courses
	would take 21 months to complete

Appendix E: Letters of Support



Karsten Liber Executive Director and Distinguished Professor School of Environment and Sustainability University of Saskatchewan

Support Letter - Professional Master's in Chemical Risk Assessment

It is my pleasure to declare that the Department of Environmental Sciences of Aarhus University supports the establishment of the Professional Master's Programme in Chemical Risk Assessment at the School of the Environment and Sustainability of University of Saskatchewan.

As per the memorandum of cooperation and understanding between University of Saskatchewan and Aarhus University and we are committed to establishing a program of academic training and collaboration in areas of interest and benefit to both institutions, and specifically in jointly developing and delivering this online professional Master's programme in Chemical Risk Assessment.

This online MSc's programme not only makes use of the excellent know-how in Chemical Risk Assessment that we have in house to provide the best training to the international community of practitioners in the field, but also aligns with our strategy to increase our department involvement in international and continued educational programmes. Moreover, the programme is developed to fill an identified gap in professional education of global reach. This is of significance in terms of the potential for the reputation for our universities, but also from a business case perspective.

The collaboration between our academic staff is long lasting and has strengthened since we started developing the present programme. Having the possibility to know move towards providing and delivering the course is very exciting for our teams.

I hereby confirm that the Department of Environmental Sciences will provide his staff with the conditions to prepare and deliver the programme, as well as support with the administration of the programme.

Kind regards,

adobsen

Professor & Head of Department

Department of Environmental Science Aarhus University Frederiksborgvej 399 DK-4000 Roskilde Denmark E-mail: envs@au.dk

Carsten Suhr Jacobsen

Professor & Head of Department

Date: 4.December 2023

Direct Tel.: +45 87158701 Mobile Tel.: +45 25377667 E-mail: csj@envs.au.dk

Web:www.envs.au.dk

Sender's CVR no.: 31119103

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Pest Management Regulatory Agency

Health

Canada

Agence de réglementation de la lutte antiparasitaire

Santé

Canada

December 21, 2023

Karsten Liber karsten.liber@usask.ca

Dear Karsten:

We are responding to your email dated December 12, 2023 regarding the proposed launch of a new master's program in chemical risk assessment at the University of Saskatchewan in partnership with Aarhus University, Denmark. Thank you for taking the time to share information on this new academic program with us.

Health Canada's Pest Management Regulatory Agency (PMRA) is highly supportive of this initiative and the launch of this program by the University of Saskatchewan. We anticipate this master's level program will better equip students with scientific expertise in health and environmental risk assessment, support all areas of chemical regulation, including in the governmental, agricultural, and industrial sectors, and help further strengthen Canada's position as a leader in the area of regulatory science as it evolves nationally and globally. This is a much-needed set of skills as there are few Canadian universities offering these types of programs.

We look forward to hearing about the results of this proposal.

Sincerely,

Manon Bombardier Assistant Deputy Minister, Transformation

2023-12-21

Frédéric Bissonnette Executive Director, PMRA Signed by: Bissonnette, Frederic





CanNorth

Canada North Environmental Services Limited Partnership A First Nation Environmental Services Company

December 20, 2023

University of Saskatchewan School of Environment and Sustainability

Subject: Letter of Support for the Addition of a Masters of Chemical Risk Assessment Program at the University of Saskatchewan

Dear Dr. Liber,

I am writing on behalf of Canada North Environmental Services (CanNorth) to express our support for the proposed addition of a Masters of Chemical Risk Assessment (MRA) program within the School of Environment and Sustainability at the University of Saskatchewan. Based on our experience we believe that such a program would be extremely useful and address a critical gap in this field.

CanNorth is a 100% Indigenous-owned firm that has been providing a wide range of environmental consulting services to industry, government agencies, First Nations, and other client types for over 35 years. Our office locations include Saskatoon and La Ronge, Saskatchewan and Markham, Ontario. One of our key service areas is in the field of chemical risk assessment, also called environmental risk assessment. We provide risk assessment support for mining operations in Saskatchewan, Canada and internationally. In addition, we complete risk assessments for the redevelopment of contaminated sites, assessment of the safety of country foods for First Nations, development of soil quality standards, and evaluate the impact of air contamination.

The field of risk assessment plays a fundamental role in ensuring the safety and well-being of both human health and the environment. It is used by industry and regulatory agencies, with an increasing inclusion of risk assessment in decision making. As such, there is a growing recognition of the need for highly trained professionals that have the knowledge and skills to conduct comprehensive risk assessments, develop effective risk management strategies, and communicate findings to a range of stakeholders and rights-holders. By offering a dedicated Master's program in Chemical Risk Assessment, the University of Saskatchewan has a unique opportunity to provide opportunity for people to develop skills in this area as well as contribute significantly to the advancement of knowledge in this critical field.

The class progression and proposed phases is logical and follows the standard risk assessment paradigm, allowing students to develop a strong understanding of all aspects of the risk assessment process. Chemical risk assessment is inherently interdisciplinary, requiring knowledge in chemistry, toxicology, environmental science, and regulatory affairs. The University of





CanNorth

Canada North Environmental Services Limited Partnership A First Nation Environmental Services Company

Saskatchewan already has a well-renown Toxicology Centre and a MRA program is a natural extension.

Graduates of the program will be well-positioned for successful careers in various sectors, including regulatory agencies, consulting firms, and industry. I am certain that CanNorth would consider graduates from this program in future hiring opportunities.

In conclusion, the introduction of this program aligns with the evolving demands the field and would contribute to the training of experts equipped with the necessary knowledge and skills. We support this endeavor and believe it will have a positive impact on the University and the broader field of chemical risk assessment.

I would be happy to discuss this matter further and provide any additional information or support that may be required. Please feel free to contact me at stacey.fernandes@cannorth.com.

Sincerely,

Stewards

Stacey Fernandes, M.A.Sc., P.Eng., QP_{RA} Senior Environmental Engineer

Canada North Environmental Services Limited Partnership



211 Wheeler Street, Saskatoon, Saskatchewan, Canada S7P 0A4 Tel: (306) 652-4432 Fax: (306) 652 4431 Toll Free: 1-844-700-4432 Email: info@cannorth.com www.cannorth.com ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 Registered



Program Proposal: Appendices—FINAL revised 15 February 2024



December 21, 2023

To Whom it May Concern,

Re: Support for Master of Chemical Risk Assessment (MRA) Program

As an employer of University of Saskatchewan (USask) graduates, and more generally a Saskatchewan company with a keen interest in qualified professionals for conducting and reviewing risk assessments, we would like to show our support for the USask proposal to develop and offer a Master of Chemical Risk Assessment (MRA) Program.

Orano Canada Inc.

100-833 45th Street West Saskatoon SK S7L 5X2 Tel.: +1 (306) 343-4500

www.oranocanada.com

We understand from our correspondence with Karsten Liber, Ph.D. Executive Director and Distinguished Professor (USask School of Environment and Sustainability) that this program would be beneficial for professionals in the mining industry and environmental consulting, as well as the different levels of government and regulatory agencies.

Risk assessments are a key component in decision making, and further education and training in this important discipline can only lead to a better and more sustainable future. To have this program in Saskatchewan makes good sense, when you consider the types of industries, such as mining, that are currently experiencing rapid changes and growth.

We fully support this proposal and look forward to seeing future MRA professionals having an impact in our industry.

Sincerely,

J. Colin Braithwaite Vice President, Safety & Health, Environment, Regulatory

Page 1 of 1



Azimuth Consulting Group Inc. 218-2902 West Broadway Vancouver, BC Canada V6K 2G8

> Phone: 604-730-1220 Fax: 604-739-8511 www.azimuthgroup.ca

> > Our File #: Admin

January 17, 2024

Dr. Karsten Liber Executive Director and Distinguished Professor School of Environment and Sustainability University of Saskatchewan

Dear Dr. Liber:

RE: Letter of Support for Proposed Master of Chemical Risk Assessment

Thank you for reaching out to <u>Azimuth Consulting Group</u> (Azimuth) for a letter of support for the above proposed Master degree. Azimuth strongly supports this proposal for reasons outlined in this letter.

Our Need for Graduates

EcoCanada monitors the health of the environmental industry in Canada – their Job Posting Analysis interactive dashboard provides a snapshot of online recruitment activity levels and trends for Canadian environmental roles. They track the most recent data, trends and insights by region, occupation, industry and environmental specialization. The most recent summary shows that professional, scientific and technical services (where risk assessment falls) continue to lead other industries with more than 14,620 enviro ads, accounting for 28% of all environmental postings.

Azimuth typically employs one new graduate a year. We typically invest five years to train recent hires in risk assessment. Even for toxicology undergraduate and masters programs, new graduates lack the skills to independently conduct even basic risk assessments. As a result, their work in the first few years is closely supervised and broken into small tasks for training purposes (more so than in other aspects of our professional practice, like environmental monitoring).

We typically need to work with recent hires to deepen the following types of skills and understanding (all of which we believe will be covered by this proposed Master of Chemical Risk Assessment):

Page 1 of 3



- New and emerging contaminants regulated by product evaluation using regulatory processes that vary by jurisdiction
- Ongoing contamination caused by permitted releases with risk-based monitoring programs
- Legacy contamination evaluated by retrospective risk assessments, often to inform remediation and risk management

Graduates from the proposed Master of Chemical Risk Assessment are more likely than most to understand international regulatory regime philosophies, the life cycle of contaminants, and how they are evaluated by risk assessors working in different jurisdictions.

In addition, the design of this proposed Master degree will result in graduates with a deeper understanding of the tools that underpin all of these types of risk assessment. We anticipate that when Azimuth hires these graduates, they will be more productive and develop into project managers for risk assessment sooner.

The Reputation of the Institutions Offering the New Degree

Azimuth already monitors the University of Saskatchewan's graduates and tracks individuals that we think are targeting a career track that aligns with Azimuth's direction. We also have professional contacts at Aarhus University and are aware of their work to the degree we can apply their new developments in our work. University of Saskatchewan and Aarhus are leaders in the field of applied toxicology and this internationally-scoped master degree will put a new type of graduate out to the marketplace.

Information about Azimuth for Context

Azimuth is a niche consultancy that investigates chemicals and their effects on the environment and human health. Our team's collective backgrounds span biology, ecology, toxicology and chemistry, and among our senior staff we have a Contaminated Sites Approved Professionals Society – Risk Approved Professional, two Diplomates of the American Board of Toxicology (DABT), registered Professional Biologists (BC, AB) and a Qualified Person (SK). For a small firm, we have extensive experience in human and ecological risk assessment, risk management, impact assessment, and environmental effects monitoring. Azimuth's staff have been involved in developing various Canadian risk assessment guidance documents (both provincial and federal).

In summary, we strongly support development of this new Master of Chemical Risk Assessment and we hope to be able to employ the resulting graduates in the near future.

Page 2 of 3



Azimuth Consulting Group Inc.

Beth Power, MSc, RPBio, CSAP (Risk)

Senior Scientist

Eric Franz, MSc, (Toxicology Centre Graduate) Senior Scientist

Page 3 of 3

Appendix F: Consultation Form from University Library

Library Requirements for New Programs and Major Revisions

This form is to be completed by the librarian assigned liaison responsibilities for the sponsoring college/department. Contact the <u>appropriate librarian</u> for assistance. Attach the completed form to the program proposal prior to submission to the Academic Programs Committee. Additional comments may also be attached if required.

- 1. Proposal Identification
 - 1.1. Full name of program: Master of Chemical Risk Assessment
 - 1.2. Short form (degree abbreviation): MRA
 - 1.3. Sponsoring college/department: School of Environment and Sustainability
 - 1.4. Degree level: Undergraduate Graduate: X
- 2. Current library collections, services, and spaces to support this program
 - 2.1. Current library collections

Books

Books are of importance to the learning and research in the program of Master of Chemical Risk Assessment, and faculty and students are encouraged to recommend books for selection to the Liaison Librarian. The University Library has annual allocations of funds for acquisition of books for different disciplines. Because of the interdisciplinary nature of chemical risk assessment, books may be purchased from several relevant funds, such as Toxicology fund, Environment and Sustainability Fund, and Chemistry Fund. They can also be purchased from health sciences funds and Agriculture fund. The annual fund allocations for acquisition of books in Toxicology, Environment and Sustainability, and Chemistry are \$5,354.00, \$15,634.00, and \$15,303.00 respectively for 2023/24, and they have remained stable over the past few years.

In recent years, book acquisition efforts have been shifted from printed books to electronic books to ensure equal access for students on campus and in distance education. Individual titles are typically found using the library catalogue. A broad catalogue search by word "(chem* AND risk*) OR toxi*" retrieved 10112 e-books and 6233 printed books. The printed books are mainly located across several branch libraries including Health Sciences Library, Science Library and Murray Library again because of the interdisciplinary nature of this field.

In addition to the funds specifically allocated for books in this field, the University Library offers a broad range of e-book collections in many disciplines from major academic publishers, most of which are funded through a central university library collection fund. The following e-book collections include a substantial number of books in chemical risk assessment: Cambridge Books

Library requirements for new programs and major revisions

EBSCOhost eBook Collection Oxford Academic Proquest eBook Central ScienceDirect SpringerLink: Books Wiley Online Library

In addition to e-books provided by traditional publishers, the University Library also supports open access movement and provides direct access to free peer-reviewed e-book collections such as <u>Directory of Open Access Books (DOAB</u>), and <u>MIT Press Direct to Open Ebooks</u>, which also include a considerable number of e-books on chemical risk assessment.

Journals

The university Library invests heavily in journal subscriptions, most of which are available online, to support the teaching, learning, and research at the University of Saskatchewan. The library subscribes to nearly complete collections of journals from major scholarly publishers, including Springer, Elsevier, Oxford University Press, Cambridge University Press, and selected subscriptions to journals of other publishers. Because of the interdisciplinary nature of chemical risk assessment, it is difficult to quantify the number of journals in this area that the library subscribes to.

The full-text of the subscribed online journal articles are discoverable in a variety of ways to meet needs of library users: through USearch (the library's federated search engine), through the library's catalogue, and through the library's OpenURL linking ("Find it", which is embedded in all the library databases).

In addition, an increasing number of open access (OA) scholarly journals are freely available to the students and researchers of the University. The full-text of many of these OA journal articles can be discovered and accessed through "Find it" linking when searching a database.

To demonstrate the library's coverage of the core journals in the area of chemical risk assessment, data from Journal Citation Reports (JCR) database was analyzed. The library's current journal coverage by relevant JCR subjects is listed below:

Toxicology: 23/25 of the top journals Chemistry, Multidisciplinary: 20/25 of the top journals Chemistry, Medicinal: 21/25 of the top journals Environmental Sciences: 24/25 of the top journals Environmental Studies: 21/25 of the top journals

Electronic Resources and Databases

The students and researchers at the University of Saskatchewan use subscription-based and publicly available subject databases as gateways to full-text e-resources. "Find it" linking, embedded by the University Library in subscription-based e-resources as well as publicly available web resources, emulates seamless access to our licensed full-text journals.

The University Library subscribes to approximately 660 databases. The major databases for sustainability and energy security the following:

Library requirements for new programs and major revisions

SciFinder EMBASE: Excerpta Medica & EMBASE Classic CABI: CAB Abstracts & CAB Abstracts Archive Compendex and Engineering Index Backfile Web of Science Core Collection Scopus

Data Sets and Government Information

Data sets and government information are important information resources for the Master of Chemical Risk Assessment program.

Government publications and statistics information are rapidly evolving with an increasing amount of government documents and statistical datasets being made freely available on the internet. Not everything is open access, however, and the library provides access to many licensed services. For example, Statistics Canada publishes many statistical datasets, including census data and specialized surveys, which are available through the Data Liberation Initiative license to which the University Library subscribes. The Data and GIS Librarian and the Government Information Librarian at the University Library have specialized expertise to help users find specific data sets and government information.

InterLibrary Loan

The Interlibrary Loan (ILL) Service enables library users to request materials not owned by the University Library at no charge to them. The service depends on borrowing and lending agreements between the University Library and other libraries and does not replace on-campus support for programs. The library provides desktop delivery of ILL materials in electronic format when possible, which not only enables users to retrieve the requested materials from their computers but also significantly reduces the request time.

2.2. Current library services

The library offers a suite of services to support the Master of Chemical Risk Assessment program.

Liaison Services

A liaison librarian is assigned to the School of Environment and Sustainability (SENS). The Liaison Librarian for SENS is situated at the Science Library. The role of the Liaison Librarian is to develop the collection, provide research assistance and consultation, teach information research skills, and communicate library events and initiatives to students and faculty in SENS including the proposed program of Master of Chemical Risk Assessment.

Academic Skills Support

Learning Specialists at the University Library provide services and supports to graduate students to improve their academic skills from a variety of perspectives, such as time management, writing skills, and preparing for comprehensive exams. Each term, online or inperson workshops are offered to graduate students. Recordings of these workshops are available for those unable to attend live. Individual appointments are also available to help with students' specific needs.

Research Support Services

Library requirements for new programs and major revisions

The Research Support Services Division of the University Library provides specialized services to support the needs of students and researchers of the University of Saskatchewan. The services relevant to the proposed program include scholarly publishing, research data management, and synthesis reviews.

With its recent integration into the University Library, <u>the Canadian Hub for Applied and Social</u> <u>Research</u> (CHASR) supports researchers in all phases of research, including data collection, data processing, data analysis, and reporting. The service is provided on a cost-recovery basis.

Distance and Distributed Library Services

The library offers free distance and distributed services to all members of the University of Saskatchewan and will mail library materials directly to the library users at any address within Canada other than locations on the main campus in Saskatoon.

2.3. Current library spaces

The University Library has six branches and offers several types of study spaces to meet students' needs: social spaces, individual and small group spaces, and quiet study spaces. With an extensive suite of programs, Library Desktop Computers are available for students to use. To further support the curriculum needs of the University, the library has established 43 bookable spaces, most of which are equipped with screens that are PC and Mac compatible, to allow students for group collaborative work or practice presentations and interviews.

- 3. Required revisions or additions to collections, services, or spaces to support this program
 - 3.1. Required changes for library collections

No significant new resources for library collections are needed. The ongoing acquisition of books in this area will ensure the library's continuing adequate support to the program. The Liaison Librarian will monitor the needs of information resources from the students and faculty if the program is approved and recommend changes to the library collection and services when needed.

3.2. Required changes for library services

Further promotion of library services and online resources, and development of new workshops specifically targeted to the students in this program are needed to ensure they receive adequate training and assistance during their graduate study.

No additional costs are needed.

- 3.3. Required changes for library spaces The library spaces meet the revised program's needs. No required changes are identified.
- 4. Summary assessment of library capacity and requirements to support the new program

The University Library is dedicated to supporting the teaching, learning and research needs of the academic units at the University including the School of Environment and Sustainability. The library's collection of information resources, its provision of access services to information available elsewhere, information research consultations, academic skills training, and its program of library instructions are offered in direct support of the graduate programs at SENS.

Library requirements for new programs and major revisions

The information resources provided by the library are of sufficient comprehensiveness and research depth to support the proposed program of Master of Chemical Risk Assessment. In addition to a well-established printed collections in the field, the library subscribes to/purchased all major electronic resources in this field including databases, e-journals, and e-book collections. The library also provides extensive access to government information and data sets. These electronic resources can be accessed 24x7 both on campus and remotely using the library's authentication system. The Toxicology Research Guide (https://libguides.usask.ca/Toxicology) and Environment and Sustainability Research Guide (https://libguides.usask.ca/SENS) provide access points for the information resources in this field.

Following the liaison librarian model used at the University of Saskatchewan Library, the SENS liaison librarian acts as the link between SENS and the University Library's collections and services. The liaison librarian's role is to continually develop the collection, provide research assistance and teach research skills to faculty and students, and communicate library events and initiatives with SENS. In particular, if the Master of Chemical Risk Assessment is approved, the Liaison Librarian will monitor the information needs of the students and faculty of this program and make recommendations for changes in library collection and services when required.

The library also provides services to enhance graduate students' academic skills and assist them in developing their research skills. The students in the new program will be encouraged to use these library services for their academic success.

Date: September 15, 2023 Liaison Librarian: Li Zhang Dean, University Library: Melissa Just Faculty member for the sponsoring college/dept:



New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: September 2024

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 870
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): Introduction to Chemical Risk Assessment and Problem Formulation Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: **T1**
- 2.7 Prerequisite: Students need a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), or they must have equivalent scientific and technical experience from work or other educational and training programs.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): This course introduces the concept of chemical risk assessment and provides an overview of current frameworks considered by regulatory authorities. Students will develop a common vocabulary and basic understanding of risk assessment and its use in decision making. The initial phase of a risk assessment, the Problem Formulation phase, is emphasized.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem

formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

This course will introduce the concept of chemical risk assessment and provide an overview of current frameworks considered by national and international regulators. It will also introduce students to the interdisciplinary and global nature of the program and equip all students with a common vocabulary and basic understanding of risk assessment. Specifically, the course will discuss the role of risk assessment in support of decision making and risk management from ecological and chemical assessment and management perspectives. The course will subsequently focus on the initial phase of a risk assessment, the Problem Formulation phase. This phase involves defining the issue or problem and its components, the process and protection goals, as well as performing a weight-of-evidence analysis with relevant stakeholders. The course will include historical case studies and lessons where the assessment failed to accurately address the problem and also examples of successes and breakthroughs. By the completion of this course, students will be expected to:

- Explore and understand the concept of chemical risk from a scientific and societal perspective.
- Have a common understanding of language and terms used in chemical and ecological risk assessment.
- Have a fundamental appreciation of the concept of chemical risk assessment within a sustainability context.
- Understand that risk assessment facilitates decision making via risk communication and risk management, and that these components thus need to be aligned to foster informed and sustainable decisions.
- Appreciate the importance of problem formulation for different types of risk assessments, including site-specific risk assessments and other retrospective assessments, as well as the expectations in prospective risk assessments such as pesticide registration and approval programs such as REACH and other regulatory programs (e.g., TSCA in the US; DSL in Canada, CSS in the EU).
- Via historical lessons, learn from previous risk assessment projects, what worked well and what did not, what surprises and challenges were encountered, and what mistakes were made.
- Be able to reflect on specific cases the students may be concerned about, interested in, or working on and propose improvements to the Problem Formulation phase.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? no If so, were these departments consulted? (Include correspondence) n/a Were any other departments asked to review or comment on the proposal? no

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the MRA.
 - 6.2 Courses for which this course will be a prerequisite? **TOX 873, TOX 879, TOX 880**
 - 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new Master of Chemical Risk Assessment (MRA).

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Module or Topic	Readings or Activity	Evaluation
1	Risk assessment	Recorded lectures:	
-	introduction -	• What is "risk"?	
	Risk	• What is risk analysis and what is it used for?	
		 Risk assessment paradigms 	
		• What is Problem Formulation and why is it important?	
	Risk assessment	Recorded lectures:	
	introduction -	 Toxicology - what is it and what is measured? 	
	Hazard	Exposure and Hazard Characterization	
		• Exposure - characterizing chemicals in the environment or	
		in the body	
		 Hazard - characterizing biological effects of chemicals 	
		Synchronous: Q&A, Group discussion	
	Risk assessment	Recorded lectures:	
	introduction -	 Hazard vs risk - what is the difference and why is it 	
	Hazard vs risk	important?	
		 What is regulated on (North American vs. European 	
		perspectives)	Quiz 1
		Synchronous: Check-in and group discussion; Quiz 1	
2	Risk assessment	Recorded lectures:	
	introduction -	• What is Risk Characterization and how is it done?	
	Risk	Deterministic vs probabilistic methods	Week 3
	Characterization	How do you calculate/model risk?	assignment
		Synchronous: Guest seminar and discussion	provided
	Risk assessment	Recorded lectures:	
	introduction -	Risk management options	
	Risk	Link to Problem Formulation	
	Management	Political and financial considerations	0.1.0
•	Diale	Synchronous: Group discussion and quiz 2	Quiz 2
3	RISK assessment	Recorded lectures:	
	Fremelec	examples of historical risk assessments synchronous: Check-in	
	Examples Bick accossment	Student Presentations: Dre recorded and posted discussions of	
	introduction	bictorical rick assossments (small group assignments)	Student
	Examples	Suppresentations	procentations
Λ	Broblem	Percented lectures:	presentations
*	Formulation 1	The first and critical step of risk assessment	
		 Stakeholders and their roles 	
		 Participatory methods: who and how we engage 	
		Risk communication	
		Guest presenter (TBA)	
		Synchronous: Discussion with guest presenter	

	Problem	Recorded lectures:	Week 6
	Formulation 2	 Defining boundaries of a risk assessment 	assignment
		 Identification of hazards and receptors of concern 	provided
		 Assessment endpoints and effect measures 	
		Synchronous: Class discussion and quiz 3	Quiz 3
5	Problem	Recorded lectures:	
	Formulation 3	Conceptual site models	
		 Development of a working hypothesis and definition of 	
		testable risk hypotheses	
		Synchronous: Check-in and general discussion	
	Problem	Recorded lectures:	
	Formulation 4	Lines of evidence	
		Weight of evidence evaluation	Overall class
		Uncertainty analysis	participation
		• Guest presenter (TBA)	
		Synchronous: Discussion with guest presenter	
6	Student	Recorded lecture: Pre-recorded student presentations (group 1)	Student
	presentations:	Synchronous: Q&A on student presentations and group	presentations
	Analysis of case	discussion	
	studies		
	Student	Recorded lecture: Pre-recorded student presentations (group 2)	Student
	presentations:	Synchronous: Q&A on student presentations and group	presentations
	Analysis of case	discussion	
	studies		

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.

10-50
50-90
90-130
130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded? N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value				
Quiz 1–3 (3 x 10%)	30%				
Student presentation 1 and Q&A	20%				
Class participation	10%				
Student presentation 2:					
- Peer assessment	10%				
- Instructor assessment	30%				
Total	100%				

9.2 Is the course exempt from the final examination? yes

10. Required text

Include a bibliography for the course.

https://www.canada.ca/content/dam/eccc/migration/fcs-scf/B15E990A-C0A8-4780-9124-07650F3A68EA/ERA-20Guidance-2030-20March-202012_FINAL_En.pdf

https://www2.gov.bc.ca/gov/content/environment/air-land-water/site-remediation/remediation-planning/remediation-plan-aip/guide-for-risk-assessment

https://echa.europa.eu/da/regulations/reach/understanding-reach

https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act

https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/substances-list/domestic.html

https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/substances-list/toxic.html

11. Resources

- 11.1 Proposed instructor: Karsten Liber (USask), Hans Sanderson (Aarhus), Peter Borgen Sorensen (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNARFine ArtsHUMHumanitiesSCIEScience
- SOCS Social Science

ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course none
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course none
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 870.3: Introduction to Chemical Risk Assessment and Problem Formulation SYLLABUS

School of Environment and Sustainability

Program Proposal: Appendices—FINAL revised 15 February 2024

[Fall 2024]

<u>Course Instructors:</u> USask: Karsten Liber (lead), Markus Hecker (guest lectures) (SENS & TOX) Aarhus U: Hans Sanderson, Peter Borgen Sorensen (Department of Environmental Science)

Email: Addresses karsten.liber@usask,ca; hasa@envs.au.dk

Course times: Sept – Oct; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites:</u> Students need a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), or they must have equivalent scientific and technical experience from work or other educational and training programs.

Course Description

This course introduces the concept of chemical risk assessment and provides an overview of current frameworks considered by regulatory authorities. Students will develop a common vocabulary and basic understanding of risk assessment and its use in decision making. The initial phase of a risk assessment, the Problem Formulation phase, is emphasized.

Learning Outcomes

This course will introduce the concept of chemical risk assessment and provide an overview of current frameworks considered by national and international regulators. It will also introduce students to the interdisciplinary and global nature of the program and equip all students with a common vocabulary and basic understanding of risk assessment. Specifically, the course will discuss the role of risk assessment in support of decision making and risk management from ecological and chemical assessment and management perspectives. The course will subsequently focus on the initial phase of a risk assessment, the Problem Formulation phase. This phase involves defining the issue or problem and its components, the process and protection goals, as well as performing a weight-of-evidence analysis with relevant stakeholders. The course will include historical case studies and lessons where the assessment failed to accurately address the problem and also examples of successes and breakthroughs. By the completion of this course, students will be expected to:

- Explore and understand the concept of chemical risk from a scientific and societal perspective.
- Have a common understanding of language and terms used in chemical and ecological risk assessment.
- Have a fundamental appreciation of the concept of chemical risk assessment within a sustainability context.
- Understand that risk assessment facilitates decision making via risk communication and risk management, and that these components thus need to be aligned to foster informed and sustainable decisions.
- Appreciate the importance of problem formulation for different types of risk assessments, including sitespecific risk assessments and other retrospective assessments, as well as the expectations in prospective risk assessments such as pesticide registration and approval programs such as REACH and other regulatory programs (e.g., TSCA in the US; DSL in Canada, CSS in the EU).

- Via historical lessons, learn from previous risk assessment projects, what worked well and what did not, what surprises and challenges were encountered, and what mistakes were made.
- Be able to reflect on specific cases the students may be concerned about, interested in, or working on and propose improvements to the Problem Formulation phase.

Detailed Course and Subject Description

Class Overview:

This class is one of two 3-cu courses that comprise Module 1 of the MRA program. The course is delivered over a 6-week period with approx. 36 contact hours (i.e., 6 hours per week). Each week includes 3-4 hours of asynchronous learning time (viewing pre-recorded lectures, reading papers/documents provided as part of the class materials) and two synchronous session of 1-3 hours in duration depending on the week (for questions, discussions, guest presentations, student presentations, quizzes, etc.). The workload outside of the abovementioned asynchronous learning and synchronous class sessions (e.g., further readings, completing assignments, preparing presentations) is estimated at approx. 6–8 additional hours per week (variably distributed throughout the six weeks).

The class will be taught entirely online in a blended format using classic (e.g., pre-recorded lectures by instructors and either synchronous or asynchronous seminars by guest speakers) and synchronous interactive (group discussions; student projects) elements. The main course/lecture material will be mainly delivered as pre-recorded, asynchronous lectures that students can watch at their own pace, supplemented with synchronous seminar-style discussions *via* Zoom. Participation in the synchronous elements is strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join live through the Learning Management System (Canvas).

In site-specific risk assessments, it is critical that all relevant stakeholders are at the table at the Problem Formulation stage, the first and critical step of a risk assessment (RA). This is where all involved parties have to come to agreement on the scope of the RA, where the "boundaries" of the assessment are, and what assessment and measurement endpoints will be included (among other things). If all parties do not buy into the study and the approach from the beginning, they will not accept the outcome. In such assessments, stakeholders may include industry, government/regulator, consultant, community, including Indigenous community members, and possibly academics. Students will be assigned into different groups representing the different stakeholders and tasked with arguing the case of the RA from their stakeholder's perspective, including one group representing Indigenous concerns and wishes. At the end of the exercise, the groups must come to consensus on how the RA should be performed. Indigenous views and multiple ways of knowing will be included here. The professors will help guide the students representing Indigenous communities. This group exercise carries over into the second last course of the program (TOX 880) where they will complete the exercise by having to consider the outcomes of RAs and how results are communicated beyond their groups.

Learner success will be evaluated using a set of three graded quizzes, one assignment, two sets of student presentations, and class participation. Specific examples and case studies will be covered in a flipped classroom format (i.e., each student will investigate a specific issue/case study and prepare a recorded presentation to their peers that will be uploaded to an online repository, and a subsequent Q&A period that can be either completed synchronously *via* Zoom or asynchronously using a discussion board). Both the presentations and class participation in the Q&A period will be graded.

Class Schedule:

Week	Module or Topic	Readings or Activity	Evaluation
1	Risk assessment	Recorded lectures:	
	introduction - Risk	• What is "risk"?	
		 What is risk analysis and what is it used for? 	
		Risk assessment paradigms	
		• What is Problem Formulation and why is it important?	
	Risk assessment	Recorded lectures:	
	introduction -	 Toxicology - what is it and what is measured? 	
	Hazard	Exposure and Hazard Characterization	
		• Exposure - characterizing chemicals in the environment or	
		in the body	
		Hazard - characterizing biological effects of chemicals	
		Synchronous: Q&A, Group discussion	
	Risk assessment	Recorded lectures:	
	introduction -	 Hazard vs risk - what is the difference and why is it 	
	Hazard vs risk	important?	
		 What is regulated on (North American vs. European 	
		perspectives)	
		Synchronous: Check-in and group discussion; Quiz 1	Quiz 1
2	Risk assessment	Recorded lectures:	
	introduction - Risk	 What is Risk Characterization and how is it done? 	
	Characterization	 Deterministic vs probabilistic methods 	Week 3
		 How do you calculate/model risk? 	assignment
		Synchronous: Guest seminar and discussion	provided
	Risk assessment	Recorded lectures:	
	introduction - Risk	Risk management options	
	Management	Link to Problem Formulation	
		Political and financial considerations	
-		Synchronous: Group discussion and quiz 2	Quiz 2
3	Risk assessment	Recorded lectures:	
	introduction -	Examples of historical risk assessments Synchronous: Check-in	
	Examples	and group discussion	
	Risk assessment	Student Presentations: Pre-recorded and posted discussions of	
	introduction -	historical risk assessments (small group assignments)	Student
	Examples	Synchronous: Group discussion of student presentations	presentations
4	Problem	Recorded lectures:	
	Formulation 1	 The first and critical step of risk assessment 	
		 Stakeholders and their roles 	
		 Participatory methods: who and how we engage 	
		Risk communication	
		• Guest presenter (TBA)	
		Synchronous: Discussion with guest presenter	

	Problem	Recorded lectures:	Week 6
	Formulation 2	Defining houndaries of a rick assessment	accignment
	FOITINIALION Z		assignment
		 Identification of hazards and receptors of concern 	provided
		 Assessment endpoints and effect measures 	
		Synchronous: Class discussion and quiz 3	Quiz 3
5	Problem	Recorded lectures:	
	Formulation 3	Conceptual site models	
		• Development of a working hypothesis and definition of	
		testable risk hypotheses	
		Synchronous: Check-in and general discussion	
	Problem	Recorded lectures:	
	Formulation 4	Lines of evidence	Overall class
		Weight of evidence evaluation	participation
		Uncertainty analysis	
		• Guest presenter (TBA)	
		Synchronous: Discussion with guest presenter	
6	Student	Recorded lecture: Pre-recorded student presentations (group 1)	Student
	presentations:	Synchronous: Q&A on student presentations and group	presentations
	Analysis of case	discussion	
	studies		
	Student	Recorded lecture: Pre-recorded student presentations (group 2)	Student
	presentations:	Synchronous: Q&A on student presentations and group	presentations
	Analysis of case	discussion	
	studies		
	Judics		

Virtual office hours: Available upon request.

Detailed Assessment of Students and Required Activities

There will be three quizzes, one each at the end of weeks 1, 2 and 4. The quizzes will cover material presented and discussed during that week(s). There will also be two sets of presentations. In the first (at the end of week 3), students work in small groups of 3-4 people and prepare a single presentation per group where they describe, discuss, and assess a historical risk assessment with a focus on assessing strengths and weaknesses. The second set of presentations will take place in week six. Here, students individually evaluate a published retrospective risk assessment and examine the challenges and perhaps omissions with the Problem Formulation phase of a complex contaminated industrial site risk assessment. Presentations are assessed by both fellow students and lead instructors. Class participation is also assessed and includes both synchronous sessions and discussion boards.

Grading Scheme:

Assessment	Value
Quiz 1–3 (3 x 10%)	30%
Student presentation 1 and Q&A	20%
Class participation	10%
Student presentation 2:	
 Peer assessment 	10%
 Instructor assessment 	30%
Total	100%

Resources:

https://www.canada.ca/content/dam/eccc/migration/fcs-scf/B15E990A-C0A8-4780-9124-07650F3A68EA/ERA-20Guidance-2030-20March-202012 FINAL En.pdf

https://www2.gov.bc.ca/gov/content/environment/air-land-water/site-remediation/remediationplanning/remediation-plan-aip/guide-for-risk-assessment

https://echa.europa.eu/da/regulations/reach/understanding-reach

https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act

https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-actregistry/substances-list/domestic.html

https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-actregistry/substances-list/toxic.html

[standard back matter material will be added when syllabus is formalized]



New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: September 2024

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 871
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): Historical Lessons in Chemical Risk Assessment Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: **T1**
- 2.7 Prerequisite: Students need a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), or they must have equivalent scientific and technical experience from work or other educational and training programs. Ideally, TOX 870.3 would be taken first.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): This course presents and discusses classic historical cases or topics in toxicology from a risk perspective. It focuses on lessons learned and how that has helped improve current chemical risk assessment principles and approaches. It also covers key regulatory systems and discusses similarities and differences in approaches. The importance of proper Problem Formulation is emphasized.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

This course will further introduce the concept of risk assessment from the perspective of understanding and discussing classic historical case studies in toxicology. It will focus on what was learned from those classic cases and how that has improved current chemical risk assessment policies and approaches. Lessons where the assessment failed to accurately address the problem and also examples of successes and breakthroughs will be emphasized. It will also provide an overview of current frameworks used in North America and Europe. Specifically, the course will discuss the role of risk assessment in support of decision making and risk management from an ecological and chemical assessment and management perspective. The course will subsequently focus on the initial phase of a risk assessment, the Problem Formulation phase. This phase involves defining the issue or problem and its components, the process, protection aims, as well as performing a weight-of-evidence analysis with relevant stakeholders. By the completion of this course, students will be expected to:

- Explore and understand the concept of chemical risk from a scientific and societal perspective.
- Learn from historical case studies (what were the challenges in those situations and how could things have been done differently).
- Be able to evaluate a historical case study and identify strengths and weaknesses.
- Appreciate the importance of problem formulation for different types of risk assessments, including site-specific, retrospective risk assessments and prospective risk assessments, such as pesticide registration.
- Understand key regulatory and approval programs used in Europe and North America.
- Learn to work in small groups to successfully develop the Problem Formulation for a risk assessment, identify key data and information sources, and defend their assessment against an opposition group who counters the project.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? **no** If so, were these departments consulted? (Include correspondence) **n/a** Were any other departments asked to review or comment on the proposal? **no**

6. Other courses or program affected (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
- 6.2 Courses for which this course will be a prerequisite? **TOX 873, TOX 879**
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Module or Topic	Readings or Activity	Evaluation
			Duc Duc
1	Historical	- Recorded lecture: Classic cases (e.g., Minamata)	
	lesson 1	Synchronous: Group discussion	
	Historical	- Recorded lecture: Endocrine Disrupting Chemicals	
	lesson 2	Synchronous: Group discussion and Q&A	Quiz 1
2	Historical	- Recorded lecture: DDT & other organochlorine pesticides	
	lesson 3	- Video: Silent Spring	

		- Synchronous: Check-in and discussion	
	Historical	- Recorded lecture: Contaminated sites (SuperFund sites)	
	lesson 4	- Guest speaker: US Contaminated Sites program (TBA)	
		Synchronous: Discussion with guest speaker	Quiz 2
3	Historical	- Recorded lecture: Personal care and other consumer products -	
	lesson 5	Technology history (wastewater)	
		- Synchronous: Check-in and discussion	
	Historical	- Recorded lecture: Lead exposure and human health (Guest	
	lesson 6	presenter)	
		- Synchronous: Group discussion and Q&A with guest instructor	Quiz 3
4	Student	Student presentations: What can we learn from a specific case	Class
	presentations	study (chemical or site specific)?	participation
	(small groups)		
	Regulatory	- Recorded lecture: Regulatory programs – REACH, Domestic	
	systems	Substances List, etc.	
		- Recorded lecture: Approval processes and policy development	
		Synchronous: Check-in and discussion	
5	Problem	- Recorded lecture: Example of good problem formulation and	
	Formulation	weight-of-evidence approach	
		- Synchronous: Check-in and group discussion	
	Reflective	- Recorded lecture: Introduction to case study methodology and	
	current case	data collection (template of case study)	
	studies	- Recorded lecture: Global database hazard and risk overview	
		(e.g., OECD e-chem portal). How do you obtain data?	Class
		- Synchronous: Class discussion (data sources)	participation
6	Student	Good and bad historical cases; lessons learned (focus on problem	Student
	presentations	formulation and data selection)	presentations
	(Group 1)		
	Student	Good and bad historical cases; lessons learned (focus on problem	Student
	presentations	formulation and data selection)	Presentations
	(Group 2)		

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.

10-50
50-90
90-130
130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded? N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Quiz 1–3 (3 x 10%)	30%
Peer Presentation and Q&A 1	20%
Class participation	10%
Group Presentation and Q&A 2	40%
Total	100%

9.2 Is the course exempt from the final examination? yes

10. Required text

Include a bibliography for the course.

Crit Rev Toxicol 1995; 25(1):1-24. doi: 10.3109/10408449509089885. M. Harada. Minamata disease: methylmercury poisoning in Japan caused by environmental pollution.

Interdiscip Toxicol. 2015 Jun; 8(2): 55–64. <u>10.1515/intox-2015-0009</u>. <u>Ab Latif Wani</u>, <u>Anjum Ara</u>, and <u>Jawed Ahmad Usmani</u>. Lead toxicity: a review.

https://www.epa.gov/endocrine-disruption/overview-endocrine-disruption

https://www.epa.gov/ingredients-used-pesticide-products/ddt-brief-history-and-status

11. Resources

- 11.1 Proposed instructor: Karsten Liber (USask), Hans Sanderson (Aarhus), Anders Branth Pedersen (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.
- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNARFine ArtsHUMHumanitiesSCIEScience
- SOCS Social Science

ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course none
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course none
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 871.3: Historical Lessons in Chemical Risk Assessment SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Fall 2024]

Program Proposal: Appendices—FINAL revised 15 February 2024

<u>Course Instructors:</u> USask: Karsten Liber (lead), Paul Jones (guest lectures) (SENS & TOX) Aarhus U: Hans Sanderson, Anders Branth Pedersen (Department of Environmental Science)

Email addresses: karsten.liber@usask,ca; hasa@envs.au.dk

Course times:	Oct – Nov; days and times TBD
Course notes:	See course website Canvas Link

<u>Prerequisites:</u> Students need a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), or they must have equivalent scientific and technical experience from work or other educational and training programs. Ideally, TOX 870.3 would be taken first.

Course Description

This course presents and discusses classic historical cases or topics in toxicology from a risk perspective. It focuses on lessons learned and how that has helped improve current chemical risk assessment principles and approaches. It also covers key regulatory systems and discusses similarities and differences in approaches. The importance of proper Problem Formulation is emphasized.

Learning Outcomes

This course will further introduce the concept of risk assessment from the perspective of understanding and discussing classic historical case studies in toxicology. It will focus on what was learned from those classic cases and how that has improved current chemical risk assessment policies and approaches. Lessons where the assessment failed to accurately address the problem and also examples of successes and breakthroughs will be emphasized. It will also provide an overview of current frameworks used in North America and Europe. Specifically, the course will discuss the role of risk assessment in support of decision making and risk management from an ecological and chemical assessment, the Problem Formulation phase. This phase involves defining the issue or problem and its components, the process, protection aims, as well as performing a weight-of-evidence analysis with relevant stakeholders. By the completion of this course, students will be expected to:

- Explore and understand the concept of chemical risk from a scientific and societal perspective.
- Learn from historical case studies (what were the challenges in those situations and how could things have been done differently).
- Be able to evaluate a historical case study and identify strengths and weaknesses.
- Appreciate the importance of problem formulation for different types of risk assessments, including sitespecific, retrospective risk assessments and prospective risk assessments, such as pesticide registration.
- Understand key regulatory and approval programs used in Europe and North America.
- Learn to work in small groups to successfully develop the Problem Formulation for a risk assessment, identify key data and information sources, and defend their assessment against an opposition group who counters the project.

Detailed Course and Subject Description

Class Overview:

This is the second of two 3-cu courses that comprise Module 1 of the MRA program. The course is delivered over a 6-week period with approx. 36 contact hours (i.e., 6 hours per week). Each week includes 3-4 hours of asynchronous learning time (viewing pre-recorded lectures, reading papers/documents provided as part of the class materials) and two synchronous session of 1–3 hours in duration depending on the week (for questions, discussions, guest presentations, student presentations, quizzes, etc.). The workload outside of the abovementioned asynchronous learning and synchronous class sessions (e.g., further readings, completing assignments, preparing presentations) is estimated at approx. 6–8 additional hours per week (variably distributed throughout the six weeks).

The class will be taught entirely online in a blended format using classic (e.g., pre-recorded lectures by instructors and either synchronous or asynchronous seminars by guest speakers) and synchronous interactive (group discussions; student projects) elements. The main course/lecture material will be mainly delivered as pre-recorded, asynchronous lectures that students can watch at their own pace, supplemented with synchronous seminar-style discussions *via* Zoom. Participation in the synchronous elements is strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join live through the Learning Management System (Canvas).

Learner success will be evaluated using a set of three graded quizzes, two sets of student presentations, and class participation. Specific examples and case studies will be covered in a flipped classroom format (i.e., each student will investigate a specific issue/case study and prepare a recorded presentation to their peers that will be uploaded to an online repository, and a subsequent Q&A period that can be either completed synchronously *via* Zoom or asynchronously using a discussion board). Both the presentations and class participation in the Q&A period will be graded.

Week	Module or Topic	Readings or Activity	Evaluation Due Date
1	Historical	- Recorded lecture: Classic cases (e.g., Minamata)	
	lesson 1	Synchronous: Group discussion	
	Historical	- Recorded lecture: Endocrine Disrupting Chemicals	
	lesson 2	Synchronous: Group discussion and Q&A	Quiz 1
2	Historical	- Recorded lecture: DDT & other organochlorine pesticides	
	lesson 3	- Video: Silent Spring	
		- Synchronous: Check-in and discussion	
	Historical	- Recorded lecture: Contaminated sites (SuperFund sites)	
	lesson 4	- Guest speaker: US Contaminated Sites program (TBA)	
		Synchronous: Discussion with guest speaker	Quiz 2
3	Historical	- Recorded lecture: Personal care and other consumer products	
	lesson 5	- Technology history (wastewater)	
		- Synchronous: Check-in and discussion	

Class Schedule:

	Historical	- Recorded lecture: Lead exposure and human health (Guest	
	lesson 6	presenter)	
		- Synchronous: Group discussion and Q&A with guest instructor	Quiz 3
4	Student	Student presentations: What can we learn from a specific case	
	presentations	study (chemical or site specific)?	Class
	(small groups)		participation
	Regulatory	- Recorded lecture: Regulatory programs – REACH, Domestic	
	systems	Substances List, etc.	
		- Recorded lecture: Approval processes and policy development	
		Synchronous: Check-in and discussion	
5	Problem	- Recorded lecture: Example of good problem formulation and	
	Formulation	weight-of-evidence approach	
		- Synchronous: Check-in and group discussion	
	Reflective	- Recorded lecture: Introduction to case study methodology and	
	current case	data collection (<i>template</i> of case study)	
	studies	- Recorded lecture: Global database hazard and risk overview	
		(e.g., OECD e-chem portal). How do you obtain data?	Class
		- Synchronous: Class discussion (data sources)	participation
6	Student	Good and bad historical cases; lessons learned (focus on	Student
	presentations	problem formulation and data selection)	presentations
	(Group 1)		
	Student	Good and bad historical cases; lessons learned (focus on	Student
	presentations	problem formulation and data selection)	presentations
	(Group 2)		

Virtual office hours: Available upon request.

Grading Scheme:

Assessment	Value
Quiz 1–3 (3 x 10%)	30%
Peer Presentation and Q&A 1	20%
Class participation	10%
Group Presentation and Q&A 2	40%
Total	100%

Resources:

Crit Rev Toxicol 1995; 25(1):1-24. doi: 10.3109/10408449509089885.

M. Harada. Minamata disease: methylmercury poisoning in Japan caused by environmental pollution.

Interdiscip Toxicol. 2015 Jun; 8(2): 55–64. <u>10.1515/intox-2015-0009</u>.

Ab Latif Wani, Anjum Ara, and Jawed Ahmad Usmani. Lead toxicity: a review.

https://www.epa.gov/endocrine-disruption/overview-endocrine-disruption

https://www.epa.gov/ingredients-used-pesticide-products/ddt-brief-history-and-status

[standard back matter material will be added after the syllabus is formalized]





New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: **Toxicology Centre**
- 1.3 Term from which the course is effective: September 2024

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 872
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): Environmental Exposure Characterization Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: T1/T2
- 2.7 Prerequisite: One course in ecology or environmental biology and one course in general or environmental chemistry, or permission of the instructor.

If there is a prerequisite waiver, who is responsible for signing it? **D** – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): The course will introduce students to the variety of organic and inorganic chemicals that can be of concern from an ecological risk assessment perspective. By looking at the major classes of chemicals, students will be introduced to the concepts of chemical sources and emissions, chemical movement or transport in the environment, and the ultimate degradation of chemicals or their final resting place in environmental reservoirs.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

By the completion of this course, students will be expected to:

- Describe how a variety of chemicals and other materials enter the environment.
- Identify critical physical and chemical characteristics of environmental contaminants and how these drive contaminant behavior in the environment.
- Describe the potential sources that contain selected chemicals and their emissions to environmental compartments.
- List the physical, chemical, and biological processes that determine the movement and fate of chemicals discharged into the environment.
- Describe the major fate processes that eliminate chemicals from the environment.
- Explain the relevance of these processes and characteristics for exposure assessment and risk characterization.
- List and explain the basic principles of the most common analytical techniques.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? **no** If so, were these departments consulted? (Include correspondence) **n/a** Were any other departments asked to review or comment on the proposal? **no**

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
- 6.2 Courses for which this course will be a prerequisite? **TOX 876**
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Module or Topic	Readings or Activity	Evaluation
1	Chemical properties	- Recorded lecture: Basics of chemistry – valence electrons,	
	– general	isotopes, ionization, salts	
		- Synchronous: Seminar	
	Chemical properties	- Recorded lecture: Major ions, metals, redox, sorption,	
	 inorganics 	complexation	
2	Chemical properties	- Recorded lecture: Structures, mass, functional groups,	
	 organics 	ionization, sorption, photochemistry, biological processes,	
		organohalogens, organometallics, PAHs, etc.	
		- Synchronous: Check-in discussion; Quiz 1 (1 hr)	Quiz 1
	Sources and	- Recorded lecture: Natural and geogenic sources of metals	
	emissions – natural	and organics	
	sources	- Synchronous: Seminar	
3	Sources and	- Recorded lecture: Anthropogenic sources of metals and	
	emissions –	organics	

	anthropogenic		
	sources		
	Environmental	- Recorded lecture: Environmental reservoirs and their	
	matrices	characteristics – air, soil, sediment, freshwater, marine	
		systems, groundwater	
		- Synchronous: Check-in discussion Quiz 2 (1 hr)	Quiz 2
4	Environmental	- Recorded lecture: Long-range transport vs. local sources,	
	transport	characteristic sources, gasses, particle sizes, sedimentation,	
		leaching, atmospheric and aquatic processes, partitioning	
		- Synchronous: Seminar	
	Degradation	- Recorded lecture: Biodegradation, photolysis, oxidation,	
		mineralization, bioactivation, persistence, pseudo-	
		persistence	
5	Bioavailability and	- Recorded lecture: Bioavailability, uptake and elimination	
	accumulation	by organisms and humans, biomagnification,	
		bioconcentration, bioaccumulation.	
		- Synchronous: Check-in discussion Quiz 3 (1 hr)	Quiz 3
	Analytical	Asynchronous recorded lecture: How do we measure	
	techniques and	concentrations in the environment? Brief history of the field	
	instruments	and basic principles of most common instruments	
		Synchronous: Seminar	
6	Assumptions,	- Recorded lecture: Environmental chemodynamics in the	
	Models,	risk assessment of chemicals, models, and uncertainties	
	Uncertainties	- Synchronous: Seminar	
	Peer Presentations:	See Evaluation Components for details	Peer
	Examples and case		presentation
	studies		
	FINAL EXAM		

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program.**

10-50
50-90
90-130
130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded?
 N – Numeric/Percentage
 (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Quiz 1	15%
Quiz 2	15%
Quiz 3	15%
Peer presentation and Q&A	25%
Final exam	30%
Total	100%

9.2 Is the course exempt from the final examination? no

10. Required text

Include a bibliography for the course.

Students will be provided with a packet of detailed focused readings on specific chemodynamic parameters.

Jenkins, RO et al (2007). Environmental and Biological Aspects of Organometallic Compounds. *Comprehensive Organometallic Chemistry III* 12, 603-661.

Mackay, D. (2004). FINDING FUGACITY FEASIBLE, FRUITFUL, AND FUN. Environ. Toxicol. Chem. 23:2282-2289.

Pontolillo J. and Eganhouse RP. (2001) The Search for Reliable Aqueous Solubility (Sw) and Octanol-Water Partition Coefficient (K ow) Data for Hydrophobic Organic Compounds: DDT and DDE as a Case Study. U.S. Geological Survey, Water-Resources Investigations Report 01-4201, Reston, Virginia.

Richardson, GM (2001) CRITICAL REVIEW ON NATURAL GLOBAL AND REGIONAL EMISSIONS OF SIX TRACE METALS TO THE ATMOSPHERE.

Scholz et al (2022). The Eco-Exposome Concept: Supporting an Integrated Assessment of Mixtures of Environmental Chemicals. Environ. Toxicol. Chem 41:30-45.

US-EPA (2002). The Foundation for Global Action on Persistent Organic Pollutants: A United States Perspective. Office of Research and Development, Washington, DC 20460, EPA/600/P-01/003F, NCEA-I-1200.

US-EPA EPA (2001) Requirements for Quality Assurance Project Plans. EPA QA/R-5, EPA/240/B-01/003.

Veith, G. D., DeFoe, D. L., & Bergstedt, B. v. (1979). Measuring and estimating the bioconcentration factor of chemicals in fish. In J.FISH.RES.BOARD CANADA (Vol. 36, Issue 9, pp. 1040–1048). http://www.scopus.com/inward/record.url?eid=2-s2.0-0018712770&partnerID=40&md5=8742354ba5e24463437388709aa246a8

Wild CP. (2005) Complementing the Genome with an "Exposome": The Outstanding Challenge of Environmental Exposure Measurement in Molecular Epidemiology. Cancer Epidemiol Biomarkers Prev;14(8).

11. Resources

- 11.1 Proposed instructor: Paul Jones (USask), Pedro Carvalho (Aarhus), Katrin Vorkamp (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

- 2.2 For the College of Arts and Science only: To which program type does this course belong?
 - FNAR Fine Arts
 - HUM Humanities
 - SCIE Science
 - SOCS Social Science
 - ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course none
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course **none**
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

<u>Course Title: TOX 872.3 Environmental Exposure Characterization SYLLABUS</u> <u>School of Environment and Sustainability</u> (and Toxicology Centre) [Winter 2025]

<u>Course Instructors:</u> USask: Paul Jones (SENS & TOX) Aarhus U: Pedro Carvalho and Katrin Vorkamp (Department of Environmental Science)

Email addresses: Paul.jones@usask.ca; pedro.carvalho@envs.au.dk

<u>Course times:</u> Jan – Feb; days and times TBD <u>Course notes:</u> See course website Canvas Link

Course Catalogue Description:

The course will introduce students to the variety of organic and inorganic chemicals that can be of concern from an ecological risk assessment perspective. By looking at the major classes of chemicals, students will be introduced to the concepts of chemical sources and emissions, chemical movement or transport in the environment, and the ultimate degradation of chemicals or their final resting place in environmental reservoirs.

Prerequisite(s):

One course in ecology or environmental biology and one course in general or environmental chemistry, or permission of the instructor.

Learning Outcomes:

By the completion of this course, students will be expected to:

- Describe how a variety of chemicals and other materials enter the environment.
- Identify critical physical and chemical characteristics of environmental contaminants and how these drive contaminant behavior in the environment.
- Describe the potential sources that contain selected chemicals and their emissions to environmental compartments.
- List the physical, chemical, and biological processes that determine the movement and fate of chemicals discharged into the environment.
- Describe the major fate processes that eliminate chemicals from the environment.
- Explain the relevance of these processes and characteristics for exposure assessment and risk characterization.
- List and explain the basic principles of the most common analytical techniques.

Class Overview:

This course will run over 6 weeks, with approx. 36 contact hours (i.e., 6 hours per week) scheduled in two 3-hour sessions. The workload outside of scheduled class time (e.g., for further readings, completing assignments and exams, etc.) is estimated to be approx. 8 hours per week.

The material will be mainly delivered as pre-recorded asynchronous lectures that students can watch at their own pace, as well as synchronous seminar-style discussions *via* Zoom. Participation in these synchronous elements is optional but strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join through the Learning Management System (e.g., Canvas).

Learner success will be evaluated using a set of three graded quizzes. Specific examples and case studies will be covered in a flipped classroom format, i.e., each student will prepare a recorded presentation to their peers that will be uploaded to an online repository, and a subsequent Q&A period that can be either completed synchronously *via* Zoom or asynchronously using a discussion board. Both the presentations and participation in the Q&A period will be graded. The final assessment on the last day of class will consist of an open book exam that will be administered through the Learning Management System (e.g., Canvas).

Week	Module or Topic	Readings or Activity	Evaluation
1	Chemical properties	- Recorded lecture: Basics of chemistry – valence electrons,	
	– general	isotopes, ionization, salts	
		- Synchronous: Seminar	
	Chemical properties	- Recorded lecture: Major ions, metals, redox, sorption,	
	- inorganics	complexation	
2	Chemical properties	- Recorded lecture: Structures, mass, functional groups,	
	 organics 	ionization, sorption, photochemistry, biological processes,	
		organohalogens, organometallics, PAHs, etc.	
		- Synchronous: Check-in discussion; Quiz 1 (1 hr)	
			Quiz 1
	Sources and	- Recorded lecture: Natural and geogenic sources of metals	
	emissions – natural	and organics	
	sources	- Synchronous: Seminar	
3	Sources and	- Recorded lecture: Anthropogenic sources of metals and	
	emissions –	organics	
	anthropogenic		
	sources		
	Environmental	- Recorded lecture: Environmental reservoirs and their	
	matrices	characteristics – air, soil, sediment, freshwater, marine	
		systems, groundwater	
		- Synchronous: Check-in discussion Quiz 2 (1 hr)	Quiz 2
4	Environmental	- Recorded lecture: Long-range transport vs. local sources,	
	transport	characteristic sources, gasses, particle sizes, sedimentation,	
		leaching, atmospheric and aquatic processes, partitioning	
		- Synchronous: Seminar	
	Degradation	- Recorded lecture: Biodegradation, photolysis, oxidation,	
	Dissueilability and	Mineralization, bioactivation, persistence, pseudo-persistence	
5	Bloavallability and	- Recorded lecture: Bioavailability, uptake and elimination by	
	accumulation	biogenumberier	
		Supphronous Chook in discussion Quiz 2 (1 hr)	
		- Synchronous: Check-in discussion Quiz 3 (1 hr)	
	Applytical tooppiques	Asynchronous recorded lasture: How do we massure	
	and instruments	concentrations in the environment? Brief history of the field	
		and basic principles of most common instruments	

Class Schedule:

		Synchronous: Seminar	
6	Assumptions,	- Recorded lecture: Environmental chemodynamics in the risk	
	Models,	assessment of chemicals, models, and uncertainties	
	Uncertainties	- Synchronous: Seminar	
	Peer Presentations:	See Evaluation Components for details	Peer
	Examples and case		presentation
	studies		
	FINAL EXAM		

Virtual office hours: Available upon request.

Grading Scheme:

Assessment	Value
Quiz 1	15%
Quiz 2	15%
Quiz 3	15%
Peer presentation and Q&A	25%
Final exam	30%
Total	100%

Evaluation Components:

Quiz 1: Chemical properties, use classes, sources, and emission pathways

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Week 1.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Quiz 2: Environmental matrices and transport processes

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Weeks 1 and 2. Description:

Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Quiz 3: Degradation and accumulation

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Weeks 2 and 3. Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple drandowns matching, or numerical answer questions. The quiz will be administered through the Learning the second sec

dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Peer Presentations and Q&A: Examples and case studies

Value:25% of final gradeDue Date:See Course Schedule

Program Proposal: Appendices—FINAL revised 15 February 2024

Type: 5-minute peer presentations of examples and/or case studies, as well as participation in Q&A Description: Students will prepare individual recorded 5-minute presentations that will be shared with their classmates through an online repository, and which will outline specific examples and/or case studies on a chemical or chemical class of their choice that will cover information regarding (1) physicochemical properties, (2) sources and emission scenarios, (3) driving factors of environmental fate, (4) potential for biouptake, and (5) implications for chemical risk assessment (80%). In addition to the peer presentation, students will be required to participate in a subsequent Q&A (either synchronous *via* Zoom, or asynchronous through a discussion board) period during which they will field questions from their peers. Each student is expected to ask at least two questions during the Q&A sessions (20%).

Final exam

Value: 30% of final grade Date: See Course Schedule Length: 3 hours

Type: Open book

Description: This final exam will be a 3-hour open-book exam that will cover all topics and examples covered in class, excluding the peer presentations. The exam will be administered through the Learning Management System (e.g., Canvas) and will consist of 4 long-answer questions worth 25% each that will be geared towards examining the students' synthesis skills with regard to the topics covered in class, rather than testing detailed knowledge.

Resources:

Here are a few more generic resources, chemical class specific materials will be added as needed. You will also be provided with a packet of detailed focused readings on specific chemodynamic parameters.

Jenkins, RO et al (2007). Environmental and Biological Aspects of Organometallic Compounds. *Comprehensive Organometallic Chemistry III* 12, 603-661.

Mackay, D. (2004). FINDING FUGACITY FEASIBLE, FRUITFUL, AND FUN. Environ. Toxicol. Chem. 23:2282-2289.

Pontolillo J. and Eganhouse RP. (2001) The Search for Reliable Aqueous Solubility (Sw) and Octanol-Water Partition Coefficient (K ow) Data for Hydrophobic Organic Compounds: DDT and DDE as a Case Study. U.S. Geological Survey, Water-Resources Investigations Report 01-4201, Reston, Virginia.

Richardson, GM (2001) CRITICAL REVIEW ON NATURAL GLOBAL AND REGIONAL EMISSIONS OF SIX TRACE METALS TO THE ATMOSPHERE.

Scholz et al (2022). The Eco-Exposome Concept: Supporting an Integrated Assessment of Mixtures of Environmental Chemicals. Environ. Toxicol. Chem 41:30-45.

US-EPA (2002). The Foundation for Global Action on Persistent Organic Pollutants: A United States Perspective. Office of Research and Development, Washington, DC 20460, EPA/600/P-01/003F, NCEA-I-1200.

US-EPA EPA (2001) Requirements for Quality Assurance Project Plans. EPA QA/R-5, EPA/240/B-01/003.

Veith, G. D., DeFoe, D. L., & Bergstedt, B. v. (1979). Measuring and estimating the bioconcentration factor of chemicals in fish. In J.FISH.RES.BOARD CANADA (Vol. 36, Issue 9, pp. 1040–1048). http://www.scopus.com/inward/record.url?eid=2-s2.0-0018712770&partnerID=40&md5=8742354ba5e24463437388709aa246a8

Wild CP. (2005) Complementing the Genome with an "Exposome": The Outstanding Challenge of Environmental Exposure Measurement in Molecular Epidemiology. Cancer Epidemiol Biomarkers Prev;14(8).

[standard back matter will be added once the syllabus is formalized]



UNIVERSITY OF SASKATCHEWAN Proposal &

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Winter 2025

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 873
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): Principles of Ecotoxicological Hazard Characterization Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: T2
- 2.7 Prerequisite: Students must have a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), equivalent scientific and technical experience from work or other educational and training programs, or permission from the instructor.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): This course will introduce students to the fundamental principles of toxicology and ecotoxicology, including toxicodynamics, systemic toxicology, molecular-, cellular-, organ-, individual- and population-level effects, mechanisms of toxicity, estimation of toxicity endpoints and benchmarks, direct and indirect effects, bioavailability and bioaccumulation, experimental approaches for generation of ecotoxicity data, categories of pollutants (case studies), assessment of terrestrial and aquatic systems, functional ecosystem endpoints, and energy transfer in ecosystems.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem

formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

By the completion of this course, students will be expected to:

- Achieve comprehensive knowledge of the fundamental processes that govern toxicodynamics and systemic toxicology.
- Gain an understanding of the mechanisms of action of major classes of environmental toxicants.
- Appreciate the importance of organismal (e.g., physiological and genetic) and environmental factors that can influence the bioavailability and toxicity of chemicals.
- Understand the spectrum of toxic effects in organisms on a systems-level basis.
- Understand the basic principles of ecotoxicology.
- Understand the taxonomic applicability of toxic effects across the diversity of organism groups living in terrestrial and aquatic ecosystems.
- Discuss the effects and consequences of anthropogenic contamination in the environment.
- Describe the principles and procedures for traditional laboratory and field methods applied in ecotoxicological hazard assessment.
- Outline different approaches used in environmental monitoring and assessment.
- Be able to understand the concepts of (a) how chemicals interact with organisms, and (b) how that interaction/exposure triggers a response and integrate that knowledge.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? no If so, were these departments consulted? (Include correspondence) n/a Were any other departments asked to review or comment on the proposal? no

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
- 6.2 Courses for which this course will be a prerequisite? **TOX 876**
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Lecture (L) Tutorial (T)	Торіс	Readings or Activity
1	L1	Synchronous:	
		Introduction to the course and meet the instructors; Introduction	
		to hazard characterization in chemical risk assessment	

		Recorded lecture:	
		Overview and recap of toxicokinetics: Determinants of dose	
	L2	Recorded lecture:	
		Absorption and distribution of chemicals in organisms	
	L3	Recorded lecture:	
		Biotransformation and excretion	
	T1	Synchronous and asynchronous:	
		Applied toxicology 1: Using toxicodynamic principles to solve	
		problems; group discussion of week 1 material	
2	L1	Recorded lecture:	
		General principles of toxicology and spectrum of toxic effects,	
		including acute, sub-chronic and chronic toxicity, genetic/non-genetic	
	12	inheritance, etc.	
	L2	Recorded lecture:	
		ecosystems): what happens when this homeostasis is changed?	
	L3	Recorded lecture:	
		Toxicodynamics: Determinants of response	
	T1	Synchronous and asynchronous:	
		Applied toxicology 2: Using toxicodynamic mechanisms to solve	
		problems; group discussion of week 2 material	Quiz 1
3	L1	Recorded lecture:	
		How homeostasis can be altered and the consequence of such alterations: 1)	
		molecular interactions; 2) cellular responses; 3) tissue/systemic effects	
	L2	Recorded lecture:	
		Systemic toxicology 1: Mechanisms of action of key categories of	
	12	environmental contaminants	
	L3	Recorded lecture:	
		systemic toxicology 2: Mechanisms of action of key categories of	
	Т1	Supervision and asuperspanses	
	11	Applied toxicology 3: Using systemic toxicology to solve problems	Ouiz 2
4	11	Recorded lecture:	
-		Basic ecotoxicological concents and principles (direct vs. indirect	
		effects: community structure and function, etc.): Food webs and	
		concentual site models	
		Synchronous: Class discussion. Q&A	
		Assignment: Design your own conceptual site model based on a	
		presented scenario	Assignment 1
	L2	Recorded lecture:	
		Measuring toxicity: Toxicity tests, concentration-response	
		relationships, hypothesis testing; modifying factors of toxicity	
	L3	Recorded lecture:	
		Laboratory test methods: Plants, invertebrates, vertebrates	
		Test type and duration: Acute, chronic, sublethal, behavioural;	
		sensitive life stages	
	T1	Synchronous: Class discussion, Q&A	
		Assignment: Design a chronic toxicity test based on one of	
		several possible scenarios	Assignment 2
5	L1	Recorded lecture:	

		Field sampling and sample handling	
		(how it influences results)	
	L2	Recorded lectures:	
	L3	Recorded lectures:	
		Bioconcentration, bioaccumulations and biomagnification <i>Synchronous:</i> Class discussion, Q&A	Quiz 3
	T1	Synchronous: Guest seminar & discussion: Multiple stressors; Valued Ecosystem Components	
6	L1	Recorded lecture: Overview of ecological stressors: (1) Agriculture (fertilizers and eutrophication, pesticides), (2) Industrial/Mining (metals, industrial chemicals), and (3) Urban (wastewater, runoff)	
	L2	Recorded lecture: Field assessment and experimental design; model ecosystems (microcosms and mesocosms)	
	L3	Recorded lecture: Sediment toxicology; Soil ecotoxicology – what makes it different?	
	T1	Synchronous: Functional ecosystem endpoints; energy and materials transfer in ecosystems (e.g., dynamic energy budget and energy analysis) Assignment: Design a lab and field assessment program for characterizing ecotoxicological hazard	Group assignment and presentation

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.

10-50
50-90
90-130
130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded?
 N – Numeric/Percentage
 (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Quiz 1-3 @ 15%	45%
Individual assignments @ 10%	20%
Group assignment and presentation	25%
Class participation and Q&A	10%
Total	100%

9.2 Is the course exempt from the final examination? yes

10. Required text

Include a bibliography for the course.

Klaassen, C.D. and Watkins, J.B. 2015. *Casarett and Doull's Essentials of Toxicology, 3rd Edition*. McGraw-Hill, New York. 523 pp. Ebook: <u>http://accesspharmacy.mhmedical.com/book.aspx?bookid=1540</u>

Kacew, S. and Lee, B.-M. 2013. *Lu's Basic Toxicology, 6th Ed*. CRC Press, Boca Raton. 404 pp. Ebook: <u>http://www.crcnetbase.com/isbn/9781841849546</u>

Fundamentals of Ecotoxicology: The Science of Pollution, Fifth Edition, 2019

by Michael C. Newman.

Principles of Ecotoxicology, 4th Edition, 2012. By <u>C.H. Walker</u>, <u>R.M. Sibly</u>, <u>S.P. Hopkin</u>, <u>D.B. Peakall</u>

11. Resources

- 11.1 Proposed instructor: Kerstin Bluhm (USask), John Jensen (Aarhus), Martin Hensen (Aarhus), Hans Sanderson (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no
- 12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement ILRQ – Indigenous Learning Requirement QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course TOX 870, TOX 871
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course none
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 873.3: Principles of Ecotoxicological Hazard Characterization SYLLABUS

School of Environment and Sustainability (and Toxicology Centre) [Winter 2025]

Course Instructors:

USask: Kerstin Bluhm (lead), Toxicology Centre Guest lectures by: David Janz, (Toxicology Centre and WCVM), Tim Jardine (SENS & TOX), Markus Hecker, (SENS & TOX)

Email: Kerstin.bluhm@usask.ca

Aarhus U: John Jensen and Martin Hansen, Hans Sanderson, Department of Environmental Science

Email: john.jensen@envs.au.dk; martin.hansen@envs.au.dk

Course times: Jan – Feb; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites:</u> Students must have a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), equivalent scientific and technical experience from work or other educational and training programs, or permission from the instructor.

Course Description

This course will introduce students to the fundamental principles of toxicology and ecotoxicology, including toxicodynamics, systemic toxicology, molecular-, cellular-, organ-, individual- and population-level effects, mechanisms of toxicity, estimation of toxicity endpoints and benchmarks, direct and indirect effects, bioavailability and bioaccumulation, experimental approaches for generation of ecotoxicity data, categories of pollutants (case studies), assessment of terrestrial and aquatic systems, functional ecosystem endpoints, and energy transfer in ecosystems.

Learning Outcomes

By the completion of this course, students will be expected to:

- Achieve comprehensive knowledge of the fundamental processes that govern toxicodynamics and systemic toxicology.
- Gain an understanding of the mechanisms of action of major classes of environmental toxicants.
- Appreciate the importance of organismal (e.g., physiological and genetic) and environmental factors that can influence the bioavailability and toxicity of chemicals.
- Understand the spectrum of toxic effects in organisms on a systems-level basis.
- Understand the basic principles of ecotoxicology.
- Understand the taxonomic applicability of toxic effects across the diversity of organism groups living in terrestrial and aquatic ecosystems.
- Discuss the effects and consequences of anthropogenic contamination in the environment.
- Describe the principles and procedures for traditional laboratory and field methods applied in ecotoxicological hazard assessment.
- Outline different approaches used in environmental monitoring and assessment.
- Be able to understand the concepts of (a) how chemicals interact with organisms, and (b) how that interaction/exposure triggers a response and integrate that knowledge.

Detailed course subject description

Class Overview:

This 3-cu course is delivered over 6 weeks with approx. 36 contact hours (i.e., 6 hours per week) including weekly tutorial sessions. The workload outside of scheduled class time (e.g., for further readings and completing assignments) is estimated at approx. 6 hours per week.

The class will be taught in an open format using classic (e.g., lectures by instructors and guest speakers) and interactive (group discussions; student assignments) elements. The lecture material will be mainly delivered as pre-recorded, asynchronous lectures that students can watch at their own pace, supplemented with synchronous tutorial-style discussions *via* Zoom. Participation in the synchronous elements is optional, but strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join live through the Learning Management System (Canvas).

Learner success will be evaluated using both quizzes and assignments. Specific examples and case studies will be covered. Both the presentations and participation in the Q&A period will be graded. The assessment will be administered through USask's Learning Management System (Canvas).

Week	Lecture (L) Tutorial (T)	Торіс	Readings or Activity
1	L1	Synchronous:	
		to hazard characterization in chemical risk assessment	
		Recorded lecture:	
		Overview and recap of toxicokinetics: Determinants of dose	
	L2	Recorded lecture:	
		Absorption and distribution of chemicals in organisms	
	L3	Recorded lecture:	
		Biotransformation and excretion	
	T1	Synchronous and asynchronous:	
		Applied toxicology 1: Using toxicodynamic principles to solve	
		problems; group discussion of week 1 material	
2	L1	Recorded lecture:	
		General principles of toxicology and spectrum of toxic effects,	
		INCIUCING acute, sub-chronic and chronic toxicity, genetic/non-genetic	
	12	Recorded lecture:	
	22	Biological system homeostasis (as it applies to cells, organs, individuals and	
		ecosystems); what happens when this homeostasis is changed?	
	L3	Recorded lecture:	
		Toxicodynamics: Determinants of response	
	T1	Synchronous and asynchronous:	
		Applied toxicology 2: Using toxicodynamic mechanisms to solve	
		problems; group discussion of week 2 material	Quiz 1
3	L1	Recorded lecture:	
		How homeostasis can be altered and the consequence of such alterations: 1) molecular interactions; 2) cellular responses; 3) tissue/systemic effects	
	L2	Recorded lecture:	
		Systemic toxicology 1: Mechanisms of action of key categories of	
		environmental contaminants	
	L3	Recorded lecture:	

Class Schedule:

		Systemic toxicology 2: Mechanisms of action of key categories of	
		environmental contaminants	
	T1	Synchronous and asynchronous:	
		Applied toxicology 3: Using systemic toxicology to solve problems	Quiz 2
4	L1	Recorded lecture:	
		Basic ecotoxicological concepts and principles (direct vs. indirect	
		effects; community structure and function, etc.); Food webs and	
		conceptual site models	
		Synchronous: Class discussion, Q&A	
		Assignment: Design your own conceptual site model based on a	
			Assignment 1
	L2	Recorded lecture:	
		Measuring toxicity: Toxicity tests, concentration-response	
		relationships, hypothesis testing; modifying factors of toxicity	
	L3	Recorded lecture:	
		Laboratory test methods: Plants, invertebrates, vertebrates	
		rest type and duration: Acute, chronic, subletnai, benavioural;	
	Τ1	Sunchronoue: Class discussion ORA	
		Assignment: Design a chronic toxicity test based on one of several	
		possible scenarios	Assignment 2
5	L1	Recorded lecture:	
		Field sampling and sample handling	
		Synchronous: Class discussion; importance of sampling method	
		(how it influences results)	
	L2	Recorded lectures:	
		Factors influencing bioavailability and toxicity: Abiotic and biotic	
	L3	Recorded lectures:	
		Bioconcentration, bioaccumulations and biomagnification	
		Synchronous: Class discussion, Q&A	Quiz 3
	T1	Synchronous: Guest seminar & discussion:	
		Multiple stressors; Valued Ecosystem Components	
6	L1	Recorded lecture:	
		Overview of ecological stressors: (1) Agriculture (fertilizers and	
		industrial chamicals), and (2) Urban (wastewater, runoff)	
	12	Recorded lecture:	
		Field assessment and experimental design: model ecosystems	
		(microcosms and mesocosms)	
	L3	Recorded lecture:	
		Sediment toxicology; Soil ecotoxicology – what makes it different?	
	T1	Synchronous:	Group
		Functional ecosystem endpoints; energy and materials transfer in	assignment
		ecosystems (e.g., dynamic energy budget and energy analysis)	and
		Assignment: Design a lab and field assessment program for	presentation
		characterizing ecotoxicological hazard	

Detailed Assessment of Students & Required Activities

Students are evaluated through a series of quizzes and assignments (including a presentation), as well as on class participation. For the group assignment, teams prepare project reports on an integrated ecotoxicological hazard assessment (a selection of appropriate topics will be made available) and then the team present their project to the class and answers questions from the other teams and the instructors. One designated opponent group peer-reviews the work of another team and vice versa.

Grading Scheme:

Assessment	Value
Quiz 1–3 @ 15%	45%
Individual assignments @ 10%	20%
Group assignment and presentation	25%
Class participation and Q&A	10%
Total	100%

Resources:

Klaassen, C.D. and Watkins, J.B. 2015. *Casarett and Doull's Essentials of Toxicology, 3rd Edition*. McGraw-Hill, New York. 523 pp. **Ebook:** <u>http://accesspharmacy.mhmedical.com/book.aspx?bookid=1540</u>

Kacew, S. and Lee, B.-M. 2013. *Lu's Basic Toxicology, 6th Ed*. CRC Press, Boca Raton. 404 pp. **Ebook:** <u>http://www.crcnetbase.com/isbn/9781841849546</u>

Fundamentals of Ecotoxicology: The Science of Pollution, Fifth Edition, 2019 by <u>Michael C. Newman</u>.
Principles of Ecotoxicology, 4th Edition, 2012.
By <u>C.H. Walker</u>, <u>R.M. Sibly</u>, <u>S.P. Hopkin</u>, <u>D.B. Peakall</u>

[standard back matter will be added once the syllabus is formalized]



New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Winter 2025

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 874
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): **Principles of Human Exposure Characterization** Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: T2
- 2.7 Prerequisite: Students need a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), or they must have equivalent scientific and technical experience from work or other educational and training programs. Students are strongly encouraged to take TOX 872 and TOX 873 first.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): Human health risk assessment is now playing a major role in the environmental management of chemicals, from both operational and regulatory perspectives. The quantitative assessment of potential health risk is now routine for chemicals in ambient air, indoor air, drinking water, commercial and country foods, soil, indoor dust, and innumerable consumer products (drugs, medical and dental devices and materials, pesticides, cosmetics, natural health products (nutraceuticals), tobacco products, nutritional supplements, building materials, paints, and coatings, etc.). This course will provide the knowledge necessary to conduct, evaluate, and interpret human exposure assessments of chemicals present in both natural and built environments.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps

taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

By the completion of this course, students will be expected to:

- Develop and defend a problem formulation for human exposure assessment for retrospective and prospective risk assessment frameworks.
- Identify, describe, and quantify human exposure routes for critical receptor groups.
- Interpret and apply how estimates of human activity interact with absorption, distribution, metabolism, and excretion pathways in determining total human exposure.
- Develop a nuanced view of how background sources, source allocation, and equity considerations inform human exposure estimates.
- Be able to interpret technical guidance documents linked to occupational and non-occupational exposures.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? no If so, were these departments consulted? (Include correspondence) n/a Were any other departments asked to review or comment on the proposal? no

6. Other courses or program affected (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program.
- 6.2 Courses for which this course will be a prerequisite? none
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Module or Topic	Readings or Activity	Evaluation Due Date
1	Introduction to human health risk assessment	 Recorded lecture: Overview of framework; Measuring or estimating the magnitude, frequency, and duration of human exposure in the environment, or for a new chemical Synchronous: Course expectations, Q&A 	
	Introduction to human exposure assessment	- Recorded lecture: Methods for quantifying exposure: directly, indirectly through consideration of measured concentrations in the environment, models of chemical transport and fate in the environment, and estimates of human intake over time	

1		- Synchronous: Class discussion 08.4	
	Droblom	Percended lectures The age elected word in human	
	Problem Formulation for	- Recorded lecture: The age classes used in human	
	Formulation for	Exposure assessment and their activity levels	
	numan exposure	- Synchronous: Seminar and quiz	
	assessment		Quiz 1
2	Oral exposure	- Recorded lecture: The oral exposure pathway; food,	
		water and soil estimates	
		- Synchronous: Check-in discussion	
	Inhalation exposure	- Recorded lecture: Inhalation exposure pathway and	
		physiology; its link to the oral exposure pathway and	
		household activities.	
		- Guest speaker: Aarhus U Atmospheric Group	
		(atmospheric exposure modeling)	
		- Synchronous: Check-in discussion	
	Dermal exposure	- Recorded lecture: Dermal exposure linkages to activity	
		estimates and genotypic variation	
		- Synchronous: Seminar and quiz	Quiz 2
3	Exposure	- Recorded lecture: Range of exposure and quantification	
	quantification	of exposure	
	Exposures and	- Recorded lecture: Social equity and cultural practices	
	social equity/justice	linked to multiple exposure pathways	
	Bioavailability in	- Recorded lecture: Food and soil bioavailability	
	oral exposures	modifications to exposure	
	oral exposures	- Synchronous: Check-in and class discussion	
4	Population	- Recorded lecture: The importance of population	
· ·	characteristics and	characteristics and sociodemographic factors in	
	sociodemographic	characterizing human exposure	
1	JOCIOACITIOETADITIC		
	factors	- Synchronous: Group discussion and O&A	
	factors	- Synchronous: Group discussion and Q&A	
	factors Life stages and	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure 	
	factors Life stages and vulnerable groups	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A 	
	factors Life stages and vulnerable groups	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A 	
	factors Life stages and vulnerable groups Uncertainty and	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data page and data pupilability. 	
	factors Life stages and vulnerable groups Uncertainty and variability	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability 	
	factors Life stages and vulnerable groups Uncertainty and variability	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar 	
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of the metabolic production of the metabolic production of the metabolic production of the metabolic productions of the metabolic productins of the	
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a 	
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. 	
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne contaminants. 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne contaminants. Synchronous: Check-in discussion Quiz 3 (1 hr) 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne contaminants. Synchronous: Check-in discussion Quiz 3 (1 hr) Virtual office hours available 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures Public participatory	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne contaminants. Synchronous: Check-in discussion Quiz 3 (1 hr) Virtual office hours available Recorded lecture: 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures Public participatory methods	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne contaminants. Synchronous: Check-in discussion Quiz 3 (1 hr) Virtual office hours available Recorded lecture: Synchronous: 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures Public participatory methods Technical guidance	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne contaminants. Synchronous: Check-in discussion Quiz 3 (1 hr) Virtual office hours available Recorded lecture: Synchronous: 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures Public participatory methods Technical guidance documents	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne contaminants. Synchronous: Check-in discussion Quiz 3 (1 hr) Virtual office hours available Recorded lecture: Key documents and their use; the use and abuse of defaults in exposure assessment; 	Quiz 3
5	factors Life stages and vulnerable groups Uncertainty and variability Exposure to mixtures Background exposures Public participatory methods Technical guidance documents	 Synchronous: Group discussion and Q&A Recorded lecture: The importance of life stages and vulnerable groups in characterizing human exposure Synchronous: Group discussion and Q&A Recorded lecture: Uncertainty and variability, including data needs and data availability Synchronous: Seminar Recorded lecture: Role of solvents as facilitators of dermal absorption and the role of sunlight as a potentiator of human exposure. Recorded lecture: How to estimate background exposure to environmental and food borne contaminants. Synchronous: Check-in discussion Quiz 3 (1 hr) Virtual office hours available Recorded lecture: Key documents and their use; the use and abuse of defaults in exposure assessment; legal/regulatory context for the HHRA 	Quiz 3

Peer presentations:	- Recorded student presentations:	Student
Examples and case	See Evaluation Components for details	presentations
studies	- Synchronous: Q&A of presentations; class discussion	
FINAL EXAM		

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.

10-50 50-90 90-130 130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded?

N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Quiz 1	15%
Quiz 2	15%
Quiz 3	15%
Peer presentation and Q&A	25%
Final exam	30%
Total	100%

9.2 Is the course exempt from the final examination? no

10. Required text

Include a bibliography for the course.

- <u>Guidelines for Human Exposure Assessment (2019) (pdf)</u> (3.62 MB, Oct 2019, EPA/100/B-1/001)
- British Columbia Guidance for Prospective Human Health Risk Assessment. https://www2.gov.bc.ca > bchhra-guidance

- Alberta Health, Government of Alberta, August 2019. Guidance on Human Health Risk Assessment for Environmental Impact Assessment in Alberta, Version 2.0 ISBN: 978-1-4601-4359-9. <u>https://open.alberta.ca/publications/9781460143599</u>
- Health Canada. 2021. FEDERAL CONTAMINATED SITE RISK ASSESSMENT IN CANADA: Overview of Health Canada Guidance Documents Related to Human Health Risk Assessment of Federal Contaminated Sites. https://publications.gc.ca/collections/collection_2021/sc-hc/H129-107-2021-eng.pdf
- WHO human health risk assessment toolkit: chemical hazards, second edition (IPCS harmonization project document, no. 8) ISBN 978-92-4-003572-0 (electronic version) ISBN 978-92-4-003573-7 (print version).
 <u>file:///C:/Users/kal282/Downloads/9789240035720-eng.pdf</u>

11. Resources

- 11.1 Proposed instructor: TBD (Sessional Instructor)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)

Program Proposal: Appendices—FINAL revised 15 February 2024

IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course none
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course none
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 874.3: Principles of Human Exposure Characterization SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Winter 2025]

<u>Course Instructors:</u> USask: TBD (sessional lecturer)

Aarhus U: TBD (Department of Environmental Science)

Email: Addresses (for contact until delivery) markus.brinkmann@usask.ca; hasa@envs.au.dk

Course times: Feb – Mar; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites</u>: Students need a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), or they must have equivalent scientific and technical experience from work or other educational and training programs. Students are strongly encouraged to take TOX 872 and TOX 873 first.

Course Catalog Description:

Human health risk assessment is now playing a major role in the environmental management of chemicals, from both operational and regulatory perspectives. The quantitative assessment of potential health risk is now routine for chemicals in ambient air, indoor air, drinking water, commercial and country foods, soil, indoor

dust, and innumerable consumer products (drugs, medical and dental devices and materials, pesticides, cosmetics, natural health products (nutraceuticals), tobacco products, nutritional supplements, building materials, paints, and coatings, etc.). This course will provide the knowledge necessary to conduct, evaluate and interpret human exposure assessments of chemicals present in both natural and built environments.

Learning Outcomes:

By the completion of this course, students will be expected to:

- Develop and defend a problem formulation for human exposure assessment for retrospective and prospective risk assessment frameworks.
- Identify, describe, and quantify human exposure routes for critical receptor groups.
- Interpret and apply how estimates of human activity interact with absorption, distribution, metabolism, and excretion pathways in determining total human exposure.
- Develop a nuanced view of how background sources, source allocation, and equity considerations inform human exposure estimates.
- Be able to interpret technical guidance documents linked to occupational and non-occupational exposures.

Class Overview:

This course will run over 6 weeks, with approx. 36 contact hours (i.e., 6 hours per week) scheduled in 2-hour or 3-hour sessions. The workload outside of scheduled class time (e.g., for further readings, completing assignments and exams) is estimated to be approx. 8 hours per week.

The material will be mainly delivered as pre-recorded asynchronous lectures that students can watch at their own pace, as well as synchronous seminar-style discussions *via* Zoom. Participation in these synchronous elements is optional but strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join through the Learning Management System (e.g., Canvas).

Learner success will be evaluated using a set of three graded quizzes. Specific examples and case studies will be covered in a flipped classroom format (i.e., each student will prepare a recorded presentation to their peers that will be uploaded to an online repository, and a subsequent Q&A period that can be either completed synchronously *via* Zoom or asynchronously using a discussion board). Both the presentations and participation in the Q&A period will be graded. The final assessment on the last day of class will consist of an open book exam that will be administered through the Learning Management System (e.g., Canvas).

Week	Module or Topic	Readings or Activity	Evaluation Due Date	
1	Introduction to human health risk assessment	 Recorded lecture: Overview of framework; Measuring or estimating the magnitude, frequency and duration of human exposure in the environment, or for a new chemical Synchronous: Course expectations, Q&A 		
	Introduction to human exposure assessment	- Recorded lecture: Methods for quantifying exposure: directly, indirectly through consideration of measured concentrations in the environment, models of chemical		

Class Schedule:

		transport and fata in the any ironment and actimates of	
		human intaka avar tima	
		Sumahan Make over time	
-		- Synchronous: Class discussion, Q&A	
	Problem	- Recorded lecture: The age classes used in human	
	Formulation for	exposure assessment and their activity levels	
	human exposure	- Synchronous: Seminar and quiz	
	assessment		Quiz 1
2	Oral exposure	- Recorded lecture: The oral exposure pathway; food,	
		water and soil estimates	
		- Synchronous: Check-in discussion	
	Inhalation exposure	- Recorded lecture: Inhalation exposure pathway and	
		physiology; its link to the oral exposure pathway and	
		household activities.	
		- Guest speaker: Aarhus U Atmospheric Group	
		(atmospheric exposure modeling)	
		- Synchronous: Check-in discussion	
	Dermal exposure	- Recorded lecture: Dermal exposure linkages to activity	
		estimates and genotypic variation	
		- Synchronous: Seminar and quiz	Quiz 2
3	Exposure	- Recorded lecture: Range of exposure and quantification	
	quantification	of exposure	
	Exposures and social	- Recorded lecture: Social equity and cultural practices	
	equity/justice	linked to multiple exposure pathways	
	Bioavailability in oral	- Recorded lecture: Food and soil bioavailability	
	exposures	modifications to exposure.	
		- Synchronous: Check-in and class discussion	
4	Population	- Recorded lecture: The importance of population	
	characteristics and	characteristics and sociodemographic factors in	
	sociodemographic	characterizing human exposure	
	factors	- Synchronous: Group discussion and Q&A	
	Life stages and	- Recorded lecture: The importance of life stages and	
	vulnerable groups	vulnerable groups in characterizing human exposure	
		- Synchronous: Group discussion and Q&A	
	Uncertainty and	- Recorded lecture: Uncertainty and variability, including	
	variability	data needs and data availability	
		- Synchronous: Seminar	
5	Exposure to	- Recorded lecture: Role of solvents as facilitators of	
	mixtures	dermal absorption and the role of sunlight as a	
		potentiator of human exposure.	
	Background	- Recorded lecture: How to estimate background exposure	Quiz 3
	exposures	to environmental and food borne contaminants.	
		- Synchronous: Check-in discussion Ouiz 3 (1 hr)	
		- Virtual office hours available	
	Public participatory	- Recorded lecture: Public participatory methods	
	methods	- Synchronous: Guest lecture and O&A	
6	Technical guidance	- Recorded lecture: Key documents and their use: the use	
	documents	and ahuse of defaults in exposure assessment.	
	Gocuments	legal/regulatory context for the HHRA	
		- Sunchronous: Class discussion	
L			
Peer presentations:	- Recorded student presentations:	Student	
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Examples and case	See Evaluation Components for details	presentations	
studies	- Synchronous: Q&A of presentations; class discussion		
FINAL EXAM			

Virtual office hours available upon request.

Grading Scheme:

Assessment	Value
Quiz 1	15%
Quiz 2	15%
Quiz 3	15%
Peer presentation and Q&A	25%
Final exam	30%
Total	100%

Evaluation Components:

Quiz 1: Oral and inhalation exposure routes.

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Week 1.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Quiz 2: Bioavailability and multi-route exposures in human exposures

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Weeks 1 and 2.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Quiz 3: Exposure to mixtures and background estimation

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Weeks 2 and 3.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Peer Presentations and Q&A: Examples and case studies

Value: 25% of final grade

Due Date: See Course Schedule

Type:5-minute peer presentations of examples and/or case studies, as well as participation in Q&ADescription:Students will prepare individual recorded 5-minute presentations that will be shared with theirclassmates through an online repository, and which will outline specific examples and/or case studies on a

human exposure assessment of their choice that will cover information regarding (1) problem formulation of the human exposure, (2) activity and route exposure estimates for critical receptor, (3) background estimates of exposure, (4) total human exposure estimates, and (5) social equity component of exposure estimates (80%). In addition to the peer presentation, students will be required to participate in a subsequent Q&A (either synchronous *via* Zoom, or asynchronous through a discussion board) period during which they will field questions from their peers. Each student is expected to ask at least two questions during the Q&A sessions (20%).

Final exam

Value:30% of final gradeDate:See Course ScheduleLength: 3 hoursType:Type:Open bookDescriptionThis final supressillation

Description: This final exam will be a 3-hour open-book exam that will cover all topics and examples covered in class, excluding the peer presentations. The exam will be administered through the Learning Management System (e.g., Canvas) and consist of 4 long-answer questions worth 25% each that will be geared towards examining the students' synthesis skills with regard to the topics covered in class, rather than testing detailed knowledge.

Resources:

- <u>Guidelines for Human Exposure Assessment (2019) (pdf)</u> (3.62 MB, Oct 2019, EPA/100/B-1/001)
- British Columbia Guidance for Prospective Human Health Risk Assessment. https://www2.gov.bc.ca > bchhra-guidance
- Alberta Health, Government of Alberta, August 2019. Guidance on Human Health Risk Assessment for Environmental Impact Assessment in Alberta, Version 2.0 ISBN: 978-1-4601-4359-9. <u>https://open.alberta.ca/publications/9781460143599</u>
- Health Canada. 2021. FEDERAL CONTAMINATED SITE RISK ASSESSMENT IN CANADA: Overview of Health Canada Guidance Documents Related to Human Health Risk Assessment of Federal Contaminated Sites. <u>https://publications.gc.ca/collections/collection_2021/sc-hc/H129-107-2021-eng.pdf</u>
- WHO human health risk assessment toolkit: chemical hazards, second edition (IPCS harmonization project document, no. 8) ISBN 978-92-4-003572-0 (electronic version) ISBN 978-92-4-003573-7 (print version). file:///C:/Users/kal282/Downloads/9789240035720-eng.pdf

[standard back matter will be added once the syllabus has been formalized]





New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Winter 2025

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 875
- 2.2 Academic credit units: **3 credit units**
- 2.3 Course Long Title (maximum 100 characters): **Principles of Human Hazard Characterization** Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: T2/T3
- 2.7 Prerequisite: Students need a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), or they must have equivalent scientific and technical experience from work or other educational and training programs. Students are strongly encouraged to take TOX 872 and TOX 873 first.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): Human hazard characterization begins after a toxicological or epidemiological study has identified the most sensitive organ/receptor and the dose at which this organ is adversely affected. Based on that dose, human hazard assessment must then transfer this knowledge to a form that can be used to assess the risk to humans based on a dose. This course will provide the expertise necessary to derive an estimate of a safe human exposure dose based on a key toxicological study.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to

perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

By the completion of this course, students will be expected to:

- Differentiate between the assumptions of a non-threshold and threshold hazard assessment.
- Understand how cumulative exposure models are used to derive safe exposure limits.
- Implement probabilistic methods to estimate a safe exposure limit for critical receptors.
- Gain an appreciation and knowledge of scaling factors used to translate acute human or non-human results to estimates of a safe exposure limit.
- Understand how risk-benefit estimates are incorporated into hazard assessments.
- Become familiar with the differences in occupational versus non-occupational safe exposure limits and the technical guidance that outlines how these are to be used.
- 5. Impact of this course

Are the programs of other departments or Colleges affected by this course? no If so, were these departments consulted? (Include correspondence) n/a Were any other departments asked to review or comment on the proposal? no

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
- 6.2 Courses for which this course will be a prerequisite? none
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Module or Topic	Readings or Activity	Evaluation Due Date
1	Threshold hazards	 Synchronous: Introduction to course and link to human exposure characterization. Recorded lectures: Relevance of ecotoxicological hazard characterization principles (e.g., ADME) to humans; Common toxicological effects seem in humans (compounds and body targets); Use of animal models. 	
	Non-threshold hazards; Carcinogen	 Recorded lectures: (1) Classic description of threshold risks to human health with a discussion of hormesis and U- shaped responses, (2) Classic carcinogenic non-threshold models used in hazard assessment. Synchronous: Class discussion and Quiz 1 	Quiz 1

2	Neurotoxicological	- Recorded lecture: Lead and mercury based non-threshold	
	non-threshold	hazard assessments.	
	hazards	- Synchronous: Check-in and discussion	
	Endocrine effects	- Recorded lecture: Endocrine disrupting compounds and	
		hormonal effects.	
		- Synchronous: Check-in and discussion	
3	Cumulative life-time	- Recorded lecture: Incremental lifetime cancer risk	
	hazards	example; the additive approach.	
		- Synchronous: Seminar	
	Incorporate multi-	- Recorded lecture: Voluntary versus non-voluntary	
	exposures into	exposures and how to calculate risk: dental example and	
	hazard assessments	radon/smoking example.	
		- Synchronous: Discussion and Quiz 2	Quiz 2
4	Probabilistic	- Recorded lecture: How to incorporate population	
	threshold modeling	response estimates into classic threshold modeling.	
		- Synchronous: Check-in discussion	
	Life-history scaling	- Recorded lecture: Physiological scaling of population	
	of hazard	uncertainty and between animal species for hazard	
	assessments	assessment.	
		- Synchronous: Discussion and Quiz 3	Quiz 3
5	Risk-benefit hazard	- Recorded lecture: How to incorporate beneficial effects	
	assessment	into a hazard assessment: Hg and Omega-3s.	
		- Guest lecture: Q&A with guest speaker	
	Occupational	- Recorded lecture: Short-term occupational hazard	
	exposures	assessment.	
		- Synchronous: Check-in discussion	
6	Technical Guidance	- Recorded lecture: Hazard assessment databases (e.g.,	
	Documents:	CTD) and selected defaults.	
	benefits and	- Synchronous: Class discussion	
	limitations		
	Peer presentations:	See Evaluation Components for details.	Peer
	Examples and case		presentations
	studies		
	FINAL EXAM		

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program.**

10-50
50-90
90-130
130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded? N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Quiz 1	15%
Quiz 2	15%
Quiz 3	15%
Peer presentation and Q&A	25%
Final exam	30%
Total	100%

9.2 Is the course exempt from the final examination? no

10. Required text

Include a bibliography for the course.

- <u>Guidelines for Human Exposure Assessment (2019) (pdf)</u> (3.62 MB, Oct 2019, EPA/100/B-1/001)
- British Columbia Guidance for Prospective Human Health Risk Assessment. https://www2.gov.bc.ca > bchhra-guidance
- Alberta Health, Government of Alberta, August 2019. Guidance on Human Health Risk Assessment for Environmental Impact Assessment in Alberta, Version 2.0 ISBN: 978-1-4601-4359-9. <u>https://open.alberta.ca/publications/9781460143599</u>
- Health Canada. 2021. FEDERAL CONTAMINATED SITE RISK ASSESSMENT IN CANADA: Overview of Health Canada Guidance Documents Related to Human Health Risk Assessment of Federal Contaminated Sites. <u>https://publications.gc.ca/collections/collection_2021/sc-hc/H129-107-2021-eng.pdf</u>
- WHO human health risk assessment toolkit: chemical hazards, second edition (IPCS harmonization project document, no. 8) ISBN 978-92-4-003572-0 (electronic version) ISBN 978-92-4-003573-7 (print version).
 <u>file:///C:/Users/kal282/Downloads/9789240035720-eng.pdf</u>
- <u>https://ctdbase.org/about/</u>

11. Resources

11.1 Proposed instructor: TBD (sessional instructor)

11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" **no** <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course none
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course none
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 875.3: Principles of Human Hazard Characterization SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Spring 2025]

<u>Course Instructors:</u> USask: TBD (sessional lecturer) Aarhus U: TBD (Department of Environmental Science)

Email: Addresses (for contact until delivery) markus.brinkmann@usask.ca; hasa@envs.au.dk

Course times: Apr - May; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites:</u> Students need a bachelor's degree in a science-related discipline (e.g., environmental science, toxicology, biology, chemistry, health sciences, or a related discipline), or they must have equivalent scientific and technical experience from work or other educational and training programs. Students are strongly encouraged to take TOX 872 and TOX 873 first.

Course Catalog Description:

Human hazard characterization begins after a toxicological or epidemiological study has identified the most sensitive organ/receptor and the dose at which this organ is adversely affected. Based on that dose, human hazard assessment must then transfer this knowledge to a form that can be used to assess the risk to humans based on a dose. This course will provide the expertise necessary to derive an estimate of a safe human exposure dose based on a key toxicological study.

Learning Outcomes:

By the completion of this course, students will be expected to:

- Differentiate between the assumptions of a non-threshold and threshold hazard assessment.
- Understand how cumulative exposure models are used to derive safe exposure limits.
- Implement probabilistic methods to estimate a safe exposure limit for critical receptors.
- Gain an appreciation and knowledge of scaling factors used to translate acute human or non-human results to estimates of a safe exposure limit.
- Understand how risk-benefit estimates are incorporated into hazard assessments.
- Become familiar with the differences in occupational versus non-occupational safe exposure limits and the technical guidance that outlines how these are to be used.

Class Overview:

This course will run over 6 weeks, with approx. 36 contact hours (i.e., 6 hours per week) scheduled in 2-hour or 3-hour sessions. The workload outside of scheduled class time (e.g., for further readings, completing assignments and exams) is estimated to be approx. 8 hours per week.

The material will be mainly delivered as pre-recorded asynchronous lectures that students can watch at their own pace, as well as synchronous seminar-style discussions *via* Zoom. Participation in these synchronous elements is optional but strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join through the Learning Management System (e.g., Canvas).

Learner success will be evaluated using a set of three graded quizzes. Specific examples and case studies will be covered in a flipped classroom format (i.e., each student will prepare a recorded presentation to their peers that will be uploaded to an online repository, and a subsequent Q&A period that can be either completed synchronously *via* Zoom or asynchronously using a discussion board). Both the presentations and participation in the Q&A period will be graded. The final assessment on the last day of class will consist of an open book exam that will be administered through the Learning Management System (e.g., Canvas).

Week	Module or Topic	Readings or Activity	Evaluation Due Date
1	Threshold hazards	- Synchronous: Introduction to course and link to human	
		exposure characterization.	
		- Recorded lectures: Relevance of ecotoxicological hazard	
		characterization principles (e.g., ADME) to humans; Common	
		toxicological effects seem in humans (compounds and body	
		targets); Use of animal models.	
	Non-threshold	- Recorded lectures: (1) Classic description of threshold risks	
	hazards;	to human health with a discussion of hormesis and U-shaped	
	Carcinogen	responses, (2) Classic carcinogenic non-threshold models	
		used in hazard assessment.	
		- Synchronous: Class discussion and Quiz 1	Quiz 1
2	Neurotoxicological	- Recorded lecture: Lead and mercury based non-threshold	
	non-threshold	hazard assessments.	
	hazards	- Synchronous: Check-in and discussion	
	Endocrine effects	- Recorded lecture: Endocrine disrupting compounds and	
		hormonal effects.	
		- Synchronous: Check-in and discussion	
3	Cumulative life-	- Recorded lecture: Incremental lifetime cancer risk example;	
	time hazards	the additive approach.	
		- Synchronous: Seminar	
	Incorporate multi-	- Recorded lecture: Voluntary versus non-voluntary	
	exposures into	exposures and how to calculate risk: dental example and	
	hazard assessments	radon/smoking example.	
		- Synchronous: Discussion and Quiz 2	Quiz 2
4	Probabilistic	- Recorded lecture: How to incorporate population response	
	threshold modeling	estimates into classic threshold modeling.	
		- Synchronous: Check-in discussion	
	Life-history scaling	- Recorded lecture: Physiological scaling of population	
	of hazard	uncertainty and between animal species for hazard	
	assessments	assessment.	
L		- Synchronous: Discussion and Quiz 3	Quiz 3
5	Kisk-benefit hazard	- Recorded lecture: How to incorporate beneficial effects into	
	assessment	a hazard assessment: Hg and Omega-3s.	
		- Guest lecture: Q&A with guest speaker	

Class Schedule:

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	Occupational	- Recorded lecture: Short-term occupational hazard	
	exposures	assessment.	
		- Synchronous: Check-in discussion	
6	Technical Guidance	- Recorded lecture: Hazard assessment databases (e.g., CTD)	
	Documents:	and selected defaults.	
	benefits and	- Synchronous: Class discussion	
	limitations		
	Peer presentations:	See Evaluation Components for details.	Peer
	Examples and case		presentations
	studies		
	FINAL EXAM		

Virtual office hours available upon request.

Grading Scheme:

Assessment	Value
Quiz 1	15%
Quiz 2	15%
Quiz 3	15%
Peer presentation and Q&A	25%
Final exam	30%
Total	100%

Evaluation Components:

Quiz 1: Threshold and non-threshold hazard assessment.

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Week 1.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Quiz 2: Lifetime hazard assessment

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Weeks 1 and 2. Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Quiz 3: Unified hazard assessment for the human population.

Value: 15% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Weeks 2 and 3.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Peer Presentations and Q&A: Examples and case studies

Value: 25% of final grade

Due Date: See Course Schedule

Type: 5-minute peer presentations of examples and/or case studies, as well as participation in Q&A Description: Students will prepare individual recorded 5-minute presentations that will be shared with their classmates through an online repository, and which will outline specific examples and/or case studies on a human hazard assessment of their choice that will cover information regarding (1) chemical selected, (2) sensitive organ/key toxicological study, (3) derivation of acceptable dose and (4) uncertainty estimates (80%). In addition to the peer presentation, students will be required to participate in a subsequent Q&A (either synchronous *via* Zoom, or asynchronous through a discussion board) period during which they will field questions from their peers. Each student is expected to ask at least two questions during the Q&A sessions (20%).

Final exam

Value: 30% of final grade Date: See Course Schedule Length: 3 hours Type: Open book

Description: This final exam will be a 3-hour open-book exam that will cover all topics and examples covered in class, excluding the peer presentations. The exam will be administered through the Learning Management System (e.g., Canvas) and consist of 4 long-answer questions worth 25% each that will be geared towards examining the students' synthesis skills with regard to the topics covered in class, rather than testing detailed knowledge.

Resources:

- <u>Guidelines for Human Exposure Assessment (2019) (pdf)</u> (3.62 MB, Oct 2019, EPA/100/B-1/001)
- British Columbia Guidance for Prospective Human Health Risk Assessment. https://www2.gov.bc.ca > bchhra-guidance
- Alberta Health, Government of Alberta, August 2019. Guidance on Human Health Risk Assessment for Environmental Impact Assessment in Alberta, Version 2.0 ISBN: 978-1-4601-4359-9. https://open.alberta.ca/publications/9781460143599
- Health Canada. 2021. FEDERAL CONTAMINATED SITE RISK ASSESSMENT IN CANADA: Overview of Health Canada Guidance Documents Related to Human Health Risk Assessment of Federal Contaminated Sites. https://publications.gc.ca/collections/collection 2021/sc-hc/H129-107-2021-eng.pdf
- WHO human health risk assessment toolkit: chemical hazards, second edition (IPCS harmonization project document, no. 8) ISBN 978-92-4-003572-0 (electronic version) ISBN 978-92-4-003573-7 (print version). file:///C:/Users/kal282/Downloads/9789240035720-eng.pdf
- <u>https://ctdbase.org/about/</u>

[standard back matter material will be added once the syllabus is formalized]



UNIVERSITY OF SASKATCHEWAN

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Fall 2025

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 876
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): Approaches, Models, and Tools for Characterizing Exposure and Hazard Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: **T1**
- 2.7 Prerequisite: Students must have completed TOX 872 and TOX 873 (or equivalent) or have permission from the instructor.

If there is a prerequisite waiver, who is responsible for signing it? **D** – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): The course will introduce students to the most commonly applied approaches, predictive models, and computational tools to characterize chemical exposure and hazard. Particular emphasis will be placed on understanding of uncertainties and limitations of models, as well as the process for selecting models of an adequate level of complexity for the task at hand.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and

processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

By the completion of this course, students will be able to:

- Determine and quantify the sources of uncertainty in models and parameters.
- Find the optimum model complexity: What do we want to show, and what do we know?
- Identify and describe the elements, as well as pros and cons, of major exposure and hazard models that are used by decision-makers and scientists globally in a chemical risk assessment context.
- Determine when generic approaches are "enough", and when site- or context-specificity is needed.
- Explain default values: How are they derived, how to use them, and how not to use them.
- Compare major model results and identify the most appropriate for a given problem.
- By studying various applications of models in the risk assessment process of various jurisdictions across the globe, students will also gain an understanding of the considerations when generalizing environmental processes based on models.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? **no** If so, were these departments consulted? (Include correspondence) **n/a** Were any other departments asked to review or comment on the proposal? **no**

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
- 6.2 Courses for which this course will be a prerequisite? **TOX 880**
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Module or Topic	Readings or Activity	Evaluation Due
1	Introduction to modeling	Recorded lecture: What are computational models, and how are they used in chemical risk assessment? How do different models differ in their structure, computational demands, etc.? How to deal with uncertainty at all levels: Conceptually, structurally, and statistically. Do you need to learn computer programming to be a modeler or are there other ways? Synchronous: Seminar	
	Model structure	Recorded lecture: Best practices in model construction and model selection. What is needed in terms of sources, environmental or biological processes, and input parameters? Generic or site-specific, species-specific, etc.? Benefits and drawbacks of different modeling principles. Critical pitfalls in modelling.	

2	Model	Recorded lecture: Hieratical uncertainty analysis:	Quiz
2	uncertainty	Concentual structural and statistical uncertainty Good	Quiz
	uncertainty	pravis in uncertainty awareness	
		Superconduct: Seminar and check-in discussion and Quiz	
		Virtual office hours available	
	Model 1 -	Recorded lecture: Background information on a set of	
	Background	commonly used models in risk assessment in Europe	
3	Model 1 - Hands-	Activity: Practice of using models that are commonly	
	on unit 1	applied in risk assessment in Europe	
		Synchronous: Seminar and check-in and discussion of	
		Assignment 1	
		Virtual office hours available	
	Model	Recorded lecture: Evaluating models with measurements.	
	evaluation/verifi	Spatial and temporal requirements, Hieratical Bayesian	
	cation	structure equation models. Application of Metropolis	
		Hastings MCMC algorithm.	
4	Model 2 -	Recorded lecture: Background information on a set of	Assignment 1
	Background	common models for risk assessment in North America	
		Synchronous: Seminar and check-in. Discussion of	
		Assignment 2.	
		Virtual office hours available	
	Model 2 - Hands-	Activity: Practice of using models that are commonly	
	on unit 2	applied in risk assessment in North America	
5	Bioavailability	Recorded lecture: Bioavailability and bioaccumulation	Assignment 2
-	and	modeling, in vitro - in vivo extrapolation, physiologically	
	bioaccumulation	based toxicokinetic models. ADME prediction tools	
		Synchronous: Seminar and check-in. Discussion of	
		Assignment 3	
		Virtual office hours available	
	Model 2 Hands	Activity: Practice of using bioaccumulation models that are	
	on unit 2	commonly applied in risk assessments globally	
6	Default values	Recorded lecture: How are default values and reference	Accignment 2
σ	and reference	tables in Technical Cuidance Desuments derived and vest	Assignment 3
	tables	in environmental rick assessment	
	Lables	In environmental fisk assessment	
	Keview	Synchronous: Check-In and review for Final Exam	
	FINAL EXAM		

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.

10-50
50-90
90-130
130+

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9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded? N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Quiz	10%
Assignment 1	20%
Assignment 2	20%
Assignment 3	20%
Final Exam	30%
Total	100%

9.2 Is the course exempt from the final examination? no

10. Required text

Include a bibliography for the course.

- https://echa.europa.eu/support/dossier-submission-tools/euses
- https://www.efsa.europa.eu/sites/default/files/event/FP20191114_p8_JLD.pdf
- https://www.efsa.europa.eu/en/science/tools-and-resources
- <u>https://www.epa.gov/tsca-screening-tools</u>

11. Resources

- 11.1 Proposed instructor: Markus Brinkmann (USask), Pedro Carvalho (Aarhus), Patrik Fauser (Aarhus), Katrin Vorkamp (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.

11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" **no** <u>http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees</u>

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
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IN3	Internship - General	SUP	Teacher Supervision
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LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements: ELWR – English Language Writing Requirement ILRQ – Indigenous Learning Requirement QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course TOX 872, TOX 873
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course **none**
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 876.3: Approaches, Models, and Tools for Characterizing Exposure and Hazard SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Fall 2025] <u>Course Instructors</u> USask: Markus Brinkmann (lead), Paul Jones (guest lectures) (SENS & TOX) Aarhus: Pedro Carvalho, Patrik Fauser, Katrin Vorkamp <u>Email-Addresses:</u>

Program Proposal: Appendices—FINAL revised 15 February 2024

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<u>Course times:</u> Sept – Oct; days and times TBD <u>Course notes:</u> See course website (Canvas Link)

<u>Prerequisites:</u> Students must have completed TOX 872 and TOX 873 (or equivalent) or have permission from the instructor.

Course Catalogue Description:

The course will introduce students to the most commonly applied approaches, predictive models, and computational tools to characterize chemical exposure and hazard. Particular emphasis will be placed on understanding of uncertainties and limitations of models, as well as the process for selecting models of an adequate level of complexity for the task at hand.

Learning Outcomes:

By the completion of this course, students will be able to:

- Determine and quantify the sources of uncertainty in models and parameters.
- Find the optimum model complexity: What do we want to show, and what do we know?
- Identify and describe the elements, as well as pros and cons, of major exposure and hazard models that are used by decision-makers and scientists globally in a chemical risk assessment context.
- Determine when generic approaches are "enough", and when site- or context-specificity is needed.
- Explain default values: How are they derived, how to use them, and how not to use them.
- Compare major model results and identify the most appropriate for a given problem.
- By studying various applications of models in the risk assessment process of various jurisdictions across the globe, students will also gain an understanding of the considerations when generalizing environmental processes based on models.

Class Overview:

This course will run over 6 weeks with approx. 36 contact hours (i.e., 6 hours per week). The workload outside of scheduled class time (e.g., for further readings and completing projects and assignments) is estimated to be approx. 12 hours per week. The material will be mainly delivered as pre-recorded asynchronous lectures that students can watch at their own pace, as well as synchronous seminar-style discussions *via* Zoom. Participation in these synchronous elements is optional but strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join through the Learning Management System (e.g., Canvas).

Learner success will be evaluated using one graded quiz, and three assignments. The final assessment on the last day of class will consist of an open book exam that will be administered through the Learning Management System (e.g., Canvas).

Week	Module or Topic	Readings or Activity	Evaluation Due
1	Introduction to	Recorded lecture: What are computational models, and how are	
	modeling	they used in chemical risk assessment? How do different models	
		differ in their structure, computational demands, etc.? How to	
		deal with uncertainty at all levels: Conceptually, structurally, and	
		statistically. Do you need to learn computer programming to be	
		a modeler or are there other ways?	

Class Schedule:

		Synchronous: Seminar	
	Model structure	Recorded lecture: Best practices in model construction and model selection. What is needed in terms of sources, environmental or biological processes, and input parameters? Generic or site-specific, species-specific, etc.? Benefits and drawbacks of different modeling principles. Critical pitfalls in modelling.	
2	Model uncertainty	Recorded lecture: Hieratical uncertainty analysis: Conceptual, structural and statistical uncertainty. Good praxis in uncertainty awareness. Synchronous: Seminar and check-in discussion and Quiz Virtual office hours available	Quiz
	Model 1 - Background	Recorded lecture: Background information on a set of commonly used models in risk assessment in Europe	
3	Model 1 - Hands-on unit 1	Activity: Practice of using models that are commonly applied in risk assessment in Europe Synchronous: Seminar and check-in and discussion of Assignment 1 Virtual office hours available	
	Model evaluation/verifi cation	Recorded lecture: Evaluating models with measurements. Spatial and temporal requirements, Hieratical Bayesian structure equation models. Application of Metropolis Hastings MCMC algorithm.	
4	Model 2 - Background	Recorded lecture: Background information on a set of common models for risk assessment in North America Synchronous: Seminar and check-in. Discussion of Assignment 2. Virtual office hours available	Assignment 1
	Model 2 - Hands-on unit 2	Activity: Practice of using models that are commonly applied in risk assessment in North America	
5	Bioavailability and bioaccumulation	Recorded lecture: Bioavailability and bioaccumulation modeling, <i>in vitro - in vivo</i> extrapolation, physiologically based toxicokinetic models, ADME prediction tools Synchronous: Seminar and check-in. Discussion of Assignment 3 Virtual office hours available	Assignment 2
	Model 3 - Hands-on unit 3	Activity: Practice of using bioaccumulation models that are commonly applied in risk assessments globally	
6	Default values and reference tables	Recorded lecture: How are default values and reference tables in Technical Guidance Documents derived and used in environmental risk assessment	Assignment 3
	Review	Synchronous: Check-in and review for Final Exam	
	FINAL EXAM		

Grading Scheme:

Assessment	Value
Quiz	10%
Assignment 1	20%
Assignment 2	20%
Assignment 3	20%
Final Exam	30%
Total	100%

Evaluation Components:

Quiz: Model types, model structures, and uncertainties

Value: 10% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Week 1.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions.

Assignment 1: Models used in the European risk assessment context

Value: 20% of final grade

Due Date: See Course Schedule

Type: Students will write a summary report of the exercise in hands-on unit 1.

Description: The purpose of this assignment is to demonstrate your ability to apply models introduced in hands-on unit 1. During this unit, you will be provided with a variety of example datasets and models to choose from for the day and guided through each step of the analysis. For this assignment, you must produce a single Microsoft Word document with approximately two pages of text, and which contains the following four sections: (1) description of your dataset, (2) description of the model, (3) summary of the most important findings, and (4) relevance of your findings in the risk assessment context. Figures produced during the analysis should be added after the text and must be properly labeled (figure number and caption) and referenced in the text. Proper bibliographic references should be provided, where appropriate.

Assignment 2: Models used in the North American risk assessment context

Value: 20% of final grade

Due Date: See Course Schedule

Type: Students will write a summary report of the exercise in hands-on unit 2.

Description: The purpose of this assignment is to demonstrate your ability to apply models introduced in hands-on unit 2. During this unit, you will be provided with a variety of example datasets and models to choose from for the day and guided through each step of the analysis. For this assignment, you must produce a single Microsoft Word document with approximately two pages of text, and which contains the following four sections: (1) description of your dataset, (2) description of the model, (3) summary of the most important findings, and (4) relevance of your findings in the risk assessment context. Figures produced during the analysis should be added after the text and must be properly labeled (figure number and caption) and referenced in the text. Proper bibliographic references should be provided, where appropriate.

Assignment 3: Bioaccumulation models and tools

Value:	20% of final grade
Due Date:	See Course Schedule
Type:	Students will write a summary report of the exercise in hands-on unit 3.
Description:	The purpose of this assignment is to demonstrate your ability to apply models introduced in

hands-on unit 3. During this unit, you will be provided with a variety of example datasets and models to choose from for the day and guided through each step of the analysis. For this assignment, you must produce a single Microsoft Word document with approximately two pages of text, and which contains the following four sections: (1) description of your dataset, (2) description of the model, (3) summary of the most important findings, and (4) relevance of your findings in the risk assessment context. Figures produced during the analysis should be added after the text and must be properly labeled (figure number and caption) and referenced in the text. Proper bibliographic references should be provided, where appropriate.

Final exam

Value:	30% of final grade
Date:	See Course Schedule
Length: 3 hours	
Туре:	Open book
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Description: This final exam will be a 3-hour open-book exam that will cover all topics and examples covered in class, excluding the peer presentations. The exam will be administered through the Learning Management System (e.g., Canvas) and consist of 4 long-answer questions worth 25% each that will be geared towards examining the students' synthesis skills with regard to the topics covered in class, rather than testing detailed knowledge.

Resources:

- https://echa.europa.eu/support/dossier-submission-tools/euses
- <u>https://www.efsa.europa.eu/sites/default/files/event/FP20191114_p8_JLD.pdf</u>
- https://www.efsa.europa.eu/en/science/tools-and-resources
- <u>https://www.epa.gov/tsca-screening-tools</u>

[standard back matter will be added once the syllabus has been formalized]



New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Fall 2025

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 877
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): **Practical Skills for Characterizing the Exposome** Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: **T1**
- 2.7 Prerequisite: TOX 872 and TOX 873 are required prerequisites or permission from the instructor. TOX 876 is also strongly recommended.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): In this course, students apply the skills they have obtained in earlier courses related to characterizing the exposome to real-world risk assessment scenarios. This will be achieved by engaging students in an active learning experience that is modeled after a typical project life cycle as would be common in a professional work environment. This active learning experience will take place in collaboration with an academic mentor from either the University of Saskatchewan or Aarhus University.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

By the completion of this course, students should be able to:

- Apply methods and approaches for characterizing the exposome.
- Design and scope a project to characterize the exposome in support of risk assessment.
- Explain the complexities and requirements of project management.
- Present a portfolio of work that forms the basis for the assembly of a detailed written report and executive summary.
- Provide oral and poster presentations to both informed and general audiences.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? **no** If so, were these departments consulted? (Include correspondence) **n/a** Were any other departments asked to review or comment on the proposal? **no**

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
- 6.2 Courses for which this course will be a prerequisite? none
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Readings or Activity	Evaluation
WCCK		Due
1	Synchronous activity: Overview of class structure and expected outcomes,	
	matching of students in pairs with mutual interests (where appropriate),	
	matching with local faculty mentors.	
	Asynchronous activity: Students will read background literature and consult	
	with faculty mentors to select a case study of their interest and explore its	
	feasibility and relevance.	
	Asynchronous activity: Scoping of the project – students will outline the scope	
	of the project, starting from a conceptual site model (define the essential	
	compartments, processes, parameters, chemicals, etc.), existing risk	
	assessments and datasets, pertinent jurisdiction, etc.	
	Synchronous check-in: Group discussion of ideas, challenges, and scope.	
2	Asynchronous activity: Further development and scoping of student projects.	
	Synchronous: Selected case studies, scoping and relevance are explained to	Milestone 1
	classmates and instructors in the form of 5-minute presentations. Students will	
	be able to freely ask any questions and discuss their scoping progress.	
3	Asynchronous activity: Execution of risk assessment following the procedures	
	outlined in earlier classes, and encompassing at least 3 of the elements	
	Synchronous check-in: Weekly check-in on progress, oral round-table update in	Milestone 2
	the form of a 5-minute presentation per student/team to class and instructors.	
4	Asynchronous activity: Execution of risk assessment (continued).	

	Synchronous check-in: Weekly check-in on progress, oral round-table update in the form of a 5-minute presentation per student/team to class and instructors.	Milestone 3
5	Asynchronous activity: Execution of risk assessment (continued) and writing of final report.	
	Synchronous check-in: Final progress review and submission of the portfolio of work (Milestone 5).	Milestone 4
	Synchronous check-in: Free discussion on writing the final report.	
6	Asynchronous activity: Writing of final report (continued) and design of research poster summarizing work.	
	Synchronous check-in: Free discussion on preparation of final report and poster.	
	Synchronous activity: Virtual poster symposium and submission of the final report including an executive summary.	Milestone 5 and 6

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.

10-50 50-90 90-130 130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays, or projects, etc.)

9.1 How should this course be graded?

N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Milestone 1	10%
Milestone 2	10%
Milestone 3	10%
Milestone 4	20%
Milestone 5	20%
Milestone 6	30%
Total	100%

9.2 Is the course exempt from the final examination? Yes

10. Required text

Include a bibliography for the course.

https://www.canada.ca/en/health-canada/services/chemicals-risk-assessments.html

https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pestmanagement/public.html

https://www.canada.ca/en/health-canada/services/consumer-product-safety/legislation-guidelines/actsregulations.html#pmra

https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticidespest-management/fact-sheets-other-resources.html

https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticidespest-management/policies-guidelines.html

https://laws.justice.gc.ca/eng/acts/P-9.01/page-1.html

https://www.canada.ca/en/health-canada/services/chemical-substances/chemicals-management-plan.html

https://www.canada.ca/en/health-canada/services/drugs-health-products/drug-products/legislationguidelines.html

https://osha.europa.eu/en/themes/dangerous-

substances/reach#:~:text=REACH%20is%20the%20European%20chemical,from%20the%20use%20of%20chemi cals.

https://www.eea.europa.eu/publications/NYM2/page007.html

Berggren, E. and A.P. Worth. 2023. Towards a future regulatory framework for chemicals in the European Union - Chemicals 2.0. Regul Toxicol Pharmacol doi: 10.1016/j.yrtph.2023.105431.

11. Resources

- 11.1 Proposed instructor: Kerstin Bluhm (USask), Pedro Carvalho (Aarhus), Patrik Fauser (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31

12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	XCH	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

3.1 Permission Required: yes

- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course TOX 872, TOX 873
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course **none**
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 877.3: Practical Skills for Characterizing the Exposome SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Fall 2025]

Course Instructors:

USask: Kerstin Bluhm (lead); Guest lectures: Markus Brinkmann, Paul Jones (TOX & SENS) Aarhus U: Pedro Carvalho, Patrik Fauser (Department of Environmental Science)

Email: Addresses markus.brinkmann@usask.ca; pedro.carvalho@envs.au.dk

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Course times: October-November; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites</u>: TOX 872 and TOX 873 are required prerequisites or permission from the instructor. TOX 876 is also strongly recommended.

Course Catalogue Description:

In this course, students apply the skills they have obtained in earlier courses related to characterizing the exposome to real-world risk assessment scenarios. This will be achieved by engaging students in an active learning experience that is modeled after a typical project life cycle as would be common in a professional work environment. This active learning experience will take place in collaboration with an academic mentor from either the University of Saskatchewan or Aarhus University.

Learning Outcomes:

By the completion of this course, students should be able to:

- Apply methods and approaches for characterizing the exposome.
- Design and scope a project to characterize the exposome in support of risk assessment.
- Explain the complexities and requirements of project management.
- Present a portfolio of work that forms the basis for the assembly of a detailed written report and executive summary.
- Provide oral and poster presentations to both informed and general audiences.

Class Overview:

This course will run over 6 weeks with approx. 36 contact hours (i.e., 6 hours per week). The workload outside of scheduled class time (e.g., for further readings and completing projects and assignments) is estimated to be approx. 12 hours per week. Students will work individually or in groups of two students to select a case study of their own choice (if available), or from a predefined list of topics, and team up with a local mentor from the University of Saskatchewan or Aarhus University with suitable expertise. In exceptional circumstances (e.g., where there is access to interesting samples or datasets), these projects might encompass a hands-on component (subject to instructor and program coordinator approval).

Students will be able to schedule their workload flexibly, and there will be weekly synchronous check-ins and report-outs to the class on individual milestones *via* Zoom. Participation in these synchronous elements is optional but strongly recommended. Students who cannot participate will be required to prepare a recorded presentation that will be uploaded to an online repository, and any questions and discussion will be completed asynchronously using a discussion board. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join through the Learning Management System (e.g., Canvas).

Class Schedule:

Week	Readings or Activity	Evaluation Due
	Synchronous activity: Overview of class structure and expected outcomes, matching of students in pairs with mutual interests (where appropriate), matching with local faculty	
1	mentors.	

	Asynchronous activity: Students will read background literature and consult with			
	faculty mentors to select a case study of their interest and explore its feasibility and			
	relevance.			
	Asynchronous activity: Scoping of the project – students will outline the scope of the			
	project, starting from a conceptual site model (define the essential compartments,			
	processes, parameters, chemicals, etc.), existing risk assessments and datasets,			
	pertinent jurisdiction, etc.			
	Synchronous check-in: Group discussion of ideas, challenges and scope.			
	Asynchronous activity: Further development and scoping of student projects.			
2	Synchronous: Selected case studies, scoping and relevance are explained to classmates	Milestone 1		
	and instructors in the form of 5-minute presentations. Students will be able to freely			
	ask any questions and discuss their scoping progress.			
	Asynchronous activity: Execution of risk assessment following the procedures outlined			
3	in earlier classes, and encompassing at least 3 of the elements			
	Synchronous check-in: Weekly check-in on progress, oral round-table update in the	Milestone 2		
	form of a 5-minute presentation per student/team to class and instructors.			
	Asynchronous activity: Execution of risk assessment (continued).			
4	Synchronous check-in: Weekly check-in on progress, oral round-table update in the	Milestone 3		
	form of a 5-minute presentation per student/team to class and instructors.			
	Asynchronous activity: Execution of risk assessment (continued) and writing of final			
5	report.			
	Synchronous check-in: Final progress review and submission of the portfolio of work	Milestone 4		
	(Milestone 5).			
	Synchronous check-in: Free discussion on writing the final report.			
	Asynchronous activity: Writing of final report (continued) and design of research poster			
	summarizing work.			
6	Synchronous check-in: Free discussion on preparation of final report and poster.			
	Synchronous activity: Virtual poster symposium and submission of the final report	Milestone 5		
	including an executive summary.	and 6		

Grading Scheme:

Assessment	Value
Milestone 1	10%
Milestone 2	10%
Milestone 3	10%
Milestone 4	20%
Milestone 5	20%
Milestone 6	30%
Total	100%

Evaluation Components:

Milestone 1: Presentation on selected case study

Value:	10% of final grade
Due Date:	See Course Schedule
Туре:	Presentation to classmates and instructors

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Description: Students will present the case study and its environmental and/or regulatory relevance to their classmates and instructors in the form of a 5-minute presentation. This presentation can be oral only, or make use of PowerPoint slides, videos, animations, etc.

Milestone 2: Full scoping of the selected project

Value: 10% of final grade

Due Date: See Course Schedule

Type: Milestone 2 (by the end of week 3): (1) 2-page formal scoping document (laid out as a fillable PDF application form or similar) that will be peer-reviewed by classmates, as well as (2) a 1-page reflection paper on the peer-review process, and (3) a 5-minute presentation that includes the following aspects:

- Chemical or material (class)
- Geographic scope, including conceptual site model, relevant exposure scenarios
- Availability of prior and related risk assessments
- Availability of datasets and models
- Design of a hypothetical monitoring or sampling scheme to provide data in the future (timeframe, geographic scope, etc.)

Milestone 3: Weekly progress update 1

Value: 10% of final grade

Due Date: See Course Schedule

Type: Presentation to classmates and instructors

Description: Weekly check-in on progress, oral round-table update in the form of a 5-minute presentation per student/team to class and instructors. This presentation can be free speech, make use of PowerPoint slides, videos, animations, etc.

Milestone 4: Portfolio of work

Value:20% of final gradeDue Date:See Course ScheduleType:Structured submission of the portfolio of work generated for the risk assessmentDescription:Students are required to submit a portfolio of work generated for their risk assessment. Thissubmission will need to follow a formal structure outlined in the detailed descriptions for this assignment.

Milestone 5: Final report and executive summary

Value: 30% of final grade

Due Date: See Course Schedule

Type: Final report and executive summary based on the portfolio of work.

Description: Students are required to submit a single 5-15-page document (50%) that describes the portfolio of work generated during this project and follows the design and structural requirements outlined in the detailed descriptions of this assignment. In addition, students are required to create a 1-page executive summary that needs to clearly create linkages to the main document and help decision-makers quickly and comprehensively grasp the essential information contained therein (50%).

Milestone 6: Poster presentation

Value:20% of final gradeDue Date:See Course ScheduleType:Poster presentation and Q&A session at a virtual poster symposiumDescription:Students are required to create a poster that summarizes their findings to a general audience.This poster will be presented to classmates and instructors and other interested parties (internal and external to

the University of Saskatchewan and Aarhus University) at a virtual poster symposium and highlight the achievements of the class.

Resources:

https://www.canada.ca/en/health-canada/services/chemicals-risk-assessments.html

https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pestmanagement/public.html

https://www.canada.ca/en/health-canada/services/consumer-product-safety/legislation-guidelines/actsregulations.html#pmra

https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/fact-sheets-other-resources.html

https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/policies-guidelines.html

https://laws.justice.gc.ca/eng/acts/P-9.01/page-1.html

https://www.canada.ca/en/health-canada/services/chemical-substances/chemicals-management-plan.html

https://www.canada.ca/en/health-canada/services/drugs-health-products/drug-products/legislation-guidelines.html

https://osha.europa.eu/en/themes/dangerous-

substances/reach#:~:text=REACH%20is%20the%20European%20chemical,from%20the%20use%20of%20chemicals.

https://www.eea.europa.eu/publications/NYM2/page007.html

Berggren, E. and A.P. Worth. 2023. Towards a future regulatory framework for chemicals in the European Union - Chemicals 2.0. Regul Toxicol Pharmacol **doi: 10.1016/j.yrtph.2023.105431.**

[standard back matter will be added once the syllabus is finalized]



UNIVERSITY OF SASKATCHEWAN Proposal & C

New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Fall 2025

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 878
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): **Practical Skills for Characterizing Hazard** Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: T1/T2
- 2.7 Prerequisite: TOX 872 and TOX 873 are required prerequisites or permission from the instructor. TOX 876 is also strongly recommended.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): In this course students apply the skills they have obtained in earlier courses related to characterizing hazards of chemicals based on real-world risk assessment scenarios. This will be achieved by engaging students in an active learning experience that is modeled after a typical project life cycle as would be common in a professional work environment. This active learning experience will take place in collaboration with an academic mentor from either the University of Saskatchewan or Aarhus University.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

By the completion of this course, students should be able to:

- Apply methods and approaches for characterizing chemical hazards.
- Design and scope a project to characterize hazard in support of risk assessment.
- Explain the complexities and requirements of project management.
- Present a portfolio of work that forms the basis for the assembly of a detailed written report and executive summary.
- Provide oral and poster presentations to both informed and general audiences.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? **no** If so, were these departments consulted? (Include correspondence) **n/a** Were any other departments asked to review or comment on the proposal? **no**

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
- 6.2 Courses for which this course will be a prerequisite? **none**
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Readings or Activity	Evaluation Due
1	Synchronous activity: Overview of class structure and expected outcomes, matching of students in pairs with mutual interests (where appropriate), matching with local faculty mentors.	
	Asynchronous activity: Students will read background literature and consult with faculty mentors to select a case study of their interest and explore its feasibility and relevance.	
	Asynchronous activity: Scoping of the project – students will outline the scope of the project, starting from an identification of potentially impacted receptors (humans, aquatic and terrestrial organisms), existing risk assessments and datasets, pertinent jurisdiction, etc.	
	Synchronous check-in: Group discussion of ideas, challenges and scope.	
2	Asynchronous activity: Further development and scoping of student projects.	
	Synchronous: Selected case studies, scoping and relevance are explained to classmates and instructors in the form of 5-minute presentations. Students will be able to freely ask any questions and discuss their scoping progress.	Milestone 1
3	Asynchronous activity: Execution of risk assessment following the procedures outlined in earlier classes	
	Synchronous check-in: Weekly check-in on progress, oral round-table update in the form of a 5-minute presentation per student/team to class and instructors.	Milestone 2
4	Asynchronous activity: Execution of risk assessment (continued).	
	Synchronous check-in: Weekly check-in on progress, oral round-table update in the form of a 5-minute presentation per student/team to class and instructors.	Milestone 3

5	Asynchronous activity: Execution of risk assessment (continued) and writing of final report.	
	Synchronous check-in: Final progress review and submission of the portfolio of work (Milestone 5).	Milestone 4
	Synchronous check-in: Free discussion on writing the final report.	
6	Asynchronous activity: Writing of final report (continued) and design of research poster summarizing work.	
	Synchronous check-in: Free discussion on preparation of final report and poster.	
	Synchronous activity: Virtual poster symposium and submission of the final report including an executive summary.	Milestone 5 and 6

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program.**

10-50
50-90
90-130
130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded? N – Numeric/Percentage

(Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Milestone 1	10%
Milestone 2	10%
Milestone 3	10%
Milestone 4	20%
Milestone 5	30%
Milestone 6	20%
Total	100%

9.2 Is the course exempt from the final examination? Yes

10. Required text

Include a bibliography for the course.

- <u>https://echa.europa.eu/guidance-documents/guidance-on-information-requirements-and-chemical-safety-assessment</u>
- <u>https://www.efsa.europa.eu/en/applications/pesticides/regulationsandguidance</u>
- <u>https://www.epa.gov/risk/risk-assessment-guidance</u>
- <u>https://www.canada.ca/content/dam/eccc/migration/fcs-scf/B15E990A-C0A8-4780-9124-</u> 07650F3A68EA/ERA-20Guidance-2030-20March-202012 FINAL En.pdf

11. Resources

- 11.1 Proposed instructor: TBD (USask), Pedro Carvalho (Aarhus), Patrik Fauser (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
CO0	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar

Program Proposal: Appendices—FINAL revised 15 February 2024
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

2.2 For the College of Arts and Science only: To which program type does this course belong?

- FNAR Fine Arts
- HUM Humanities
- SCIE Science
- SOCS Social Science
- ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course TOX 872, TOX 873
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course none
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 878.3: Practical Skills for Characterizing Hazard SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Fall 2025]

Course Instructors:

USask: Future faculty member, or sessional (lead); Guest lectures: Markus Brinkmann, Paul Jones (SENS & TOX) Aarhus U: Pedro Carvalho, Patrik Fauser (Department of Environmental Science)

Email: Addresses markus.brinkmann@usask.ca; pedro.carvalho@envs.au.dk

Course times: December–January; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites</u>: TOX 872 and TOX 873 are required prerequisites or permission from the instructor. TOX 876 is also strongly recommended.

Course Catalogue Description:

In this course students apply the skills they have obtained in earlier courses related to characterizing hazards of chemicals based on real-world risk assessment scenarios. This will be achieved by engaging students in an active learning experience that is modeled after a typical project life cycle as would be common in a professional work environment. This active learning experience will take place in collaboration with an academic mentor from either the University of Saskatchewan or Aarhus University.

Learning Outcomes:

By the completion of this course, students should be able to:

- Apply methods and approaches for characterizing chemical hazards.
- Design and scope a project to characterize hazard in support of risk assessment.
- Explain the complexities and requirements of project management.
- Present a portfolio of work that forms the basis for the assembly of a detailed written report and executive summary.
- Provide oral and poster presentations to both informed and general audiences.

Class Overview:

This course will run over 6 weeks with approx. 36 contact hours (i.e., 6 hours per week). The workload outside of scheduled class time (e.g., for further readings and completing projects and assignments) is estimated to be approx. 12 hours per week. Students will work individually or in groups of two students to select a case study of their own choice (if available), or from a predefined list of topics, and team up with a local mentor from the University of Saskatchewan or Aarhus University with suitable expertise. In exceptional circumstances (e.g., where there is access to interesting samples or datasets), these projects might encompass a hands-on component (subject to instructor and program coordinator approval).

Students will be able to schedule their workload flexibly, and there will be weekly synchronous check-ins and report-outs to the class on individual milestones *via* Zoom. Participation in these synchronous elements is optional but strongly recommended. Students who cannot participate will be required to prepare a recorded presentation that will be uploaded to an online repository, and any questions and discussion will be completed asynchronously using a discussion board. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join through the Learning Management System (e.g., Canvas).

Week	Readings or Activity	Evaluation
1	Synchronous activity: Overview of class structure and expected outcomes, matching of students in pairs with mutual interests (where appropriate), matching with local faculty mentors.	
	Asynchronous activity: Students will read background literature and consult with faculty mentors to select a case study of their interest and explore its feasibility and relevance.	
	Asynchronous activity: Scoping of the project – students will outline the scope of the project, starting from an identification of potentially impacted receptors (humans, aquatic and terrestrial organisms), existing risk assessments and datasets, pertinent jurisdiction, etc.	
	Synchronous check-in: Group discussion of ideas, challenges and scope.	
2	Asynchronous activity: Further development and scoping of student projects.	
	Synchronous: Selected case studies, scoping and relevance are explained to classmates and instructors in the form of 5-minute presentations. Students will be able to freely ask any questions and discuss their scoping progress.	Milestone 1
3	Asynchronous activity: Execution of risk assessment following the procedures outlined in earlier classes	
	Synchronous check-in: Weekly check-in on progress, oral round-table update in the form of a 5-minute presentation per student/team to class and instructors.	Milestone 2
4	Asynchronous activity: Execution of risk assessment (continued).	

Class Schedule:

	Synchronous check-in: Weekly check-in on progress, oral round-table update in the form of a 5-minute presentation per student/team to class and instructors.	Milestone 3
5	Asynchronous activity: Execution of risk assessment (continued) and writing of final report.	
	Synchronous check-in: Final progress review and submission of the portfolio of work (Milestone 5).	Milestone 4
	Synchronous check-in: Free discussion on writing the final report.	
6	Asynchronous activity: Writing of final report (continued) and design of research poster summarizing work.	
	Synchronous check-in: Free discussion on preparation of final report and poster.	
	Synchronous activity: Virtual poster symposium and submission of the final report	Milestone 5
	including an executive summary.	and 6

Grading Scheme:

Assessment	Value
Milestone 1	10%
Milestone 2	10%
Milestone 3	10%
Milestone 4	20%
Milestone 5	30%
Milestone 6	20%
Total	100%

Evaluation Components:

Milestone 1: Presentation on selected case study

Value: 10% of final grade

Due Date: See Course Schedule

Type: Presentation to classmates and instructors

Description: Students will present the case study and its environmental and/or regulatory relevance to their classmates and instructors in the form of a 5-minute presentation. This presentation can be oral only, or make use of PowerPoint slides, videos, animations, etc.

Milestone 2: Full scoping of the selected project

Value: 10% of final grade

Due Date: See Course Schedule

Type: Milestone 2 (by the end of week 3): (1) 2-page formal scoping document (laid out as a fillable PDF application form or similar) that will be peer-reviewed by classmates, as well as (2) a 1-page reflection paper on the peer-review process, and (3) a 5-minute presentation that includes the following aspects:

- Chemical or material (class)
- Geographic scope, relevant exposure scenarios, relevant receptors
- Availability of prior and related risk assessments
- Availability of datasets and models
- Design of a hypothetical study to assess the relevant hazards associated with the chemicals or material in support of risk assessment

Milestone 3: Progress update

Value: 10% of final grade

Due Date: See Course Schedule

Type: Presentation to classmates and instructors

Description: Check-in on progress, oral round-table update in the form of a 5-minute presentation per student/team to class and instructors. This presentation can be free speech, make use of PowerPoint slides, videos, animations, etc.

Milestone 4: Portfolio of work

Value: 20% of final grade

Due Date: See Course Schedule

Type:Structured submission of the portfolio of work generated for the risk assessmentDescription:Students are required to submit a portfolio of work generated for their risk assessment. Thissubmission will need to follow a formal structure outlined in the detailed descriptions for this assignment.

Milestone 5: Final report and executive summary

Value: 30% of final grade

Due Date: See Course Schedule

Type: Final report and executive summary based on the portfolio of work.

Description: Students are required to submit a single 5-15-page document (50%) that describes the portfolio of work generated during this project and follows the design and structural requirements outlined in the detailed descriptions of this assignment. In addition, students are required to create a 1-page executive summary that needs to clearly create linkages to the main document and help decision-makers quickly and comprehensively grasp the essential information contained therein (50%).

Milestone 6: Poster presentation

Value: 20% of final grade

Due Date: See Course Schedule

Type: Poster presentation and Q&A session at a virtual poster symposium

Description: Students are required to create a poster that summarizes their findings to a general audience. This poster will be presented to classmates and instructors and other interested parties (internal and external to the University of Saskatchewan and Aarhus University) at a virtual poster symposium and highlight the achievements of the class.

Resources:

- <u>https://echa.europa.eu/guidance-documents/guidance-on-information-requirements-and-chemical-safety-assessment</u>
- <u>https://www.efsa.europa.eu/en/applications/pesticides/regulationsandguidance</u>
- <u>https://www.epa.gov/risk/risk-assessment-guidance</u>
- <u>https://www.canada.ca/content/dam/eccc/migration/fcs-scf/B15E990A-C0A8-4780-9124-07650F3A68EA/ERA-20Guidance-2030-20March-202012_FINAL_En.pdf</u>

[standard back matter material will be added once the syllabus is formalized]



New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Winter 2026

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 879
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): Risk Assessment and Regulatory Systems Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 4–5 hours Tutorial 1–2 hours
- 2.6 Term in which it will be offered: T2
- 2.7 Prerequisite: Students must have completed TOX 870.3 and TOX 871.3 (or equivalents) or have permission from the instructor.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): This course will introduce students to major global regulatory frameworks that play a key role in how risk assessments are conducted to support regulatory and policy related decision making. The focus will be on North American and European frameworks, but there will be some exposure to other regulatory frameworks used elsewhere in the world. Students will also have the opportunity to explore such frameworks in more detail themselves in the case studies they will be working on as part of their assignments.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

By the completion of this course, students will be expected to:

- Understand how risk assessments of new chemicals are performed in Canada, EU, US and globally prior to their registration and use, with a focus on the prospective risk assessment approaches and regulations.
- Evaluate how national and international regulatory bodies approach prospective risk assessment of chemicals (e.g., pesticides) with examples from Canada and the EU.
- Describe how risk assessments of contaminated sites in Canada are performed following both federal and provincial guidelines.
- Perform a screening level retrospective risk assessment of a contaminated site and/or a prospective pre-market notification assessment of a chemical.
- Assess how a Safe and Sustainable by Design (SSbD) life cycle impact assessment (LCiA) can be conducted for candidate molecules at different levels of the innovation within companies.
- The students will develop an understanding of the risk assessment requirements relative to the risk management context for specific case studies.
- Appreciate the role of risk assessment in the support of risk management decision making.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? **no** If so, were these departments consulted? (Include correspondence) **n/a** Were any other departments asked to review or comment on the proposal? **no**

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
 - 6.2 Courses for which this course will be a prerequisite? **none**
 - 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

Week	Lecture (L) Tutorial (T)	Торіс	Readings or Activity
1	L1	Asynchronous: Introduction to regulatory risk assessment: A global perspective	
	L2	Asynchronous: Risk assessment of new chemicals in (1) Canada and (2) the EU; principles of prospective vs. retrospective risk assessment	
	T1	Synchronous: Discussion of course outline and course expectation, Q&A. Pros and cons of prospective risk assessment approaches	

(Weekly outline of lectures or include a draft of the course information sheet.)

	L3	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in Canada – Part 1 (act and regulations)	Quiz 1
2	L1	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in Canada – Part 2 (test & data requirements)	
	L2	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in Canada – Part 3 (test & data requirements)	
	T1	Synchronous: Strengths and Weaknesses of the Canadian	
		approach to pesticide risk assessment; Case study	
	L3	Asynchronous: Risk assessment of new chemicals in the EU. The	
		EU REACH regulation (EC 1907/2006)	Quiz 2
3	L1	Asynchronous: Risk assessment of pesticides for registration, sale and use in EU member states - <i>acts and regulations</i> selected	
		cases	
	12	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in EU member states – <i>test & data requirements</i> .	
		selected cases	
	L3	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in the EU – <i>risk characterization</i> , selected cases	
	T1	Synchronous: Strengths and weaknesses of the European	
		approach to pesticide risk assessment; Case study	Presentation 1
4	L1	Asynchronous: Analysis of extrapolation uncertainties in	
		assessments and the role of assessment factors – landscape and	
		biodiversity protection	
	L2	Asynchronous: Retrospective risk assessment of contaminated	
		sites in Canada: A review of approaches	
	L3	Asynchronous: Zero Pollution and a Toxic Free EU – review of the	
		new EU policy	
	T1	Synchronous: Strengths and Weaknesses of the EU approach to	
		pesticide risk assessment	Quiz 3
5	L1	Asynchronous: Introduction to Product Environmental	
		Footprinting (PEF) and LCiA methods with a focus on aquatic	
		toxicity	
	L2	Asynchronous: Ecological risk assessment of contaminated sites	
		in Canada – Part 1	
	L3	Asynchronous: Ecological risk assessment of contaminated sites	
		in Canada – Part 2	
	T1	Discussion of data and test requirements for contaminated sites	
		assessment	
6	L1	Asynchronous: Safe and Sustainable by Design – case studies and	
		examples of data requirements and generation	
	L2	Asynchronous: The future role of new approach methodologies	
		(NAMIS) in regulatory assessments	
	L3	Asynchronous: Decision making and policy making processes –	
		actors, politics, direct and indirect costs	
	T1	Synchronous: Student case presentations	Presentation 2

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.



9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded? N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Quiz 1	20%
Quiz 2	20%
Peer Presentation and Q&A 1	20%
- Instructor (10%)	
- Peer (10%)	
Quiz 3	20%
Peer Presentation and Q&A 2	20%
- Instructor (10%)	
- Peers (10%)	
Total	100%

9.2 Is the course exempt from the final examination? yes

10. Required text

Include a bibliography for the course.

Canadian Pest Control Products Act PCPA): <u>https://laws-lois.justice.gc.ca/eng/acts/p-9.01/</u>

Fact Sheet – Regulation of Pesticides in Canada: <u>https://www.oag-bvg.gc.ca/internet/docs/fs_pestreg-e.pdf</u>

Canadian contaminated sites program: https://ceaa-acee.gc.ca/050/documents/49446/49446F.pdf

REACH: https://echa.europa.eu/regulations/reach/understanding-reach

TSCA: https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act

CSS: https://environment.ec.europa.eu/strategy/chemicals-strategy_en

11. Resources

- 11.1 Proposed instructor: Karsten Liber (USask), Hans Sanderson (Aarhus), Anders Branth Pedersen (Aarhus), John Jensen (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable

Program Proposal: Appendices—FINAL revised 15 February 2024

PRA Practicum

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

- 2.2 For the College of Arts and Science only: To which program type does this course belong?
 - FNAR Fine Arts
 - HUM Humanities
 - SCIE Science
 - SOCS Social Science
 - ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course TOX 870, TOX 871
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course none
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

• If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.

• If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 879.3: Risk Assessment and Regulatory Systems SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Winter 2026]

<u>Course Instructors:</u> USask: Karsten Liber (lead) (SENS & TOX); Markus Hecker (guest lecture) Aarhus U: Hans Sanderson; Anders Branth Pedersen (Department of Environmental Science); John Jensen (Ecoscience)

Email: Addresses karsten.liber@usask,ca; hasa@envs.au.dk

Course times: Jan. - Feb.; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites</u>: Students must have completed TOX 870.3 and TOX 871.3 (or equivalents) or have permission from the instructor.

Course Description

This course will introduce students to major global regulatory frameworks that play a key role in how risk assessments are conducted to support regulatory and policy related decision making. The focus will be on North American and European frameworks, but there will be some exposure to other regulatory frameworks used elsewhere in the world. Students will also have the opportunity to explore such frameworks in more detail themselves in the case studies they will be working on as part of their assignments.

Learning Outcomes

By the completion of this course, students will be expected to:

• Understand how risk assessments of new chemicals are performed in Canada, EU, US and globally prior to their registration and use, with a focus on the prospective risk assessment approaches and regulations.

- Evaluate how national and international regulatory bodies approach prospective risk assessment of chemicals (e.g., pesticides) with examples from Canada and the EU.
- Describe how risk assessments of contaminated sites in Canada are performed following both federal and provincial guidelines.
- Perform a screening level retrospective risk assessment of a contaminated site and/or a prospective premarket notification assessment of a chemical.
- Assess how a Safe and Sustainable by Design (SSbD) life cycle impact assessment (LCiA) can be conducted for candidate molecules at different levels of the innovation within companies.
- The students will develop an understanding of the risk assessment requirements relative to the risk management context for specific case studies.
- Appreciate the role of risk assessment in the support of risk management decision making.

Detailed course subject description

Class Overview:

This course is delivered over 6 weeks with approx. 36 contact hours (i.e., 6 hours per week) scheduled in three 1to 2-hour lectures and one 1- to 2-hr tutorial sessions per week. The workload outside of scheduled class time (e.g., for further readings and completing assignments) is estimated at approx. 6-8 hours per week.

This course will introduce students to major global regulatory frameworks that govern how most risk assessments are conducted. The course will include examples of both prospective and retrospective regulatory risk assessment approaches (i.e., of market inclusion criteria and contaminated sites). For the Canadian context, that will include the risk assessment of pesticides for sale and use in Canada, and the federal guidance for risk assessment of contaminated sites. Similarly, we will review the processes in the EU and US but also in other regions (e.g., Asia) depending upon the class demographic and as needed.

The class will be taught in an open format using classic (e.g., lectures by instructors and guest speakers) and interactive (group discussions; student assignments) elements. The lecture material will be mainly delivered as pre-recorded, asynchronous lectures that students can watch at their own pace, supplemented with synchronous tutorial-style discussions *via* Zoom. Participation in the synchronous elements is optional, but strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join live through the Learning Management System (Canvas). Learner success will be evaluated using a set of graded quizzes and written assignments in the topic clusters of the course. Specific examples and case studies will be covered. Both the presentations and participation in the Q&A period will be graded. The final assessment on the last day of class will consist of an open book exam that will be administered through the Learning Management System (Canvas).

Week	Lecture (L) Tutorial (T)	Торіс	Readings or Activity
1	L1	Asynchronous: Introduction to regulatory risk assessment: A global perspective	
	L2	Asynchronous: Risk assessment of new chemicals in (1) Canada and (2) the EU; principles of prospective vs. retrospective risk assessment	

Class Schedule:

	T1	Synchronous: Discussion of course outline and course	
		expectation, Q&A. Pros and cons of prospective risk assessment	
		approaches	
	L3	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in Canada – Part 1 (act and regulations)	Quiz 1
2	L1	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in Canada – Part 2 (test & data requirements)	
	L2	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in Canada – Part 3 (test & data requirements)	
	T1	Synchronous: Strengths and Weaknesses of the Canadian	
		approach to pesticide risk assessment; Case study	
	L3	Asynchronous: Risk assessment of new chemicals in the EU. The	
		EU REACH regulation (EC 1907/2006)	Quiz 2
3	L1	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in EU member states - <i>acts and regulations</i> , selected	
		cases	
	L2	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in EU member states – <i>test & data requirements</i> , selected	
		cases	
	L3	Asynchronous: Risk assessment of pesticides for registration, sale	
		and use in the EU – <i>risk characterization</i> , selected cases	
	T1	Synchronous: Strengths and weaknesses of the European	
		approach to pesticide risk assessment; Case study	Presentation 1
4	L1	Asynchronous: Analysis of extrapolation uncertainties in	
		assessments and the role of assessment factors – landscape and	
		biodiversity protection	
	L2	Asynchronous: Retrospective risk assessment of contaminated	
		sites in Canada: A review of approaches	
	L3	Asynchronous: Zero Pollution and a Toxic Free EU – review of the	
		new EU policy	
	T1	Synchronous: Strengths and Weaknesses of the EU approach to	
		pesticide risk assessment	Quiz 3
5	L1	Asynchronous: Introduction to Product Environmental	
		Footprinting (PEF) and LCiA methods with a focus on aquatic	
		toxicity	
	L2	Asynchronous: Ecological risk assessment of contaminated sites in	
		Canada – Part 1	
	L3	Asynchronous: Ecological risk assessment of contaminated sites in	
		Canada – Part 2	
	T1	Discussion of data and test requirements for contaminated sites	
		assessment	
6	L1	Asynchronous: Safe and Sustainable by Design – case studies and	
		examples of data requirements and generation	
	L2	Asynchronous: The future role of new approach methodologies	
		(NAMs) in regulatory assessments	
	L3	Asynchronous: Decision making and policy making processes –	
		actors, politics, direct and indirect costs	
	T1	Synchronous: Student case presentations	Presentation 2

Detailed Assessment of Students & Required Activities

Participation; assignments; quizzes; presentations. Class prepares projects on one or more of the topics above they present and discuss - at the end they make one report in groups and have one designated opponent group who peer-reviews the work and vice versa. In the end they present their findings to class.

Grading Scheme:

Assessment	Value
Quiz 1	20%
Quiz 2	20%
Peer Presentation and Q&A 1	20%
- Instructor (10%)	
- Peer (10%)	
Quiz 3	20%
Peer Presentation and Q&A 2	20%
- Instructor (10%)	
- Peers (10%)	
Total	100%

Evaluation Components:

Quiz 1: Introduction to Risk Assessment

Value: 20% of final grade

Due Date: See Course Schedule

Type: Assessment of learning success of materials delivered during Week 1.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Quiz 2: Risk Assessment of Pesticides

Value: 20% of final grade

Due Date: See Course Schedule

Type:Assessment of learning success of materials delivered during Weeks 1 and 2.Description:Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multipledropdowns, matching, or numerical answer questions. The quiz will be administered through the LearningManagement System (e.g., Canvas).

Peer Presentations and Q&A 1: Regulatory Systems for Pesticide registration.

Value: 20% of final grade (10% from instructor & 10% from peers)

Due Date: See Course Schedule

Type: 15-minute group presentations (3–4 students) and participation in Q&A

Description: Students (in groups of 3–4) will prepare and deliver recorded 15-minute group presentations that will be shared with their classmates through an online repository. This presentation will compare and contrast regulatory systems for pesticide registration across different jurisdictions, regions, units, and/or countries. In addition to the peer presentation, students will be required to participate in a subsequent Q&A (either synchronous *via* Zoom, or asynchronous through a discussion board) period during which they will field questions from their peers. Each student is expected to ask at least two questions during the Q&A sessions.

Quiz 3: Prospective vs Retrospective Risk Assessment

Value:20% of final gradeDue Date:See Course ScheduleType:Assessment of learning success of materials delivered during Weeks 3 and 4.Description:Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multipledropdowns, matching, or numerical answer questions. The quiz will be administered through the LearningManagement System (e.g., Canvas).

Peer Presentations and Q&A 2: Approaches to Regulatory Systems

Value:	20% of final grade (10% from instructor & 10% from peers)	
Due Date:	See Course Schedule	
Type:	15-minute group presentations and participation in Q&A	
Description:	In groups of 3–4, students will prepare, record, and deliver 15-minute group presentations that	
will be shared with their classmates through an online repository. These presentations will focus on contrasting		
North American and EU approaches to regulatory systems. In addition to the peer presentation, students will be		
required to participate in a subsequent Q&A (either synchronous <i>via</i> Zoom, or asynchronous through a		
discussion board) period during which they will field questions from their peers. Each student is expected to ask		
at least two questions during the Q&A sessions.		

Resources:

Canadian Pest Control Products Act PCPA): <u>https://laws-lois.justice.gc.ca/eng/acts/p-9.01/</u>

Fact Sheet – Regulation of Pesticides in Canada: <u>https://www.oag-bvg.gc.ca/internet/docs/fs_pestreg-e.pdf</u>

Canadian contaminated sites program: <u>https://ceaa-acee.gc.ca/050/documents/49446/49446F.pdf</u>

REACH: https://echa.europa.eu/regulations/reach/understanding-reach

TSCA: https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act

CSS: https://environment.ec.europa.eu/strategy/chemicals-strategy_en

[standard back matter materials will be added when the syllabus is formalized]



New Course Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Winter 2026

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 880
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): Sustainable Chemical Risk Characterization for Decision Making

Course Short Title (maximum 30 characters):

- 2.4 Total Hours: Lecture 36
- 2.5 Weekly Hours: Lecture 6
- 2.6 Term in which it will be offered: T2
- 2.7 Prerequisite: Students must have completed TOX 870 and TOX 876 and at least 2 other courses (6 CU) from the Chemical Risk Assessment (MRA) program to enroll in this course or have obtained comparable knowledge through employment or other training.

If there is a prerequisite waiver, who is responsible for signing it? D – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): This course pulls together key material from all previous courses in the Chemical Risk Assessment program and discusses how it is integrated into a final risk characterization. It also covers risk perception, communication and management, and New Approach Methodologies (NAMs) poised to play key roles in future chemical risk assessments and nascent sustainable chemical policies. A final project proposal is also developed.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem

formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

Students shall be able to demonstrate the ability to develop, implement and master risk characterization and a full risk assessment, and appreciate the novel demands and possibilities in the area of risk assessment in the future. They will apply the learnings from the previous courses and develop the proposal for their final project. The course will include introduction to prospective methodologies and assessment methods in a rapidly changing globalized world. By the completion of this course, students will be expected to:

- Understand risk characterization.
- To gain insights into the role, importance, and limitations of New Approach Methodologies, including extrapolation of uncertainties.
- Discuss assessment frameworks, such as DPSIR and others, for organizing assessments for decision making and policy.
- Discuss approval methods for inclusion of chemicals on the market.
- Discuss socio-economic, risk communication and political contexts of risk assessment.
- Understand risk assessment as a discipline that is dynamic and fit for purpose in a global and sustainable development context.
- Apply methods and learning in own final project proposal.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? **no** If so, were these departments consulted? (Include correspondence) **n/a** Were any other departments asked to review or comment on the proposal? **no**

- 6. **Other courses or program affected** (please list course titles as well as numbers)
 - 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program.
 - 6.2 Courses for which this course will be a prerequisite? **TOX 881**
 - 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Торіс	Readings or Activity	Evaluation Due Date
1	Risk characterization –	Recorded lecture: Overview of previous courses with	
	Introduction and key	emphasis on key elements required for risk	
	elements	characterization.	
		Synchronous: Introduction to course and general class	
		discussion (link to Problem Formulation)	

	Risk characterization -	Recorded lecture: Application of the DPSIR model and use	
	Principles and tools	in decision making; hazard quotient vs. probabilistic	
		approaches.	
		Synchronous: Class discussion	Quiz 1
2	Risk perception and risk	Recorded lectures: What is risk perception and how to	
	communication	manage it?	
		Synchronous: Guest speaker – How to communicate risk.	
	Risk management:	Recorded lecture: Decision support policy and legal	
	Context and costs	considerations.	
		Recorded lecture: Cost-effectiveness; cost-benefit; return	
		on investment; risk/risk.	
		Synchronous: Check-in and Q&A	
3	Decision-making analysis	Recorded lecture: Stakeholders, interests, advocacy and	
		decisions.	
		Synchronous: Class discussion	
	Big data analysis and AI	Recorded lecture: Future role of AI in complex	
		assessments.	
		Synchronous: Check-in and Q&A	Quiz 2
4	21st century methods in	Recorded lecture: Novel technological developments.	
	chemical risk assessment	Synchronous: Discission and Q&A	
	New Approach Methods	Recorded lecture: Novel technological developments.	
	(NAMs) and non-animal	Assignment: Use of NAMs in chemical risk assessment	
	alternatives		Assignment
5	Revisions to risk	Recorded lecture: Definition of testable risk hypothesis.	
	assessment methods -	Synchronous: Check-in discussion	
	Silver Book 2.0.		
	Tools review	Recorded lecture: CTD and other big data models and	Proposal
		tools; novel QSARs.	outline &
		Synchronous: Check-in; progress on proposals	presentation
6	Sustainable futures?	Recorded lecture: Chemical Strategy for Sustainability	
		(EU); New TSCA.	
		Synchronous: Class discussion	
	Proposal for final project	Asynchronous: Development and posting of proposals for	Proposal
	(site-specific	final project; peer-review.	assessment
	retrospective, or	Synchronous: Class presentations of project proposals	Team
	compound specific	and Q&A	presentation
	prospective)		

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.

10-50

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50-90
90-130
130+

9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded? N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Quiz 1 & 2 (2 x 10%)	20%
Assignment (NAMs)	20%
Present outline of project	20%
 Instructor evaluation (10%) 	
- Peer evaluation (10%)	
Proposal presentation of final project	20%
 Instructor evaluation (10%) 	
- Peer evaluation (10%)	
Project proposal (written)	20%
Total	100%

9.2 Is the course exempt from the final examination? no

10. Required text

Include a bibliography for the course.

Resources from e.g.: <u>https://tox21.gov/tox21-library/</u>

https://risk21.org/

https://www.epa.gov/chemical-research/toxicology-testing-21st-century-tox21

https://nap.nationalacademies.org/catalog/11970/toxicity-testing-in-the-21st-century-a-vision-and-a

https://single-market-economy.ec.europa.eu/sectors/chemicals/transition-pathway_en

DPSIR method (<u>https://www.eea.europa.eu/publications/92-9167-059-6-sum/page002.html</u>) and DPSEEA method (<u>http://www.integrated-assessment.eu/eu/guidebook/dpseea_framework.html</u>

11. Resources

- 11.1 Proposed instructor: Markus Hecker (USask), Hans Sanderson (Aarhus), Peter Borgen Sorensen (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

- 2.2 For the College of Arts and Science only: To which program type does this course belong?
 - FNAR Fine Arts
 - HUM Humanities
 - SCIE Science
 - SOCS Social Science
 - ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course TOX 870 and TOX 876 and at least two other courses (6 cu) of course work in the MRA
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course **none**
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

*Please note: SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 880.3: Sustainable Chemical Risk Characterization for Decision Making SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Winter 2026]

<u>Course Instructors:</u> USask: Markus Hecker (lead) (SENS & TOX); Guest lectures: Karsten Liber Aarhus U: Hans Sanderson, Peter Borgen Sorensen (Department of Environmental Science)

Email: Addresses karsten.liber@usask,ca; hasa@envs.au.dk

Course times: Mar-Apr; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites</u>: Students must have completed TOX 870 and TOX 876 and at least 2 other courses (6 CU) from the Chemical Risk Assessment (MRA) program to enroll in this course or have obtained comparable knowledge through employment or other training.

Course Description:

This course pulls together key material from all previous courses in the Chemical Risk Assessment program and discusses how it is integrated into a final risk characterization. It also covers risk perception, communication and management, and New Approach Methodologies (NAMs) poised to play key roles in future chemical risk assessments and nascent sustainable chemical policies. A final project proposal is also developed.

Learning Outcomes:

Students shall be able to demonstrate the ability to develop, implement and master risk characterization and a full risk assessment, and appreciate the novel demands and possibilities in the area of risk assessment in the future. They will apply the learnings from the previous courses and develop the proposal for their final project. The course will include introduction to prospective methodologies and assessment methods in a rapidly changing globalized world. By the completion of this course, students will be expected to:

- Understand risk characterization.
- To gain insights into the role, importance, and limitations of New Approach Methodologies, including extrapolation of uncertainties.
- Discuss assessment frameworks, such as DPSIR and others, for organizing assessments for decision making and policy.
- Discuss approval methods for inclusion of chemicals on the market.
- Discuss socio-economic, risk communication and political contexts of risk assessment.
- Understand risk assessment as a discipline that is dynamic and fit for purpose in a global and sustainable development context.

• Apply methods and learning in own final project proposal.

Class Overview:

This course will run over 6 weeks with approx. 36 contact hours (i.e., 6 hours per week) scheduled in 3-hour sessions. The workload outside of scheduled class time (e.g., for further readings, quizzes, and completing assignments) is estimated to be approx. 8 hours per week.

The material will be mainly delivered as pre-recorded asynchronous lectures that students can watch at their own pace, and synchronous seminar-style discussions *via* Zoom. Participation in these synchronous elements is optional but strongly recommended. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join through the Learning Management System (e.g., Canvas).

Learner success will be evaluated using a set of graded quizzes. Specific examples and case studies will be covered in a flipped classroom format (i.e., each student will prepare a recorded presentation to their peers that will be uploaded to an online repository, and a subsequent Q&A period that can be either completed synchronously *via* Zoom or asynchronously using a discussion board). Both the presentations and participation in the Q&A period will be graded. The final assessment will consist of preparation and presentation of a proposal for their final project that will be the focus of the final course in the MRA program.

Week	Торіс	Readings or Activity	Evaluation Due Date
1	Risk characterization –	Recorded lecture: Overview of previous courses with	
	Introduction and key	emphasis on key elements required for risk characterization.	
	elements	Synchronous: Introduction to course and general class	
		discussion (link to Problem Formulation)	
	Risk characterization -	Recorded lecture: Application of the DPSIR model and use in	
	Principles and tools	decision making; hazard quotient vs. probabilistic	
		approaches.	
		Synchronous: Class discussion	Quiz 1
2	Risk perception and	Recorded lectures: What is risk perception and how to	
	risk communication	manage it?	
		Synchronous: Guest speaker – How to communicate risk.	
	Risk management:	Recorded lecture: Decision support policy and legal	
	Context and costs	considerations.	
		Recorded lecture: Cost-effectiveness; cost-benefit; return on	
		investment; risk/risk.	
		Synchronous: Check-in and Q&A	
3	Decision-making	Recorded lecture: Stakeholders, interests, advocacy and	
	analysis	decisions.	
		Synchronous: Class discussion	
	Big data analysis and	Recorded lecture: Future role of AI in complex assessments.	
	AI	Synchronous: Check-in and Q&A	Quiz 2

Class Schedule:

4	21st century methods	Recorded lecture: Novel technological developments.	
	in chemical risk	Synchronous: Discission and Q&A	
	assessment		
	New Approach	Recorded lecture: Novel technological developments.	
	Methods (NAMs) and	Assignment: Use of NAMs in chemical risk assessment	Assignment
	non-animal		
	alternatives		
5	Revisions to risk	Recorded lecture: Definition of testable risk hypothesis.	
	assessment methods -	Synchronous: Check-in discussion	
	Silver Book 2.0.		
	Tools review	Recorded lecture: CTD and other big data models and tools;	Proposal
		novel QSARs.	outline &
		Synchronous: Check-in; progress on proposals	presentation
6	Sustainable futures?	Recorded lecture: Chemical Strategy for Sustainability (EU);	
		New TSCA.	
		Synchronous: Class discussion	
	Proposal for final	Asynchronous: Development and posting of proposals for	Written
	project (site-specific	final project; peer-review.	proposal
	retrospective, or	Synchronous: Class presentations of project proposals and	assessment
	compound specific	Q&A	Team
	prospective)		presentations

Virtual office hours: Available upon request.

Assessment:

Assessment consists of two quizzes, a written assignment, a proposal outline and presentation, and final presentation and evaluation of the final project proposal.

Grading Scheme:

Assessment	Value
Quiz 1 & 2 (2 x 10%)	20%
Assignment (NAMs)	20%
Present outline of project	20%
- Instructor evaluation (10%)	
- Peer evaluation (10%)	
Proposal presentation of final project	20%
 Instructor evaluation (10%) 	
- Peer evaluation (10%)	
Project proposal (written)	20%
Total	100%

Quiz 1: Risk Characterization

Value:	10% of final grade
Due Date:	See Course Schedule
Type:	Assessment of learning success of materials delivered during Week 1.

Description: Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multiple dropdowns, matching, or numerical answer questions. The quiz will be administered through the Learning Management System (e.g., Canvas).

Quiz 2: Risk Perception and Management

Value:10% of final gradeDue Date:See Course ScheduleType:Assessment of learning success of materials delivered during Weeks 2.Description:Graded quiz consisting of up to 20 multiple-choice, true/false, fill-in-the-blank, multipledropdowns, matching, or numerical answer questions. The quiz will be administered through the LearningManagement System (e.g., Canvas).

Assignment: New Approach Methods

Value: 20% of final grade

Due Date: See Course Schedule

Type: written group assignment 10–15 pages

Description: Groups of 3–4 students will assess and evaluate how and where new approach methods could be incorporated into chemical risk assessment. The assignment will focus on discussing novel new, molecular techniques that have not been accepted yet because they are new. Students should consider and investigate where it would be appropriate to incorporate NAMs instead of convention methods.

Presentation 1: Proposal Outline

Value:20% of final grade 20% of final grade (10% from instructor & 10% from peers)Due Date:See Course Schedule

Type:10-minute peer presentations of proposal outline, as well as participation in Q&ADescription:Each student group will prepare, deliver, and record a 10-minute presentation that will beshared with their classmates through an online repository. This presentation will outline their project proposalsand should include the following elements— problem formulation, methods, and data sources.

Presentation 2: Project Proposal

Value: 20% of final grade (10% from instructor & 10% from peers)

Due Date: See Course Schedule

Type: 15-minute peer presentations of project proposal and participation in Q&A

Description: Each student group will prepare, deliver, and record a 15-minute presentation that will be shared with their classmates through an online repository. In this presentation, student groups will present their completed project proposals. In addition to the peer presentation, students will be required to participate in a class discussion (either synchronous via Zoom, or asynchronous through a discussion board) period during which they will field questions from their peers. Each student is expected to ask at least two questions during the Q&A sessions.

Final Written Assignment: Project Proposal

Value: 20% of final grade

Due Date: See Course Schedule

Type: Final written paper of the project proposal

Description: Each student group is required to submit a single 10–15-page proposal document that describes their complete plan for the final risk assessment case study they will undertake in the final course (TOX 881) and follows the design and structural requirements outlined in the detailed descriptions of this assignment.

Resources:

Resources from e.g.: <u>https://tox21.gov/tox21-library/</u>

https://risk21.org/

https://www.epa.gov/chemical-research/toxicology-testing-21st-century-tox21

https://nap.nationalacademies.org/catalog/11970/toxicity-testing-in-the-21st-century-a-vision-and-a

https://single-market-economy.ec.europa.eu/sectors/chemicals/transition-pathway_en

DPSIR method (<u>https://www.eea.europa.eu/publications/92-9167-059-6-sum/page002.html</u>) and DPSEEA method (<u>http://www.integrated-assessment.eu/eu/guidebook/dpseea_framework.html</u>)

[standard back matter will be added after the syllabus is formalized]



UNIVERSITY OF SASKATCHEWAN Proposal & Creation Form

1. Approval by Department Head or Dean

- 1.1 College or School with academic authority: School of Environment and Sustainability
- 1.2 Department with academic authority: Toxicology Centre
- 1.3 Term from which the course is effective: Winter 2026

2. Information required for the Catalogue

- 2.1 Label & Number of course: TOX 881
- 2.2 Academic credit units: 3 credit units
- 2.3 Course Long Title (maximum 100 characters): Chemical Risk Assessment Project Course Short Title (maximum 30 characters):
- 2.4 Total Hours: Lecture 18 contact hours
- 2.5 Weekly Hours: Lecture 2–3 hours
- 2.6 Term in which it will be offered: T2/T3
- 2.7 Prerequisite: This course in only open to students who have completed TOX 880.3 and at least five other courses (18 cu) in the MRA program.

If there is a prerequisite waiver, who is responsible for signing it? **D** – Instructor/Dept Approval

- 2.8 Catalogue description (150 words or less): This course consists entirely of a single, complete risk assessment performed by students working in small groups. The assessment can be either prospective or retrospective in nature but must be based on a real situation. Each group will be paired with another group, and they shall provide constructive feedback to each other on drafts during the writing process.
- 2.9 Do you allow this course to be repeated for credit? no
- 3. Please list rationale for introducing this course: The goal of the Master of Chemical Risk Assessment program is to create competent risk assessment specialists that can directly enter the job market and immediately perform complete risk assessments of chemicals and contaminated sites. This comprehensive program includes courses that thoroughly cover all internationally recognized steps taken when undertaking a chemical or site-specific risk assessment from the initial problem formulation to complex exposure and hazard characterization, to practical tools and skills needed to perform the risk analysis, to the final step of characterizing and quantifying the risk. These steps and processes are needed and outlined in all international risk assessment guidance documents and protocols, including those used in Canada, the United States, and the European Union.

4. Please list the learning objectives for this course:

The students shall be able to demonstrate the ability to develop, implement and master a full risk assessment in written format. They will apply the learnings from all previous courses and integrate aspects into their individual project. By the completion of this course, students will be expected to:

- Integrate and apply all information learned in the MRA program into a complete and novel risk assessment.
- Present and defend their risk assessment against opponent groups.

5. Impact of this course

Are the programs of other departments or Colleges affected by this course? **no** If so, were these departments consulted? (Include correspondence) **n/a** Were any other departments asked to review or comment on the proposal? **no**

6. **Other courses or program affected** (please list course titles as well as numbers)

- 6.1 Courses to be deleted? No courses will be deleted b/c of adding this course. However, some TOX courses may be offered less frequently to make room for the additional courses in the new Master of Chemical Risk Assessment (MRA) program
- 6.2 Courses for which this course will be a prerequisite? none
- 6.3 Is this course to be required by your majors, or by majors in another program? This course will be a required course for the new MRA.

7. Course outline

(Weekly outline of lectures or include a draft of the course information sheet.)

Week	Module or Topic	Readings or Activity	Evaluation Due Date
1	Project work	Synchronous: Class discussion of final project format and	
		assessment	
	Project work	Synchronous: Drop-in, Q&A	
2	Project work		
	Project work	Synchronous: Drop-in, Q&A	
3	Project work		
	Project work	Asynchronous: Uploaded presentation on group progress to	Graded
		date	presentations
		Synchronous: Q&A on presentations by class members and	
		instructors	Participation
4	Project work		
	Project work	Synchronous: Drop-in, Q&A	
5	Project work		
	Project work	Synchronous: Drop-in, Q&A	
6	Project	Asynchronous: Uploaded presentation of group final report	Graded
	presentation		presentations
	Project discussion	Synchronous: Discussion and Q&A of final project	Graded Q&A
	and evaluation	presentations by class members and instructors	Participation

8. Enrolment

8.1 What is the maximum enrolment number for this course? And from which colleges? **35–40** students—Toxicology and the School of Environment and Sustainability

8.2 For room bookings, please indicate the maximum estimated room size required for this course: **none**, **this course will be delivered online only for the new MRA program which will be an online program**.



9. Student evaluation

Give approximate weighting assigned to each indicator (assignments, laboratory work, mid-term test, final examination, essays or projects, etc.)

9.1 How should this course be graded? N – Numeric/Percentage (Grade options for instructor: grade of 0% to 100%, IP in Progress)

Grading Scheme:

Assessment	Value
Presentation 1: Progress Report	20%
Response to Q&A	10%
- Instructor (5%)	
- Peers (5%)	
Presentation 2: Final Project	25%
Response to Q&A	15%
- Instructor (10%)	
- Peers (5%)	
Final Project Report	30%
Total	100%

9.2 Is the course exempt from the final examination? yes

10. Required text

Include a bibliography for the course.

All materials from previous courses in the MRA program.

11. Resources

- 11.1 Proposed instructor: Karsten Liber, Kerstin Bluhm, and sessional (USask), Hans Sanderson (Aarhus), Peter Borgen Sorensen (Aarhus), John Jensen (Aarhus)
- 11.2 How does the department plan to handle the additional teaching or administrative workload? Some Toxicology graduate courses may be offered less frequently (maybe every 3 years) to accommodate the addition of the new MRA courses.

The teaching load of instructors will mostly remain static, generally with slight shifts in teaching assignments in the courses, leading to consistency and better alignment with instructors' areas of expertise. Some USask faculty (Liber and Brinkmann) may voluntarily take on additional teaching responsibility because of the strategic nature of the proposed program to the future of the Toxicology Centre and Toxicology Program.

- 11.3 Are sufficient library or other research resources available for this course? Yes. No additional library or research resources will be needed.
- 11.4 Are any additional resources required (library, audio-visual, technology, etc.)? no

12. Tuition

- 12.1 Will this course attract tuition charges? If so, how much? (use <u>tuition category</u>) yes, the course will be assessed on a per credit unit basis. TC31
- 12.2 Does this course require non-standard fees, such as materials or excursion fees? If so, please include an approved "Application for New Fee or Fee Change Form" no http://www.usask.ca/sesd/info-for-instructors/program-course-preparation.php#course-fees

Detailed Course Information

1. Schedule Types

Please choose the Schedule Types that can be used for sections that fall under this course:

Code	Description	Code	Description
CL	Clinical	PRB	Problem Session
COO	Coop Class	RDG	Reading Class
FLD	Field Trip	RES	Research
ICR	Internet Chat Relay	ROS	Roster (Dent Only)
IHP	Internet Help	SEM	Seminar
IN1	Internship - Education	SSI	Supervised Self Instruction
IN2	Internship - CMPT & EPIP	STU	Studio
IN3	Internship - General	SUP	Teacher Supervision
LAB	Laboratory	TUT	Tutorial
LC	Lecture/Clinical (Dent Only)	WEB	Web Based Class
LEC	Lecture	ХСН	Exchange Program
LL	Lecture/Laboratory	XGN	Ghost Schedule Type Not Applicable
MM	Multimode	XHS	High School Class
PCL	Pre-Clinical (Dent Only)	XNA	Schedule Type Not Applicable
PRA	Practicum	XNC	No Academic Credit

2. Course Attributes

Please highlight the attributes that should be attached to the course (they will apply to all sections):

2.1 NOAC No Academic Credit

0 Credit Unit courses that possess "deemed" CUs (Called Operational Credit Units). NOAC causes the system to roll 0 academic credit units to academic history.

- 2.2 For the College of Arts and Science only: To which program type does this course belong?
 - FNAR Fine Arts
 - HUM Humanities
 - SCIE Science
 - SOCS Social Science
 - ARNP No Program Type (Arts and Science)

Does this course satisfy one of the official college requirements:

ELWR – English Language Writing Requirement

ILRQ – Indigenous Learning Requirement

QRRQ – Quantitative Reasoning Requirement

3. Registration Information (Note: multi-term courses cannot be automated as corequisites)

- 3.1 Permission Required: yes
- 3.2 Restriction(s): course only open to students in a specific college, program/degree, major, year in program open to School of Environment and Sustainability (SENS) and Toxicology students, and other students by permission.
- 3.3 Prerequisite(s): course(s) that must be completed prior to the start of this course **TOX 880.3 and 18** cu of other course work in the MRA
- 3.4 Prerequisite(s) or Corequisite(s): course(s) that can be completed prior to or taken at the same time as this course **none**
- 3.5 Corequisite(s): course(s) that must be taken at the same time as this course **none**
- 3.6 Notes: recommended courses, repeat restrictions/content overlap, other additional information

4. List Equivalent Course(s) here:

An equivalent course can be used in place of the course for which this form is being completed, specifically for the purposes of prerequisite and degree audit checking. Credit will be given for only one of the equivalent courses.

4.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be equivalent: **no**

*Please note: If the equivalent courses carry an UNEQUAL number of credit units, DegreeWorks will automatically enforce the following, unless otherwise stated:

- If a 3 credit unit course is considered to be equivalent to a 6 credit unit course, it will fulfill the 6 credit unit requirement and the student will not have to complete another 3 credit units toward the overall number of required credit units for the program.
- If a 6 credit unit course is considered to be equivalent to a 3 credit unit course, ALL 6 of the credit units may be used to fulfill the 3 credit unit requirement.

5. List Mutually-Exclusive Course(s) here:

Mutually exclusive courses have similar content such that students cannot receive credit for both.

5.1 If this is a recently-repurposed course number, please list the courses that are no longer considered to be mutually exclusive: n/a

***Please note:** SiRIUS cannot enforce a situation where the exclusion goes only one way.

6. Additional Notes:

TOX 881.3: Chemical Risk Assessment Project SYLLABUS

<u>School of Environment and Sustainability</u> (and Toxicology Centre) [Winter/Spring 2026]

Course Instructors:

USask: Karsten Liber, Kerstin Bluhm, and sessional (SENS & TOX)); Guest participation by many others. Aarhus U: Hans Sanderson, Peter Borgen Sorensen, John Jensen (Department of Environmental Science)

Email: Addresses Karsten.liber@usask.ca; hasa@envs.au.dk

Course times: Apr-May; days and times TBD

Course notes: See course website (Canvas Link)

<u>Prerequisites</u>: This course in only open to students who have completed TOX 880.3 and at least five other courses (18 cu) in the MRA program.

Course Description:

This course consists entirely of a single, complete risk assessment performed by students working in small groups. The assessment can be either prospective or retrospective in nature but must be based on a real situation. Each group will be paired with another group, and they shall provide constructive feedback to each other on drafts during the writing process.

Learning Outcomes:

The students shall be able to demonstrate the ability to develop, implement and master a full risk assessment in written format. They will apply the learnings from all previous courses and integrate aspects into their individual project. By the completion of this course, students will be expected to:

- Integrate and apply all information learned in the MRA program into a complete and novel risk assessment.
- Present and defend their risk assessment against opponent groups.

Class Overview:

This course will run over 6 weeks, with approx. 12–18 contact hours (i.e., 2–3 hours per week). The workload outside of scheduled class time (e.g., for further readings, working on projects and preparation of presentations the final report) is estimated to be approx. 15 hours per week.

There will be no pre-recorded asynchronous lectures, only synchronous seminar-style discussions *via* Zoom. Pending permission from participating students, synchronous elements will be recorded and made available to those who cannot join through the Learning Management System (e.g., Canvas).

Class Schedule:

Week	Module or Topic	Readings or Activity	Evaluation Due
1	Project work	Synchronous: Class discussion of final project format and	Date
-	TTOJECT WORK	assessment	
	Project work	Synchronous: Drop-in, Q&A	
2	Project work		
	Project work	Synchronous: Drop-in, Q&A	
3	Project work		
	Project work	Asynchronous: Uploaded presentation on group progress to date Synchronous: O&A on presentations by class members and	Graded presentations
		instructors	Participation
4	Project work		
	Project work	Synchronous: Drop-in, Q&A	
5	Project work		
	Project work	Synchronous: Drop-in, Q&A	
6	Project presentation	Asynchronous: Uploaded presentation of group final report	Graded presentations
	Project discussion	Synchronous: Discussion and Q&A of final project presentations	Graded Q&A
	and evaluation	by class members and instructors	Participation
			Final Written
			Report Due

Virtual office hours: available upon request

Assessment:

Participation; assignments; presentations. Students prepare a final project in small teams and have one or more designated opponent groups who peer-reviews the work and vice versa. In the end they present their findings to the class and submit a final project report.

Grading Scheme:

Assessment	Value
Presentation 1: Progress Report	20%
Response to Q&A	10%
- Instructor (5%)	
- Peers (5%)	
Presentation 2: Final Project	25%
Response to Q&A	15%
- Instructor (10%)	
- Peers (5%)	
Final Project Report	30%
Total	100%

Presentation 1: Project Progress

Value: 20% of final grade

Due Date: See Course Schedule

Type: Assessment of project progress by the end of Week 3.

Description: Each student group (3–4 students) will prepare, deliver, and record a 15-minute presentation that will be shared with their classmates through an online repository. This presentation will focus outline and update everyone on the progress they have made to date on their projects.

Q&A Reponses to Progress Presentation

Value: 10% of final grade (5% from instructor & 5% from peers)

Due Date: See Course Schedule

Type: Assessment of groups' responses to Q&A session.

Description: Students will be required to participate in a class discussion (either synchronous via Zoom, or asynchronous through a discussion board) period during which they will field questions from their peers about their project's progress presentation. Each student is expected to ask at least two questions during the Q&A sessions.

FINAL Presentation: Team Project

Value:25% of final gradeDue Date:See Course ScheduleType:Assessment of final project presentationDescription:Each small group will prepare, deliver, and record a final presentation of their project as a team.Presentations should be 15 minutes and will be shared with their classmates through an online repository. The
project presentation will include the entire project outcome of the risk assessment case study.

Q&A Reponses to Final Presentation

Value: 15% of final grade (10% from instructor & 5% from peers)

Due Date: See Course Schedule

Type: Assessment of groups' responses to Q&A session.

Description: Each small group team will be required to participate in a class discussion (either synchronous via Zoom, or asynchronous through a discussion board) period during which they will field questions from their peers about their project's final presentation. Each student is expected to ask at least two questions during the Q&A sessions.

Final Assignment: Final Project Report

Value: 30% of final grade

Due Date: See Course Schedule

Type: Final written paper of the project proposal

Description: Each student group is required to submit a single 20–25-page final written project report document that describes their final risk assessment case study. The report is expected to follow the design and structural requirements outlined in the detailed descriptions of this assignment.

Resources:

All materials from previous courses in the MRA program.

[standard back matter materials will be added after the syllabus is formalized]

Appendix H: Discussion, Participation, and Assessment Rubrics

ORAL PRESENTATION Rubric – For Instructors and Peers

Course/Date _____ Student Presenting _____

Presentation Title

Objectives	Poor, or Failing Performance 0-69%	Satisfactory to Good Performance 70-79%	Very Good to Excellent Performance 80-89% or above	Exceptional 90-100% or above	Comments
 Content and approach Was the required content communicated clearly to the audience? Were the associated concepts explained? 	The overall importance of the work/topic was unclear not known Associated concepts were not explained.	Understanding is superficial as some parts of the explanation appear muddy. At least one part of the presentation remained underdeveloped.	Clearly explained the material showing insight and retaining interest.	Very easy to follow, clearly explaining all materials. Presentation leaves audience with strong understanding of all material, interest, and recognition of importance.	
 Focus, organization and integrative approach Was the presentation ordered logically? Did the presentation flow well? Was there enough time to explain each key element? 	Presentation jumped around. Some parts were too long; other parts were rushed. We are left wondering why this area of work is important or necessary.	Presentation had moments of clarity but also some gaps of logic. Different points in the presentation don't clearly connect.	Presentation was clearly presented and logically organized. There was sufficient time to discuss the material, associated concepts, context and challenges.	Outstanding presentation showing logical progression with great pacing and development of ideas.	
 Engaging style Did the opening capture the audience's attention? Was/were the speaker(s) able to maintain audience interest? Was there sufficient eye contact and vocal range? Did the slides enhance the presentation? Were they clear, legible, and concise? 	The presentation was boring. Presenter made little to no effort to connect with the audience. The slides did not enhance the oral presentation.	Maintained audience interest. Spoke directly to the audience. Clear and legible slides.	Overall, the presenters was/were enthusiastic, creative, confident and persuasive. Slides were informative, impactful, and complementary to the oral presentation.	Captivated the audience with enthusiastic or powerful presentation. Demonstrates exceptional skill via creative, persuasive and confident presentation. Slides were exceptional in visual impact, and content, strategically aligned with oral presentation.	
 Ability to answer questions Was/were the student(s) able to answer questions fully and succinctly? 	Was not able to answer question(s).	Answer to question(s) was vague. Did not demonstrate a high level of knowledge about the subject area, methods of assessment or overall progress.	Mastery of key issues demonstrated by clear and concise answers.	Mastery of key issues demonstrated by clear and concise answers demonstrating strong understanding of question, context, and insight into materials.	
Discussion and Participation Rubric

	Poor, or Failing Performance 0-69%	Satisfactory to Good Performance 70-79%	Very Good to Excellent Performance 80-89% or above	Exceptional 90-100% or above	Comments
Content and knowledge	Responses are weak and inconsistent. Lack of response to peers or replies to questions. Limited thought or effort into responses. Contributions are weak and do not reflect intended learning. Does not appear prepared for class/discussions.	Responses are adequate or good, covering all expected areas. Responsive to questions and to peers, although course learning and research could be better reflected. Often only straightforward information is contributed without substantive discussion, application, or reflection. Content is adequate and reflects adequate knowledge. Generally prepared for class/discussions.	Consistent contributor who is responsive and demonstrates strong knowledge of course learning and application to discussions and activities. Able to stimulate and support discussion by via responses, and well thought out questions and comments. Consistently very good content reflecting excellent knowledge and insights, including interpretation and application (not just repeating class materials). Well prepared for class/discussions. Always thoughtful in contributions.	Shows remarkable knowledge and effort. Able to both lead discussions and participate fostering peer participation. Consistently very high-quality content reflecting strong knowledge and insights. Includes evidence of application of class learning, critical thought, and synthesis. Evidence of outstanding preparation for class/discussions. Always thoughtful in contributions.	
Contributions to discussions via attitude, etiquette, and consideration of colleagues	Does not follow expected etiquette. Responses are sometimes disrespectful of others.	Generally follows expected etiquette. Responses are always respectful.	Consistently respectful, sensitive responses helping to generate a positive and supportive learning environment. Follows expected etiquette. Shows respect and interest in others' ideas and contributions.	Consistently respectful, sensitive responses with exceptional ability to help generate a positive and supportive learning environment. Follows expected etiquette. Shows respect and strong interest in others' ideas and contributions. Supports others by offering suggestions, providing ideas about how to approach materials, etc. Helps bring out the voices of colleagues, particularly those who need support.	
Timeliness, frequency, and ability to meet expectations for participation in multiple activities and discussions	Infrequent participation. Many required activities were not completed or were late.	Sporadic participation. All activities were completed, although some were cursory, and some were late.	Consistently engaged and involved. All required activities were completed in thoughtful manner, and only one was late.	Consistently engaged and very actively involved. All required activities were completed and show high level of effort and organization, with all contributions on time.	

Rubric for Asynchronous Discussion Participation

Name

Asynchronous discussion enhances learning as you share your ideas, perspectives, and experiences with the class. You develop and refine your thoughts through the writing process, plus broaden your classmates' understanding of the course content. Use the following feedback to evaluate the quality of your discussion contributions.

Criteria	Unacceptable 0 Points	Acceptable 1 Point	Good 2 Points	Excellent 3 Points
Frequency	Participates not at all.	Participates 1-2 times on the same day.	Participates 3-4 times but postings not distributed throughout week.	Participates 4-5 times throughout the week.
Follow-Up Postings	Posts no follow-up responses to others.	Posts shallow contribution to discussion (e.g., agrees or disagrees); does not enrich discussion.	Elaborates on an existing posting with further comment or observation.	Demonstrates analysis of others' posts; extends meaningful discussion by building on previous posts.
Content Contribution	Posts information that is off-topic, incorrect, or irrelevant to discussion.	Repeats but does not add substantive information to the discussion.	Posts information that is factually correct; lacks full development of concept or thought.	Posts factually correct, reflective and substantive contribution; advances discussion.
References & Support	Includes no references or supporting experience.	Uses personal experience, but no references to readings or research.	Incorporates some references from literature and personal experience.	Uses references to literature, readings, or personal experience to support comments.

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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?Is an existing degree, diploma, or certificate being renamed?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?

Master of Chemical Risk Assessment [MRA - suggested code] Master ChemicalRiskAssessment - suggested short description Master of Chemical Risk Assessment - long description

[60 character maximum for the long description; 30 character maximum for short description; 6 character maximum for code]

3 What is the credential of this new degree, diploma, or certificate? [Example - D.M.D. = Doctor of Dental Medicine] M.R.A.

4 If you have renamed an existing degree, diploma, or certificate, what is the current name?

N/A

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?

Degree level

6 If this is a new degree level certificate, can a student take it at the same time as pursuing another degree level program?

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?

College of Graduate and Postdoctoral Studies

9 Is there more than one program to fulfill the requirements for this degree, diploma, or certificate? If yes, please list these programs.

N/A

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.

NOTE: Minors and concentrations are listed on transcripts, but not on parchments (this note also applies to options which are built as concentrations in Banner).

Yes	Х	No	
Yes		No	Х



Toxicology [TOX] - currently exists in student systems

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?

Course-based

Section 2: New / Revised Program for Existing or New Degree / Diploma / Certificate Information

1 Is this a new program?

Is an existing program being revised?

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?

Master of Chemical Risk Assessment [MRA - suggested code] Master ChemicalRiskAssessment - suggested short description Master of Chemical Risk Assessment - long description 3 What is the name of this new/revised program? Master of Chemical Risk Assessment [MRA-C-GP - suggested code]

MstrChemicalRiskAsesmnt-Course - suggested description (30 character maximum)

Master of Chemical Risk Assessment [MRA-C-DE-GP - suggested code] - a 2nd one for all students from Denmark (including Aarhus

University) as they will pay domestic tuition but are flagged as international students

MstrChemicalRiskAsesmnt-Course - suggested description (30 character maximum)

4 What other program(s) currently exist that will also meet the requirements for this same degree(s)? N/A

5 What College/Department is the academic authority for this program?

College of Graduate and Postdoctoral Studies [GP] / Department of Toxicology Graduate Program [TOXG]

6 Is this a replacement for a current program?

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?

Course-based

9 If this is a new non-degree or undergraduate level program, what is the expected completion time?

N/A

Yes	Х	No	
Yes		No	Х

Yes No X

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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.



Aarhus University, Denmark

6 What is the jurisdiction for the external partner?

None

NOTE: This degree program will be forged between the University of Saskatchewan and the University of Aarhus through a MOU (Memorandum of Agreement). The agreement is currently in progress.

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.
- 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.
- ${\bf 2}$ 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 <u>and</u> 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?

Voc	Y	Rovicad	
163		Reviseu	

Yes No X Revised

Section 6: New College / School / Center / Department or Renaming of Existing

- 1 Is this a new college, school, center, or department?Is an existing college, school, center, or department being renamed?Is an existing college, school, center, or department being deleted?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.)?

Yes	No	Х
Yes	No	Х
Yes	No	Х

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; existing TOX Toxicology will be used

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?

If NO, please describe.

Classes are delivered online and in a 6 week compressed format

included in the submission package. Has a schedule been provided?

5 Does this program, due to pedagogical reasons, require any special space or type or rooms?

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

1 Will students apply on-line? If not, how will they apply?

Students will apply on-line

2 What term(s) can students be admitted to?

YYYY09 [September]

Intake will be every second year (2024, 2026, 2028, etc.)

3 What is the application deadline for each term(s) students can be admitted to?

July 26, 2024 for 202409 term

4 For undergraduate programs, will students be admitted to one of the approved majors or an undeclared major?

N/A

5 For undergraduate programs, if there's more than one degree proposed (ex. 3Y and 4Y), which program/degree will students be admitted to?

N/A

6 Does this impact enrollment?

Increase and project it will meet it's full enrolment target of 40 students by the third intake (2028).

Success for the first intake would be 12-16 students.

7 How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

Refer to the School of Environment and Sustainability

8 Can classes towards this program be taken at the same time as another program?

Yes

9 What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)

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

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

• Language proficiency requirement: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English.

- a statement of intent
- an up-to-date Curriculum Vitae

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

10 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.)

N/A

11 What are the admission categories and admit types? (IE. High school students and transfer students or one group? Special admission? Aboriginal equity program?)

N/A

12 What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

• A completed online application, the associated application fee, and all supporting application documents including:

o Statement of Intent: Applicants must provide a written Statement of Intent (1000-word maximum) describing why they want to join the program and how their expertise, work and/or volunteer experience make them an ideal candidate for the program.

This statement is a key component in adjudicating each applicant's suitability for the program.

o Letters of reference: Applicants will need to provide three letters of reference—either academic or professional letters. In their letters of reference, all referees should speak to the applicant's ability to succeed in a graduate program.

o Up-to-date Curriculum Vitae: Applicants must include all post-secondary education, work experiences, and any publications, presentations, and awards.

o Transcripts: Full transcripts and a copy of the previous degree diploma must be provided upon application.

13 Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

School of Environment and Sustainability makes the recommendation and College of Graduate and Postdoctoral Studies makes the offer

14 Letter of acceptance - are there any special requirements for communication to newly admitted students?

 No

 15 Will the standard application fee apply?

 Yes

 16 Will all applicants be charged the fee or will current, active students be exempt?

 All applicants will pay the application fee

 17 Is there a tuition deposit required?

 NOTE: Tuition deposits are non-refundable.

 If YES, what is the amount?

 If YES, has it been approved by the Fee Review Committee?

 18 Are international students admissible to this program? If YES, see Section 18 for Tuition and Fees information.

Section 9: Government Loan Information

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?

Yes

Section 10: Convocation Information (only for new degrees)

1 Are there any 'ceremonial consequences' of this proposal (ie. New degree hood, special convocation, etc.)?

Yes - new credential so will need a new hood

2 If YES, has the Office of the University Secretary been notified?

Assume yes

3 When is the first class expected to graduate?

Fall Convocation 2026

With the last class finishing in May 2026 students will not be eligible for Spring Convocation 2026 as the last term a student can complete a class is the YYYY01 term to be eligible for Spring Convocation

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?

202409 [September 2024]

2 Are students required to do anything prior to the above date (in addition to applying for admission)? If YES, what and by what date? Yes No X

Section 12: Registration Information

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; undergraduate

degree level certificates will use numeric year.)

Year in program is not used for graduate students

2 Will students register themselves?

If YES, what priority group should they be in?

As per current set-up

Section 13: Academic History Information

1 Will instructors submit grades through self-serve?

2 Who will approve grades (Department Head, Assistant Dean, etc.)?

As per current set-up

Section 14: T2202 Information (tax form)

1 Should classes count towards T2202s?

Section 15: Awards Information

1 Will terms of reference for existing awards need to be amended?

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

1 Will this program qualify for the Government of Saskatchewan graduate retention (tax) program?

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.



Yes X No

Yes

Yes

Yes X No

No X

No X

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?	_	
	」	, <u> </u>
3 Will there be any courses closed as a result of this termination?	Yes	No
If yes, what courses?	7	
4 Are there currently any students enrolled in the program?] Yes	No
If yes, will they be able to complete the program?	- L -	J []
5 If not, what alternate arrangements are being made for these students?] 7	
6 When do you expect the last student to complete this program?	J	
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

1 How will tuition be assessed?

-	Standard Undergraduate per credit				
	Standard Graduate per credit		I		
	Standard Graduate per term		I		
	Non standard per credit*	X	I		
	Non standard per term*		I		
	Other *				
	Program Based*				
	* See attached documents for further details				
	NOTE 1 : Tuition will mirror the Master of Sustainability programs. These programs charge \$409.00 per credit along with an				
	international differential. With a projected increase the rate will be \$425.36 per credit.				
	NOTE 2: International students will be assessed the existing 2.25 differential.				
	NOTE 3: Students from Denmark including the partner institution. Aarhus University, will be assessed tuition the same as a				
	domestic student.				
	NOTE 4 : If a student either re-takes a class or takes a class(es) part-time they will be assigned the current tuition for the				
	class(es) for the existing term.				
	NOTE 5 : If a student from another program takes a class(es) in this program they will be assessed the current tuition for the				
	class(es).				
2	If fees are per credit, do they conform to existing categories for per credit tuition? If YES, what category or rate?				
-	Yes, TC31]			
3	If program based tuition, how will it be assessed? By credit unit? By term? Elsehow?	1			
	N/A]			
4	Does proponent's proposal contain detailed information regarding requested tuition?	Yes	Х	No	
	If NO, please describe.	L		-	
5	What is the Financial Strategy Office's recommendation regarding tuition assessment? Have they signed off on the tuition/fee				
	budget portion of the proposal?				
	Yes				
6	Will students outside the program be allowed to take the classes?				
	Yes				
7	If YES, what should they be assessed? (This is especially important for program based.)	_			
	Non-standard per credit tuition as per standard tuition for the program				
8	Do standard student fee assessment criteria apply (full-time, part-time, on-campus versus off-campus)?	_			
	Yes]			
9	Do standard cancellation fee rules apply?	_			
	Yes				
10	Are there any additional fees (e.g. materials, excursion)? If yes, see NOTE below.	-			
	No] ,			
11	Are you moving from one tuition code (TC) to another tuition code?	Yes		No	X

11 Are you moving from one tuition code (TC) to another tuition code?

Yes X

No

If YES, from which tuition code to which tuition code?

12 If international students are admissible to the program, will they pay the international tuition differential? If YES, explain the amount.

Yes, they will pay the 2.25 differential

13

If YES, what is the tuition amount for the first 12 months for a full-time international student? This information is required for the Immigration, Refugees and Citizenship Canada [IRCC] form (this form is for students who need to get a visa to study here).

\$17,212.50 (18 credit units x 956.25)

NOTE: Please remember to submit a completed "Application for New Fee or Fee Change Form" for every new course with additional fees.

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Section 19: TLSE - Information Dissemination (internal for TLSE use only)

- 1 Has TLSE, Marketing and Student Recruitment, been informed about this new / revised program?
- 2 Has TLSE, Admissions, been informed about this new / revised program?
- 3 Has TLSE, Student Finance and Awards, been informed about this new / revised program?
- 4 Has TLSE, Transfer Credit, been informed about any new / revised courses?
- 5 Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?
- ${\bf 6}$ Has the Library been informed about this new / revised program?
- 7 Has ISA been informed of the CIP code for new degree / program / major?
- 8 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?
- 9 Has the Convocation Coordinator been notified of a new degree?
- 10 What is the highest level of financial approval required for this submission? Check all that apply.
 - a. None as it has no financial implications

- b. Fee Review Committee
- c. Financial Strategy Office (FSA)
- d. Office of the Provost
- e. Board of Governors
- f. Other

SIGNED

Date:

Registrar (Russell Isinger):

College Representative(s):

IPA Representative(s):

Revised: December 18, 2023





AGENDA ITEM NO: 7.1

UNIVERSITY COUNCIL

NOMINATIONS COMMITTEE

REQUEST FOR DECISION

PRESENTED BY:	Veronika Makarova, Chair, Nominations Committee
DATE OF MEETING:	March 21, 2024
SUBJECT:	Committee Omnibus Nominations
COUNCIL ACTION:	Request for Decision
MOTION:	That Council approve the slate of nominations effective March 21, 2024, as attached.

SUMMARY:

The Nominations Committee continues to review outstanding vacancies on Council committees and other university-level committees – including the panels and committees mandated by the Collective Agreement and search and review committees for senior administrators. We submit nominees to Council for approval.

As such, the nominations before Council today are either due to vacancies on existing committees or to populate newly struck committees. Further information on the specifics of these vacancies is found in the attachment.

In making its recommendations to Council, the Nominations Committee considers volunteers who expressed an interest but also will consider other eligible persons. The Nominations Committee attempts to include individuals who are broadly representative of disciplines of the university and prioritizes equity, diversity, and inclusion in representation.

This slate of nominations is to fill the following vacancies: 1 vacancy on the Research, Scholarly, and Artistic Works Committee of Council; 5 vacancies on the Renewals and Tenure Appeal Committee; 3 vacancies on the Review Committee for the Incumbents of the Associate Vice-President Research, Engagement and the Associate Vice-President, Ethics and Infrastructure; and 1 vacancy on the Search Committee for the Dean of the University Library.

ATTACHMENTS:

List of Committees and Nominees, March 2024

List of Committees and Nominees, March 2024

1. Council Committees

1.1 Research, Scholarly, and Artistic Works Committee

Term until June 30, 2026 Nominee:

• Lisa Birke (Arts and Science)

2. Collective Agreement Committees

2.1 Renewals and Tenure Appeal Committee

Term until June 30, 2024.

Note: Three of the available positions for terms ending in 2024 are for employees and 1 is for a faculty member who holds a senior administrative position. Nominees:

- Catherine Boden (University Library)
- Oleg Dmitriev (Medicine)
- **George Mutwiri** (Public Health)
- Hyunjung Shin (Education)

Term until June 30, 2025

Note: The 1 available position for a term ending in 2025 is for a faculty member who holds a senior administrative position.

Nominee:

• Walter Siqueira (Dentistry)

3. Senior Leader Search and Review Committees

- **3.1 Review Committee for the Incumbents of the Associate Vice-President Research, Engagement and the Associate Vice-President Research, Ethics and Infrastructure** *Term effective immediately and lasts until the work of the committee is completed.* Nominees:
 - Linda Chelico (Medicine)
 - Wanda Martin (Nursing)
 - Ian Stavness (Arts and Science)

3.2 Search Committee for the Dean of the University Library

Term effective immediately and lasts until the work of the committee is complete. Note: University Council is only responsible for appointing 1 member of this committee, and this member must hold a senior administrative position. Nominee:

• Trever Crowe (Agriculture and Bioresources)

PRESIDENT'S REPORT TO COUNCIL March 2024

International Women's Day at USask: Reflecting on history, building the future

The USask community recognizes and celebrates the many contributions of women to our vibrant campus community.

In celebration of International Women's Day, <u>USask published an article featuring just a few of the</u> <u>many women throughout USask's storied history</u> who have led the way in making a difference with their research, academic, community service and athletic accomplishments.

With many more examples to be found in the university's history, the contributions of women to the University of Saskatchewan are vast and deeply connected to the campus community.

The university is committed to creating a safe and supportive space for all who work, learn, and study in its community, and believes equity, diversity, inclusion, and a sense of belonging strengthen the community and enhance excellence, innovation, and creativity in all domains. Read more about USask's Equity, Diversity and Inclusion policy <u>here</u>.

Celebrating USask students and community during Indigenous Achievement Week

Indigenous Achievement Week (IAW) at USask brought together community and celebrated Indigenous students' achievements, academic excellence, resiliency, and leadership.

Soup and Bannock, beading, and film nights - all activities that took place during IAW from March 5-8. Events were hosted throughout the week by USask units and colleges, and all were welcome to attend. One of the highlights of the week was t**he Indigenous Student Achievement Awards Ceremony.** The awards took place Wednesday on March 6 at Marquis Hall, celebrating Indigenous student success. Students were honoured for their academic achievement, community engagement, leadership, research and resiliency. Please follow the link to find a listing of the **<u>2024</u> <u>award winners</u>**

National USask-led satellite science mission receives \$17 million in funding

USask researchers have received \$17 million from the Canada Foundation for Innovation (CFI) fund in support of the HAWC (High-altitude Aerosols, Water vapour and Clouds) mission. This will place USask at the forefront of space innovation and has the potential to revolutionize the way we understand and address climate change.

HAWC is the Canadian contribution to an international, NASA-led four-satellite Atmosphere Observing System (AOS) mission. The climate satellite instruments supported by USask researchers for the AOS mission will provide new data for scientists to better analyze, interpret and understand factors contributing to climate change.

The HAWC team is a Canada-wide group of researchers from 14 universities and numerous industry partners working in collaboration with the Canadian Space Agency (CSA) with funding from the Government of Canada, as well as Environment and Climate Change Canada, and the National Research Council of Canada.

Supported by the CSA, part of the HAWC mission consists of three cutting-edge climate science satellite instruments designed and developed by Canadian universities: the Aerosol Limb Imager (ALI), Spatial Heterodyne Observations of Water (SHOW), and TICFIRE (Thin Ice Cloud in Far Infrared Emissions).

Dr. Adam Bourassa (PhD), a professor in the Department of Physics and Engineering Physics in USask's College of Arts and Science and part of USask's Institute of Space and Atmospheric Studies (ISAS), is the principal investigator leading work on the ALI instrument. USask researcher Dr. Doug Degenstein (PhD) in the Department of Physics and Engineering Physics in USask's College of Arts and Science acts as the principal investigator for the SHOW instrument. Dr. Jean-Pierre Blanchet (PhD) with the Université du Québec à Montréal is the principal investigator of the TICFIRE instrument.

Government of Saskatchewan commits \$15 million to Global Institute for Food Security at USask

On March 11, Saskatchewan Minister of Agriculture David Marit announced a funding commitment of \$15 million over five years to the Global Institute for Food Security (GIFS) at USask.

Founded in 2012 as part of the University of Saskatchewan's world-class agri-science hub, GIFS works with its partners to provide expertise and leadership in the discovery, development and delivery of innovative solutions to produce globally sustainable food. The funding for GIFS will

provide \$3 million each year from 2023-2027 to support its ongoing operations, contributing to Saskatchewan's agriculture sector through work such as supporting crop breeding through sequencing, bioinformatics and data analytics services or technology development that facilitates commercialization of new products.

In January, GIFS released the results of a two-year study providing evidence that Saskatchewan's production of five major field crops has a significantly smaller carbon footprint in comparison to regions that export the same products, including Australia, France, Germany, Italy and the United States. The conclusions of the study have become a fundamental aspect of Saskatchewan's sustainability story and the sector's increasingly important role in global food production.

USask mourns the passing of Dr. Leslie Dubé

USask is remembering the legacy of Saskatoon philanthropist Dr. Leslie (Les) Dubé (LLD'07), who passed away on March 13, 2024, at the age of 91. The Saskatoon philanthropist, who died on March 13, 2024, at the age of 91, was bestowed with an honorary degree in 2007 for his many contributions to USask and to organizations across the province.

Les and Irene Dubé were born and raised in Wynyard, Sask., and married in 1954. Just six years later, they made their first private-sector investment by purchasing land on Eighth Street East in Saskatoon, and, by 1969, they opened a small business office to manage their growing venture.

The Dubés have attributed the continued success of their Concorde Group of Companies to hard work, sound business practices, and a social consciousness. In 1993, they decided to donate money accumulated from their business interests to charities, and, since then, their philanthropic efforts have focused on health, education, religion, and poverty locally and internationally.

The Dubés have supported more than 100 different charities in the province, including a \$10million donation to support the University of Saskatchewan Health Sciences project. In their honour, a state-of-the-art library and a large lecture theatre in the Health Sciences Building were named the Leslie and Irene Dubé Health Sciences Library and the Leslie and Irene Dubé Theatre.

In 2006, Les and Irene Dubé were inducted into the SABEX Hall of Fame and were recognized during the City of Saskatoon Centennial as part of the 100 Who Made a Difference. In 2007, at USask's spring Convocation, they received their honorary Doctor of Laws degrees from the University of Saskatchewan—the highest honour that USask can bestow. In 2008, they received the Saskatchewan Order of Merit, the province's highest honour, and in 2017, in recognition of their philanthropic contributions, they were named **Members of the Order of Canada**.

BE WHAT THE WORLD NEEDS

Provost's Report to Council

March 2024

Hello Council Chair, members, and visitors. Bonjour. tānisi. hān. ëdłanet'e? taanishi. aniin [English. French. Cree. Dakota/Lakota/Nakota. Dene. Michif. Saulteaux]

GENERAL REMARKS

This report provides updates as well as indications of our progress toward achieving the five aspirations outlined in the <u>University Plan 2025</u>.

Indigenous Achievement Week held from March 4 - 8

Indigenous Achievement Week (IAW), which celebrates the successes of Métis, First Nations, and Inuit students, staff, faculty, and alumni, was held from March 4 - 8, 2024. Various events took place at the University of Saskatchewan (USask) throughout the week, including the Indigenous Student Achievement Awards Ceremony on March 6.

I would like to extend my heartfelt congratulations to all award-winning students, who were honoured and celebrated during the awards ceremony at Marquis Hall for their academic achievement, community engagement, leadership, research, and resiliency. I would also like to thank the many members of our USask community who attended, organized, and promoted the events throughout the week. Your support played a key role in the success of IAW 2024.

māmowi āsohtētān Internal Truth and Reconciliation Forum scheduled for April 26

The 7th annual māmowi āsohtētān Internal Truth and Reconciliation Forum will take place on Friday, April 26, 2024.

Sponsored by the <u>Office of the Vice-Provost Indigenous Engagement</u> and facilitated by the <u>Mistatimōk</u> <u>Committee</u>, this annual event is a response to the Truth and Reconciliation Commission of Canada's Calls to Action and provides an opportunity to gather and constructively and respectfully dialogue and plan for the university environment we need and want. Please save the date. More details will be available in the coming weeks.

International Women's Day commemorated on March 8

International Women's Day (IWD), held annually on March 8, is a global celebration of the social, economic, cultural, and political achievements of women. Each year, this day serves as a powerful reminder of the progress that has been made toward gender equality while highlighting the work that still needs to be done.

The theme for International Women's Day 2024 was <u>#InspireInclusion</u>. This is an invitation for us all to elevate diversity and empowerment in all aspects of society. I am so proud of the initiative taken daily

across USask to inspire inclusion. We are still learning, but we are sincere and evolving in good ways. For example, we have leaders in women's and gender studies, we have equity, diversity, and inclusion (EDI) training across the university, and we have policies and actions underway. At USask, our <u>Equity</u>, <u>Diversity</u>, and <u>Inclusion Policy</u> and Framework for Action formalize our commitment to taking action for diversity, equality, inclusion, and human dignity.

One of the many examples of how USask is inspiring inclusion is the <u>Period Equity Project</u>, which was launched in 2023 by the Office of the Provost and Vice-President Academic. Now, free menstrual hygiene supplies are available in more than 70 washrooms across our main Saskatoon campus. Every person who needs menstrual products should have access to them. The Period Equity Project is helping to make that happen.

On International Women's Day—and every day—I encourage us to work collaboratively to inspire inclusion. Together, we are making a positive difference at USask, in our province, and far beyond.

More than 25 events hosted at USask during Black History Month in February

<u>Black History Month</u> at USask honours the legacy and contributions of members of the university's Black community. This year, throughout the month of February, <u>more than 25 events were organized by</u> <u>colleges, schools, units, departments, and groups</u>—the most events ever held at USask for Black History Month.

USask's 2024 Black History Month Planning Committee members first began meeting in September 2023. Throughout their planning meetings, they developed a theme for Black History Month 2024 at USask: "Celebrating Black Experiences: Arts, Literature and More."

I would like to thank the members of the Black History Month Planning Committee, the members of the Black Faculty and Staff Caucus, and all members of the USask community who organized and attended Black History Months events. I am grateful for your vision and dedication; our events and initiatives throughout the month of February were successful because of your ongoing support.

Black History Month 2024 at USask officially began with a launch event on Feb. 1 and concluded with a celebration gala hosted by the Black Faculty and Staff Caucus on Feb. 29.

I would like to highlight some additional events and initiatives that were held in February:

- After a successful run in 2023, this year's Black History Month celebrations again featured four days of culinary events hosted by USask Culinary Services. Held at Marquis Culinary Centre, each event featured a unique menu highlighting the rich cultural heritage and delicious cuisine of the African diaspora. These events had more than 1,000 visitors throughout the month of February.
- Building on momentum from 2022 and 2023, the Provost's Book Club was back for another year, featuring three meetings highlighting and discussing readings from *The Black Prairie Archives: An Anthology*, edited by Karina Vernon, with one of the sessions facilitated by the editor. Dr. Airini (PhD), provost and vice-president academic, and Natalya Mason, community engagement specialist in the College of Medicine's Division of Social Accountability, also hosted book club sessions. Participants discussed their thoughts and interpretations of each reading as the group explored multiple time periods in Prairie history.
- New to Black History Month celebrations in 2024 was a special screening of National Geographic's documentary *The Space Race*, hosted in collaboration with USask and the Canadian Black Scientists Network. *The Space Race* uncovers the little-known stories of the first Black pilots, engineers, and scientists who became astronauts. This event was organized Dr.

Erique Lukong (PhD), a USask Black Faculty and Staff Caucus representative and a College of Medicine professor.

- A unique poetry and performance workshop series was facilitated by local award-winning interdisciplinary poet Peace Akintade. The series was coordinated by the College of Medicine and the University Library and offered two poetry-writing workshops throughout February that focused on metaphors, storytelling, and personification. Participants were also invited to contribute to a larger collaborative creative process to showcase a final art piece in the second workshop.
- Throughout February, anyone who visited the USask campus was able to walk through the Bowl after sundown or before sunrise and find the Peter MacKinnon Building lit in celebratory green, red, and yellow lights.
- Student groups also organized independent programming that was available for the campus community to take part in, including movie nights, discussion panels, and a gala celebration.
- A full list of the activities that took place this year, as well as resources available to the campus community and a series of news articles, can be found online at <u>spotlight.usask.ca</u>.

USask community members who would like to join the Black History Month Planning Committee can contact Tasnim Jaisee, equity, diversity, inclusion project specialist in the Office of the Provost and Vice-President Academic, by email at <u>tasnim.jaisee@usask.ca</u>.

Dermatology residency training to begin in July at College of Medicine's Regina campus Following years of collaborating with other universities to train dermatology residents for Saskatchewan, the <u>College of Medicine will welcome its first resident into its newly accredited</u> <u>dermatology program in July 2024</u>.

The program will be centred primarily at the College of Medicine's Regina campus and will be led by Regina division head Dr. Karen Holfeld (MD) as well as assistant professor in dermatology Dr. Brittany Waller (MD).

The application process for the recently approved dermatology residency took about six to eight months and is already set up for this year's March Canadian Residency Matching Service match. There will be one postgraduate position available for the five-year program in 2024, with a second to be added going forward beginning in 2025.

USask support program fosters community, academic skills with Afghan refugees

An academic support program at USask is helping Afghan refugees who are looking to further their education. Sponsored by the 30 Birds Foundation, <u>the English Language Enhancement and Academic</u> <u>Preparation (E-LEAP) course</u> is a six-week program created by the USask Language Centre (USLC). E-LEAP supports prospective applicants to USask who require English proficiency assessments, intensive academic English training, and support in completing an application to USask.

The 30 Birds Foundation is dedicated to safeguarding the future of a group of 450 Afghans, predominantly schoolgirls, who evacuated from Taliban-controlled Afghanistan. E-LEAP is unique because it does not assume all participants will need English for Academic Purposes for proficiency. The program recognizes that some students may have strong English skills but need some academic practice and assistance in getting to the next step: applying for an academic program.



UNIVERSITY 2025 PLAN: THE UNIVERSITY THE WORLD NEEDS

nīkānītān manācihitowinihk / ni manachīhitoonaan

Meaningful Impact

Gift from the Samit & Reshma Sharma Foundation supports USask graduate students

Samit Sharma believes in the importance of post-secondary education and in making the world a better place. Those key values led Sharma, an engineer and entrepreneur based in Kingston, Ont., to give \$300,003 to USask as part of the Be What the World Needs campaign—the most ambitious campaign in the province's history.

The generous gift, made possible through three endowments from the Samit & Reshma Sharma Foundation, will support graduate students conducting research in three key areas: water security; human and veterinary infectious diseases and vaccines; and soil health and regenerative agriculture.

The new graduate student awards are:

- The Samit & Reshma Sharma Graduate Award in Vaccine & Infectious Disease Research, which aims to celebrate researchers at the Vaccine and Infectious Disease Organization (VIDO) and to enhance societal knowledge and practices for preserving the environment and fighting infectious diseases with effective vaccines. It will be awarded annually to a graduate student who demonstrates outstanding academic achievement and research excellence with a focus on human and veterinary infectious diseases and/or vaccines.

- The Samit & Reshma Sharma Graduate Award in Water Security, which aims to celebrate researchers at the Global Institute for Water Security (GIWS) and to enhance societal knowledge and practices for preserving the environment and mitigating climate change. It will be awarded annually to a graduate student who demonstrates outstanding academic achievement and research excellence in holistic approaches to environmental health sciences and/or water security.
- The Lata Sharma Graduate Award in Agriculture, which honours Sharma's mother, Lata Sharma, who supported, educated, and inspired her family through her hard work for more than 30 years in the field of agriculture in India. The award aims to enhance societal knowledge and practices for preserving the environment and mitigating climate change. It will be awarded annually to a graduate student who demonstrates outstanding academic achievement and research excellence with a focus on holistic approaches to regenerative agriculture and/or soil health sciences.

K+S Potash Canada invests in Saskatchewan youth through USask SCI-FI Camps

A generous gift of \$150,000 from K+S Potash Canada (KSPC) will enable <u>SCI-FI Science Camps to continue</u> to offer free programming to Saskatchewan youth interested in science, technology, engineering, and math (STEM).

Maureen Bourke, director of SCI-FI Science Camps at USask's College of Engineering, said the donation is critical to its mission of providing all Saskatchewan youth with an opportunity to explore different areas of science and digital skills in a fun and supportive environment. "Approximately 90 per cent of the programming we offer is free to youth and their families, so KSPC's support will allow us to continue this important work," said Bourke. "On the instructor side, gifts like these allow us to employ more than 30 enthusiastic USask undergraduate students from a variety of disciplines, which in turn allows them to develop critical career-enhancing skills of resiliency, creativity, adaptability, and teamwork needed in today's workplace."

KSPC's investment in the SCI-FI Camps Equity and Diversity Fund will also support programming for girls, Camp fYrefly, and workshops and camps for marginalized communities.

SCI-FI Science Camps at the College of Engineering were established by a group of engineering students in 1989, and the first summer camp in 1990 saw 140 registrants. The program has seen significant growth throughout the years, with now more than 1,600 Saskatchewan youth attending summer camps and nearly 20,000 youth participating in SCI-FI programming each year.

In addition to SCI-FI summer camps, the program offers 563 free science workshops in schools throughout the province, Saturday Science Clubs, high school engineering clubs, the Girls DiscoverSTEM Conference, Indigenous programming, and programming for the Children's Festival of Saskatchewan, the City of Saskatoon summer playground program, and for children undergoing medical care at Jim Pattison Children's Hospital.

A portion of SCI-FI Science Camps programming is specifically targeted to underrepresented groups in STEM, including girls and female-presenting youth, Indigenous youth (through partnerships with Saskatoon-based organizations such as the Indian and Métis Friendship Centre, the White Buffalo Youth Lodge, and the Saskatoon Tribal Council), new Canadians, 2SLGBTQIA+ youth, Black youth, and rural/northern youth—one of the reasons that KSPC felt it was important to invest in the USask program.

USask exhibition celebrates Sask. painter's landscape legacy

USask graduate Wynona Croft Mulcaster (BA'43) played an integral role in shaping the history of art and art education in Saskatchewan. Now, eight years after her death in 2016 at the age of 101, <u>an exhibition</u> <u>at USask's Kenderdine Art Gallery is paying tribute to her legacy</u>.

The show—titled *Nonie*, a reference to Mulcaster's nickname—features 20 paintings on canvas and paper. Selected by curator and fellow USask graduate Leah Taylor (BFA'04), the paintings depict two places Mulcaster considered home: Saskatchewan, where she was born in 1915, and San Miguel de Allende, Mexico, where she lived for about 40 years before her death.

Starting in 1937, Mulcaster taught art to schoolchildren in Prince Albert and rural Saskatchewan, and later taught art at the Saskatchewan Teachers' College in Saskatoon, where she took on the role of director of art education. In 1946, Mulcaster studied at the Banff School of Fine Arts, and from 1964 to 1977 she taught painting at USask as an associate professor in the Department of Visual Art. Her students included artists such as Henry Bonli, Robert Murray, Otto Rogers, and Allen Sapp.

After earning her Bachelor of Arts degree at USask in 1943, Mulcaster studied at the Instituto Allende, a visual arts school in Mexico, where she earned a master's degree in fine arts in 1976. A year prior, in 1975, her artwork was featured in the exhibition *Major Saskatchewan Artists* at the Mendel Art Gallery in Saskatoon. In 1984, her work was the focus of another exhibition at the Mendel, titled *Wynona Mulcaster: A Survey, 1973-1982*.

In 2015, in celebration of her 100th birthday, the Mann Art Gallery in Prince Albert held an exhibition of Mulcaster's work. Many of the paintings that are currently featured in *Nonie* were selected from the permanent collection of the Mann Art Gallery, to which Mulcaster donated dozens of pieces before her death. In 1993, Mulcaster received the Saskatchewan Arts Board Lifetime Award for Excellence in the Arts.

Nonie opened on Jan. 26, 2024, at the Kenderdine Art Gallery, located in the Agriculture Building on USask's main Saskatoon campus. The exhibition will remain on view until April 19, 2024.

USask instructor finds hope through Sustainability Faculty Fellowship

College of Kinesiology lecturer Shannon Forrester believes <u>the Sustainability Faculty Fellowship at USask</u> <u>has provided her with a sense of accountability to commit to and engage in sustainability in teaching</u> <u>and learning</u>. Forrester, one of six faculty appointed to the two-year Sustainability Faculty Fellowship, encourages faculty who are interested in creating change in their courses to apply. She was motivated to apply for the 2022-24 fellowship once she researched the guiding principles and found they closely aligned with her own.

In the first year of the 2022-24 fellowship, the six sustainability faculty fellows embedded teaching practices in their own courses such that students were able to reflect, share, and act on key competencies for sustainability. In the second year, the fellows worked within their colleges to support other faculty to make an impact through open educational practices and furthering learning for sustainability. These open educational practices are approached in ways that meet the needs of each academic unit and may align with USask priorities, such as experiential learning through community-engaged or work-integrated learning, student wellness, or other priorities.

Building on the success of the <u>Sustainability Faculty Fellowship</u>, the Gwenna Moss Centre for Teaching and Learning (GMCTL) at USask recently accepted applications for the <u>2024-26 EDI Faculty Fellowship</u>, which will focus on Equity, Diversity, and Inclusion (EDI), Indigenization, and open education practices.

Productive Collaboration

USask researchers seek to develop new breast cancer treatments

Improving patients' cancer treatments and minimizing side effects is the focus of new research at USask that aims to explore an innovative and potentially life-changing treatment targeting the most aggressive form of breast cancer.

Dr. Deborah Anderson (PhD), the director of research for the Saskatchewan Cancer Agency and a professor in USask's College of Medicine, is <u>working with other scientists at USask and across Canada to</u> <u>develop a new drug treatment for metastatic breast cancer</u>. Previous work done by Dr. Anderson and other cancer researchers identified a different marker, the CLIC3 protein, as a new area target for pharmaceuticals to target and battle triple-negative breast cancer.

The research conducted by Dr. Anderson and her team is working toward developing the first-ever drugs to target CLIC3. By focusing on the CLIC3 protein, she said the hope is the new drug will prevent the cancer from growing and spreading.

Dr. Anderson said there are three major types of breast cancer, and chemotherapy is typically used to battle "triple-negative" breast cancer—one of the most aggressive and difficult to treat, as it does not possess any of the three common receptors targeted for drug or hormone treatments. If Dr. Anderson and her team continue to have success developing this new treatment drug, they could give patients an option for fighting breast cancer that has far fewer side effects than chemotherapy.

USask PhD student looks to provide mental health support for international students

USask graduate student Barbara Twum-Antwi is <u>co-developing a project on mental health coping</u> <u>strategies for international students</u>. While working as a research assistant with USask College of Nursing associate professor Dr. Geoffrey Maina (PhD) on a project on racialized immigrants, Twum-Antwi, who was born and raised in Ghana, realized the experiences of the international student participants mirrored her so closely that she started delving into international students' mental health issues.

Twum-Antwi, along with a student research team, is currently working with the USask Student Wellness Centre to co-develop a project and campaign on coping strategies for international students. She has also presented at nursing seminars on mental health coping strategies for international students, sharing her own experience and the strategies she has adopted. As Twum-Antwi moves forward in her research for her PhD, she intends to work in the area of African international students' mental health using a participatory action approach to explore their experiences and co-create resources to support their mental well-being.

Edwards School of Business hosts Haddock Entrepreneurial Speaker Series

Edwards celebrated the 17th annual presentation of the <u>Haddock Entrepreneurial Speaker Series</u> in January 2024. Guest speaker and USask graduate Greg Porter (BAC'95) spoke to students, staff, and the

business community about his journey and the obstacles he overcame while navigating family business dynamics, employee management, and investment decisions.

Sponsored by two passionate and dedicated alumni, Gordon and Maureen Haddock, the annual event included the "Get a Bigger Wagon Young Entrepreneur Awards." These awards celebrate and reward children with cash prizes for their innovative businesses.

Distinguished Learners

USask student finalist for prestigious global scholarship

<u>A USask student is a finalist for the McCall MacBain Scholarship</u>, Canada's largest leadership-based scholarship for master's and professional studies. Having been successful in the award selection process, Lauren O'Reilly will attend final interviews in Montreal. She is among 90 finalists chosen from more than 700 Canadians who applied for the scholarships.

Of those, 159 participated in a first round of regional interviews in November and December. During that process, another USask student was among the top candidates in the McCall MacBain Scholarships selection process. Sharon Jacob earned a \$5,000 McCall MacBain Regional Award, which may be applied to eligible studies at any public university in Canada. Finalists were chosen based on their character, community engagement, leadership potential, entrepreneurial spirit, academic strength, and intellectual curiosity.

O'Reilly is finishing her undergraduate degree in political studies and philosophy, while working as a bartender, teaching assistant, and research assistant. She helped reboot the philosophy student society, played ringette competitively for 14 years, and helped coach a summer sports program. While working at a local foundation, O'Reilly led a team organizing a 250-person event for Saskatoon Multiculturalism Day and created a community journalism program for youth. For her master's degree, O'Reilly would like to explore her interests in political thought and political economy.

USask student-athlete named Canada West player of the year

Congratulations to Camryn Drever, a student-athlete with the Huskie women's hockey team who has been <u>named the Canada West conference player of the year and goaltender of the year</u> in her fifth and final season with the Huskies.

Drever's sensational season has included leading the country with a remarkable .954 save percentage while also posting an impressive 1.33 goals-against average and setting a new Huskies Athletics women's hockey record for wins in a season with 15, including five shutouts, to help the Huskies post a 19-7-1-1 record to finish fourth in the nine-team Canada West conference.

Drever broke the team record of 14 wins in a season and posted the second-best save percentage ever in a Huskie season and the fourth-best goals-against average. She has also excelled off the ice, earning Academic All-Canadian honours five years in a row for posting an overall average of more than 80 per cent, while completing a full course load. She is set to graduate this spring with a Bachelor of Education degree.

Transformative Decolonization Leading to Reconciliation

An urban elder's journey: The role of tradition, community, and education

In October 2023, Dr. Linda Young (BA'94, BFA'98, MEd'20, PhD'23) earned her doctorate at USask Convocation. Her innovative dissertation format, comprised of 10 videos, four bookworks, a glossary of terms, and a gallery show, was developed through carefully followed traditional protocol, a connection to community, and a lifelong relationship with education.

Dr. Young is paskwaw-nehiyaw/Plains Cree from Onion Lake Cree Nation. Her novel approach to presenting and "defending" her dissertation marks a milestone at USask as work continues to decolonize and Indigenize the university.

Dr. Young's dissertation materials are intended to serve as an accessible educational resource for all ages. People can access videos and learn from her thesis, <u>The Journey of a kêhtê-aya (elder): kiskisi sôhkisiwin, tâpôkêyimoh, sôhkitêhê, nâkatohkê: Memorize the Strength, Have Faith, Have a Strong Heart, Pay Attention</u>, through the HARVEST repository.

Read Dr. Linda Young's story on the USask news website.

USask graduate shares Métis stories during Indigenous Storytelling Month in February

Each February, during Indigenous Storytelling Month, USask graduate Leah Marie Dorion (BEd'94, BA'99) shares aspects of her Métis identity and culture with community members across the province. In 2023, for example, Dorion participated in a kick-off event for the month—also known as Saskatchewan Aboriginal Storytelling Month—by giving a talk alongside an Elder in Prince Albert. This year, on Feb. 14, Dorion explored Métis oral storytelling with high school students through a program presented by the Regina Public Library.

Dorion, a published author, painter, teacher, and interdisciplinary artist based in Prince Albert, holds two degrees from USask: A Bachelor of Education, which she earned through the College of Education in 1994, and a Bachelor of Arts degree in Indigenous studies, which she earned through the College of Arts and Science in 1999.

Through her paintings and her writing, Dorion aims to honour Métis culture, the land, and the strength and resilience of Indigenous women. She believes women play a key role in passing on vital knowledge to all of humanity—a belief that is reflected and celebrated through her artistic and literary practices. One of Dorion's recent books, for example, is *sînapân kîskasâkâs: A Guide to Making Contemporary-Style Métis Ribbon Skirts*, which she co-authored with her friend and colleague Bonny Johnson. Published by the Gabriel Dumont Institute, the book guides readers through the process of Métis-style ribbon-skirt making through detailed instructions, photographs, and a companion DVD.

Read Leah Marie Dorion's story on the USask alumni website.

Global Recognition

USask hosts delegation of teachers from Ukraine A 10-person delegation from Volodymyr Hnatiuk Ternopil National Pedagogical University (TNPU) arrived on March 3, 2024, for a three-week course at USask. The Ukrainian delegation includes Ternopil elementary and high school teachers, a TNPU professor, and two Ternopil government education officials.

The Ukrainian educators are taking part in a language methodology program offered by the College of Education to build English language teaching capacity in Ukrainian schools. The group was welcomed during an opening reception on March 5 at the College of Education. They will engage in course work as well as visit elementary and secondary schools in Saskatoon and participate in cultural language and heritage visits throughout the city.

On the delegate's return to Ternopil, the intent is to share their knowledge with pre-service TNPU teachers through internship placements at select elementary and high schools. As part of their visit to USask, the delegation was scheduled to share the impact of the Russian invasion of Ukraine on education during a Ukrainian language class at St. Thomas More College (STM) on March 7.

Since 2013, USask and TNPU have established formal international partnership agreements to facilitate Ukrainian language study abroad initiatives through STM. A renewed partnership will be established during this visit through a Memorandum of Understanding signing between USask (College of Education), TNPU, and STM. The USask project team is led by Dr. Vicki Squires (PhD) through the College of Education's Office of the Associate Dean, Research Graduate Programs and International Initiatives, and the Saskatchewan Educational Leadership Unit (SELU). The three-week course is titled *Current Methods in Teaching English as a Global Language* and is taught by Nadia Prokopchuk, academic advisor and instructor in the English as an Additional Language certificate program, Department of Curriculum Studies.

In addition to the College of Education and TNPU, the program's sponsors include the Government of Saskatchewan's Ministry of Advanced Education, USask's International Office, USask Culinary Services, Ternopil Regional State Administration, Ternopil City Administration, Prairie Centre for the Study of Ukrainian Heritage (STM), Ukrainian Canadian Congress of Saskatchewan, and the Ukrainian Catholic Brotherhood (Bishop Roborecki Branch).

USask dean highlights education as a peace builder at the United Nations

Dr. Julia Paulson (PhD), dean of USask's College of Education, <u>contributed to a panel on Learning for</u> <u>Lasting Peace</u>, <u>organized by the United Nations Educational</u>, <u>Scientific and Cultural Organization</u> (<u>UNESCO</u>) and held at the United Nations Headquarters in New York. The event coincided with the International Day of Education, held annually on Jan. 24. UNESCO dedicated this year's focus to the crucial role education and teachers play in countering the alarming rise of discrimination, racism, xenophobia, and hate speech, paralleled by a rise in violent conflicts.

Dr. Paulson shared research highlights from the Education Justice and Memory Network (EdJAM). Led by Dr. Paulson, EdJAM is a collaborative, international network of researchers, educators, and civil society organizations committed to creative ways to teach and learn about conflict, violence, colonialism, imperialism, and racism. The network funds projects in 24 countries around the world. Dr. Paulson described how the work of the network is grounded in the idea of reparative pedagogies—teaching and learning processes that acknowledge past injustices and seek to restore relationships.

Sask. farmers produce some of the world's most sustainable crops: GIFS at USask study

Saskatchewan farmers are producing some of the least carbon-intensive crops in Canada and the world, as highlighted in a carbon life-cycle analysis commissioned by the Global Institute for Food Security (GIFS) at USask.

The two-part study, commissioned in 2022, examined the carbon footprint from the production of five Canadian field crops—canola, non-durum wheat, field peas, durum wheat, and lentils. It compared these footprints, including their supply chain emissions, to some globally competitive regions across the world that export the same products, including Australia, France, Germany, Italy, and the United States. The results demonstrate that Canadian producers, particularly in Saskatchewan and Western Canada, are producing crops with the least amount of greenhouse-gas emissions or carbon-dioxide equivalents among regions compared.

The study, conducted in partnership with the Food Systems PRISM Lab at the University of British Columbia, followed established protocol for measuring the carbon life cycle of agricultural production. It compiled and reviewed data on the carbon dioxide equivalent emissions for the various activities that go into crop production, including transportation, seed, fertilizer and manure inputs, crop inputs, field activities, energy emissions, and post-harvest work.

Transformative decolonization leading to reconciliation	A university in which Indigenous concepts, methodologies, pedagogies, languages, and philosophies are respectfully woven into the tapestry of learning, research, scholarship, creativity, and community engagement.
Productive collaboration	A university in which research and innovation are inspired by and accountable to community partners.
Meaningful impact	A university resolutely committed to measuring its own success in terms of the aspirations of the communities it serves.
Distinguished Learners	A university whose graduates have the drive, the curiosity, and the humility to work with others in addressing the greatest challenges and opportunities the world faces.
Global recognition	A university that sets the standard in learning, research, scholarship, creativity, and community engagement.

REVIEWS, SEARCHES, APPOINTMENTS

Searches:

- Dean, College of Engineering

- Vice-Provost, Strategy Realization
- Principal, Prince Albert Campus

Appointments:

- Dr. Danielle Brittain has been appointed as dean, College of Kinesiology for a period of up to five years, effective July 1, 2024, to June 30, 2029.
- Dr. Sarah Forgie has been appointed as dean, College of Medicine for a period of up to five years, effective July 1, 2024, to June 30, 2029.
- Dr. Terry Klassen has been appointed as provincial head, Department of Pediatrics, College of Medicine for a term of up to three years, effective April 1, 2024.
- Dr. James Stempien has been extended as provincial head, Department of Emergency Medicine, College of Medicine, effective March 1, 2024, until June 30, 2024.
- Dr. Ken Wilson has been appointed as acting department head, Department of Indigenous Studies, College of Arts and Science for a period of up to one year, effective Feb. 1, 2024, to Jan.
 31, 2025, or until the department head returns from leave, whichever occurs first.
- Dr. Jaswant Singh has been appointed as associate dean, academic excellence and innovation, College of Graduate and Postdoctoral Studies for a period of up to five years, beginning Feb. 1, 2024, up to Jan. 31, 2027.

thank you mąsi / pidamaya / pinámaya miigwetch / marsee / hiy hiy



UNIVERSITY OF SASKATCHEWAN STUDENTS' UNION



UNIVERSITY COUNCIL

UPDATES | RECOMMENDATIONS | FEBRUARY 2024
ACKNOWLEDGEMENT

As an organization of Indigenous and Non-Indigenous students, we acknowledge that we gather on Treaty 6 territory, the homeland of the Cree, Saulteaux, Blackfoot, Métis, Dene and Dakota people. We acknowledge the harm that colonial institutions, such as the University of Saskatchewan, have done. We remember that there were centuries of governance and education on this land before the settlers arrived and that these forms of education and governance are continuing today. We honour and reaffirm our relationships with one another and the land that we are on as we work to dismantle the systematic barriers to education that First Nations, Métis, Inuit and other marginalized people face.



INTRODUCTION

Honourable members of the University Council,

The USSU is pleased to be the primary support mechanism for students on campus. Our current report highlights the projects, initiatives, and partnerships from the recent months and sets out our primary goals for the year ahead.

To dive deeper into our activities and see firsthand the vibrant campus life over the past months, we invite you to peruse our Instagram @ussuexec and visit the USSU website.

The pulse of the university is its students. Recognizing their diverse needs and aspirations, we've meticulously curated our priorities, grounded in direct feedback and extensive consultations. Our refocused trajectory revolves around three cardinal pillars:

- 1. **Empowerment:** Beyond mere recognition, our vision is to foster an environment where students are inspired to fully realize their potential, leading their academic and co-curricular activities with assurance and enthusiasm.
- 2. Wellness: Recognizing the multifaceted pressures of modern academic life, our allegiance goes beyond just scholastic achievement. We are dedicated to promoting holistic well-being, inclusive of extensive mental health support, resources for physical health, and avenues for emotional well-being.
- 3. Accessibility: With a commitment to inclusivity at the forefront, we are amplifying our initiatives to ascertain that all students, irrespective of their unique backgrounds, abilities, or situations, can effortlessly access the comprehensive range of resources, opportunities, and experiences we proudly offer.



FOOD INSECURITY



627 hampers were prepared for 330 students through January and February 2024. At this time last year, 172 hampers were prepared for 94 students. The statistics show that food insecurity is on the rise among USask students. UFood is shortstaffed but is doing its best to keep up with demand.

Graduate students account for 72.57% of hamper usage, which triggers a conversation as there is an equivalent demand on the USSU front. The USSU has had conversations with the GSA about having the GSA contribute \$10,000 to the UFood program. GSA has committed to providing \$6000 and is working to get the full \$10,000 approved. In the meantime, the USSU will have to explore ways to manage its resources, which could include capping the number of hampers available to graduate students. However, we would not like to take that measure and instead would like to see the University allocate some more funds towards UFood as the initial investment will be utilized by November 2024 (anticipated).

HOUSING CRISIS

President Mann has been actively working with the City of Saskatoon to advocate for students in the prevailing housing crisis, with the aim of supplying insightful data to inform their recommendations to Mayor Charlie Clark. This initiative has been crucial step towards addressing the housing challenges faced by students and the wider community. At this point, the USSU is an active contributor to the city's desire to run a housing accelerator programme. President Mann also recently participated in a lengthy interview with a research group where she delved into various aspects of housing, including students' preferences for types of accommodations, their ideal neighbourhoods in proximity to the university, and what they consider to be a safe and ideal distance from the campus. The data collected will not only reflect the current housing needs and preferences of students but will also provide tangible suggestions that Mayor Clark can consider when formulating housing policies. This proactive approach demonstrates the USSU Executives' commitment to actively participating in community development and advocating for solutions that meet the needs of their peers.



USSU'S EXECUTIVE SCHOLARSHIP FUND

The **USSU Executive Scholarship** is established to support undergraduate students at the University of Saskatchewan who demonstrate a commitment to promoting diversity, showing financial need, and engaging in community service and extracurricular activities. This scholarship aligns with the USSU's mission to advocate for and support students, fostering a vibrant, inclusive, and engaged student community.

Definitions

- **Diversity:** The inclusion of individuals from various backgrounds, including but not limited to ethnicity, gender, sexual orientation, socio-economic status, and disabilities.
- **Financial Need:** The economic circumstances hinder a student's ability to finance their education.
- Community Service: Voluntary work intended to help people in a particular area.
- Extracurricular Activities: Activities performed by students that fall outside the realm of the regular school or university education curriculum.
- Leadership: The action of leading a group of people or an organization, or the ability to do this.

Eligibility Criteria

- Must be a verified undergraduate student at the University of Saskatchewan.
- Active involvement in extracurricular activities and community service.
- Demonstrated leadership qualities and initiatives to improve student life on campus.

Award Distribution

Two recipients will be chosen. A one-time payment of **\$2,000** to each scholarship recipient. For the 2023-2024 year, USSU will be issuing a cheque for payment fulfillment. The incoming president will be advised to work with appropriate channels to ensure the money is directly applied as a tuition credit.



USSU UNDERGRADUATE SYMPOSIUM



USSU ELECTIONS

President



Vice-President (Operations and Finance)



Vice-President (Academic Affairs)



Vice-President (Student Affairs)







2024 USSU General Election Schedule

February 12	Call for nominations for Executive and Senate positions begins. Nomination forms for Senate are available at the USSU, Room 110, Upper Place Riel.
February 26	MANDATORY Orientation Meeting for all undergraduate students who wish to run for Executive in the Roy Romanow Student Council Chamber, Room 110.3, Upper Place Riel at 4 pm. Chaired by the USSU Communications & Marketing Manager. Nomination forms will be available at the Orientation Meeting.
March 1	All Nomination Forms must be delivered to the USSU office by 4:00 pm. MANDATORY Procedures Meeting for ALL nominees in the Roy Romanow Student Council Chamber, Room 110.3, Upper Place Riel at 4:30 pm. Chaired by the Chief Returning Officer.
March 4	Academic standing checks for nominees.
March 7	Confirmation of academic standing.
March 18	Campaigning begins at 12:01 am.
March 27	Voting begins at 9:00 am.
March 28	Voting ends at 4:00 pm . Formal complaints must be delivered to the ACRO by 4:00 pm . The Elections Committee meets at 4:00 pm . to discuss disciplinary matters and to ratify the results, which will be available from PAWS to the ACRO by 4:30 pm . Election results, subject to further discipline, are announced in Place Riel. All campaign material must be removed by 11:59 pm .



Tis the season! Elections are running officially - which has allowed the USSU Executives to achieve one key goal set out for the year: **student** empowerment. We, from day 1, mentioned that our efforts will be justified when every USSU position goes contested. This is the first time in USSU history that more than 2 positions have 3 candidates running.

The USSU also recognizes that every year, university council runs into the problem of a certain time period where they do not have student representatives from the USSU. Part of the issue is related to associations not running the MSC (member of student council) elections on time. President Mann tasked every MSC member to advise their presidents to run elections in synergy with the USSU and we have seen a positive nod in that direction.

University Senate

Abhineet Goswami	Nishtha Mehta
Brock Neufeldt	Celeste Nunez Valdivieso

STUDENT LEADERSHIP

USSU Executive Networks

AOCP members are the bridge between USSU and the student community, and collaboratively, they advocate for student support and services. We are happy to continually aim to focus on sharing our strategies and priorities for the year, achievements, and resources for the presidents. Additionally, we encourage the association presidents to share their priorities and plans for the year and how USSU can help them achieve their goals. Furthermore, VP Singh, Bauman, and Mehta are additionally creating similar networks with students from such associations that serve a role similar to them. The purpose of these executive networks will be to offer 1-on-1 mentorship and advice to student leaders as governance can be a challenging endeavour.

University Students Council (USC)

University Students' Council Meetings are every Thursday at 6:00 PM in the Roy Romanow Student Council Chamber, with the exception of May, June, July, and August. On September 14, we began council meetings and welcomed several new councillors who are just starting their advocacy journeys. We would like to thank everyone in the uSask community who will be coming to the council and using the opportunity to engage with young leaders. The council recently completed the Annual General Meeting and brought on exciting new changes to the USSU governance.



President's Executive Committee (PEC)

USSU executives are very grateful to have the opportunity to engage with PEC members on a regular basis. We are currently discussing issues such as academic advocacy (Updates on AI Taskforce, Assessment Working Group, Academic Integrity Conversations), the growing need for more Academic Advisors in Arts & Science, Ice/Snow Clearings and safety concerns, increased student consultation on Scholarship, Bursary, and Grants that the university provides, International Student Visas, UFood, supports for College of Education & Nursing, Ramadan Student Accommodations.

USSU CENTRES

The USSU takes pride in its centres, which serve as inclusive sanctuaries equipped with pivotal resources for the campus community. Throughout the summer, these centres were abuzz with preparations, organizing a range of programming and support initiatives for the forthcoming academic year.

Before stepping into their roles, our centre volunteers undergo comprehensive training. This covers several crucial areas, such as USSU-specific training, protocols related to sexual violence and assault, anti-racism and anti-oppression measures, LGBTQ2SA+ inclusivity, and peer health education.

In recognition of their invaluable contributions, every USSU centre volunteer is awarded CCR credit along with an honorarium.

Currently, the USSU centres are open and ready to assist from 9 AM to 4:30 PM, Monday through Friday.



The USSU extends its centre support to the entire academic community, embracing both undergraduate and graduate students. For a deeper dive into what our centres offer, please visit our website at <u>www.ussu.ca</u>.

USSU FRESH MARKET

The USSU Food Centre offers a fresh food market in Place Riel, as a convenient option for students looking to grab healthy snacks or groceries. This program provides fresh fruit and vegetable options at extremely low prices to accommodate students' health needs.

You can find the Fresh Market set up on the main level of Place Riel, near the USSU, from Tuesday to Friday 10:30 am – 4:30 pm.

The Food Centre continues to run the uFood emergency hamper program for students. Students can order non-perishable goods online from our website for pick up at our office.



USSU COMMUNITY EVENTS



Place Riel Student Centre

USSU **EXCELLENCE AWARDS** NOMINATION FORMS 2024 Teaching Excellence Awards USSU lline: Thursday, March 14th #ThanksTransit USSU 10 am on Fridays C at the Fitness Loft This is open to all people looking for a quieter and safe space to work out and get the guidance you need to start! VALENTINE'S DAY CARD MAKING! FEB 13 & 14 • Women's Centre (Memorial Union Building) Make a Valentine's card for your Valentine, and get a goodie bag in return! We hope to spread some love to you all this midterm season <3 ₽. USSU **AWARENESS WEEK** JANUARY 29 - FEBRUARY 2



ACKNOWLEDGEMENTS

A heartfelt thank you from all of us at the USSU team. Should you have any inquiries or suggestions, please do not hesitate to contact Ishita Mann, S.V.M., at <u>president@ussu.ca</u> or call 306-966-6965. We're here to listen and assist.

We are very grateful to our USSU senior managers, Amanda Mitchell (Controller), Jason Ventnor (Communications and Marketing Manager), Jason Kovitch (Business and Services Manager), and Stefanie Ewen (Facilities Manager), for answering our questions and guiding us in the right direction.

We thank the university administration for your continued support in our efforts to empower more resilient student leaders.



President

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