KWANTLEN POLYTECHNIC UNIVERSITY
Faculty of Science

FACULTY COUNCIL
Tuesday, March 19th, 2024
Microsoft Teams Meeting (Online)
4:15 PM – 6:15 PM

AGENDA

1. Additions/Approval of Agenda
2. Approval of Previous Meeting Minutes
3. Business Arising from the Minutes?
4. Reports

   a) Chair's Report - (Allyson Rozell)

   b) Dean's Report - (Brett Favaro)

   c) Senate Reports

      i) Senate - (Fergal Callaghan)

      ii) Standing Committee on Program Review – (Fergal Callaghan)

      iii) Standing Committee on University Budget – (Fergal Callaghan)

      iv) Standing Committee on Academic Planning and Priorities – (Allyson Rozell)

      v) Standing Committee on Curriculum – (Brett Favaro)

      vi) Standing Committee on Research – (Brett Favaro)

      vii) Standing Committee on Teaching and Learning – (Catherine Chow)

   d) Science Committee Reports

      i) Curriculum – (Brett Favaro)
      - Program Change Proposal – Diploma in Brewing and Brewery Operations (Dominic Bernard)
      - Program Change Proposal – Associate of Science Degree Framework (John Martin)
      - Course Revisions and New Course Proposals
        BIOL 2421 : Cellular Biochemistry
        HSCI 2220 : Medical Terminology
        HSCI 3225 : Nutrition
        HSCI 4250 : Health Business
        MATH 1170 : Introduction to Data Science (new - Mehdi Salimi)

      ii) Academic Planning and Priorities – (Allyson Rozell)

      iii) Research – (No Representative)

      iv) Nominations and Governance – (Michael Coombes)

      v) New Business?

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e) Guest Discussion:
    Senate Subcommittee on Research is overseeing the creation of a Research Advancement
    Strategy. We will be joined by Daniel Bernstein, Victor Martinez, and Bernadine
    Sengalrayan, who are soliciting input that will be used to formulate the strategy.

Date of next meeting: April 16, 2024

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FACULTY COUNCIL
Tuesday, February 20th, 2023
Microsoft Teams Meeting (Online)
12:00 PM – 1:30 PM

Meeting Minutes

Attendees:
Brett Favaro; *Dean*
Jeff Dyck; *Assoc. Dean*
Erika Eliason; *Assoc. Dean*
Ashley Schneider; *Recording*
Allyson Rozell; *Chair*
Mike Coombes; *Vice-Chair*
Casey McConill
Catherine Chow
Cameron Lait
Christina Iggulden
Fergal Callaghan
Kaylee Magee
Nick Inglis
Martina Solano Bielen
Melissa Bodner
Melissa Drury
Michael Kiraly
Muskandeep Kaur
Nadia Henwood
Tyron Tsui
Xavier Ardez

Regrets:
Alan Davis
Alex Lyon
Laura Bryce
Mary Hosseinyazdi
Michael Adams
Nicole Tunbridge
Samaneh Ghanzafari Hashemi
Sepideh Tahriri Adabi

1. **Approval of the Agenda of February 20, 2024**

   *It was **moved** (Catherine Chow), **seconded** (Mike Coombes)**, and carried THAT** the agenda be approved as distributed.*

2. ***Approval of the Faculty Council Minutes of January 16, 2024**

   *It was **moved** (Mike Coombes), **seconded** (Catherine Chow)**, and carried THAT** the agenda be approved as distributed.*

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3. **Business Arising:**
   - Nothing arising

4. **Reports:**
   a. **Chair's Report:**
      - Daniel Bernstein etc. to visit and discuss KPU's Research Advancement Strategy
      - Ashley just emailed out a list of our Grads for convocation next week - take a look!

   b. **Dean's Report:**
      - Discussion and updates on what we know now regarding the cap on International Students.
      - Canada is in the process of making changes that makes it much more difficult for international students to study in Canada.
      - Many universities across Canada have the need for international student tuition baked into the budget.
      - We can't predict what the changes will be because we don't know what the provincial government will be allotting to each university for seats.
      - Budget will get tighter with this restriction.
      - Let's keep working on making connections when we do events so we can try to convert those interested parties into future applicants
      - We'll be taking a look at the structure of the website to make it easier for students to apply. We'll be working on this and other projects with marketing.
      - We'll be keeping a closer eye on fill rates for classes to make sure we're matching demand. We're trying to be proactive on this aspect as well.
      - Robust discussion from Faculty council followed.
      - When hosting events, please reach out to DeAnn Bremner and Triona King for support with the recruitment side of things.
      - Brief review of the Future Student's Office CRM contact cards
        The contact cards are the same as the "Connect with us" on the Future Student's page here: https://www.kpu.ca/future-students#get-started
      - Our advisors will be hosting "declaration sessions" to help land the plane on students that are already here.
      - Student representatives discussed their experience with communication from the university before and during their application process.

   c. **Senate Reports:**
   Senate:

   At the start of the meeting, President Davis acknowledged the federal government's announcement of a cap on the number of study permits for international students coming to Canada. He reassured us that KPU leadership is advocating strongly for KPU and working hard to make sure the government understands how a decrease in international enrollments (and therefore tuition revenue) would affect us and the services we provide. He will make sure that the university community is kept informed of this issue as it evolves.

   Senate voted in favour of recommending that the Board of Governors approve revisions to the BSc, Major in Biology, Cooperative Education Option and the BSc (Honours), Major in Biology, Cooperative Education Option.

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Senate approved extending the suspension of the Bachelor of Horticulture Science, Major in Urban Ecosystems program until August 2025.

The draft university budget for fiscal year 2024/25 was presented and Senate voted in favour of endorsing the budget.

Senate approved the first KPU micro-credential (in medication management for Health Care Assistant students).

Notice was given of Spring 2024 elections to the Board and to Senate, including a seat for a Faculty of Science Senator for the term Sept 1 2024 to Aug 31 2027.

- **Senate Standing Committee on Program Review (SSCPR):**
  - Nothing to report.

- **Senate Standing Committee on University Budget (SSCUB):**
  - Nothing to report.

- **Senate Standing Committee on Academic Planning and Priorities (SSCAPP):**
  - Nothing to report.

- **Senate Standing Committee on Curriculum (SSCC):**
  - Sustainable Agriculture's program revisions were approved.

- **Senate Standing Committee on Research (SSCR):**
  - Nothing to report.

- **Senate Standing Committee on Teaching and Learning (SSCTL):**
  - Nothing to report.

d. **Science Committee Reports**
  - **Curriculum Committee:**
    - **MOTION**: THAT Faculty Council approve the PHYS 4901 new course outline.
      Moved: Mike Coombes; **Seconded**: Casey McConill; **Motion Carried.**

  - **Academic Planning and Priorities:**
    - Nothing to report.

  - **Research:**
    - Nothing to report.

  - **Nominations and Governance:**
    - Updated Faculty Bylaws. Replacing "Faculty of Science and Horticulture" to "Faculty of Science" and fixing one typo.
      This is more of an FYI and will need to go to Senate for approval.
    - Nom Gov still has a vacant seat.
    - Nom gov will do scholarship recommendations in the next few months

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o KSA elections are coming up. Suggestion to consider inviting the Faculty of Science Student rep from the KSA to serve on Faculty Council.

5. **New Business:**
   - Nothing arising.

Meeting adjourned by Chair at 12:55 PM
Moved: Mike Coombes; Seconded: Kaylee Magee

Date of next Faculty Council: March 19, 2024

SENATE
Agenda Number: Entered by Senate Office
Meeting Date: Entered by Senate Office
Presenter(s): Dominic Bernard

AGENDA TITLE: PROGRAM CHANGE FORM DIPLOMA IN BREWING AND BREWERY OPERATIONS

ACTION REQUESTED: Motion

RECOMMENDED RESOLUTION

THAT ....Senate approve that the Diploma in Brewing and Brewery Operations change its admission requirement from a portfolio to a letter of intent as outlined in the Program Change Form

COMMITTEE REPORT

For Secretariat Use Only

Context and Background

It was highlighted in the Brewing and Brewery Operations quality assurance plan to reduce barriers to application and feedback indicates that the term portfolio is intimidating for some applicants. After consultations with OREG, we would like to change the current wording in the calendar from a portfolio to a letter of intent. We hope that a letter of intent would be more straightforward for applicants and it would still allow the department to vet applicants.

Key Messages

1. Change the portfolio admission requirement to a letter of intent.

Resource Requirements

That the change be made in the calendar.

Implications/Risks

Risk loosing out on applicants if the process seems too complicated therefore we are trying to make the application process more straightforward.

Consultations

Office of the Provost:	David Burns	16-Feb-2024
Vice Chair of Senate:	Catherine Schwichtenberg	16-Feb-2024
OREG	Molly Kirsch	16-Feb-2024

Attachments

1. **Program Change Proposal (Degree)**
   Diploma in Brewing and Brewery Operations

Submitted by

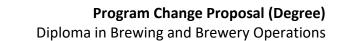Dominic Bernard

Date submitted

[Date sent to the Secretariat)

Table of Contents

1. Program Change Proposal

For degree or non-degree program changes that may be deemed substantive by the Ministry of Advanced Education, Skills & Training's website, please consult with the Provost's Office before completing this document. For degree program changes that may be deemed substantive, the Ministry's Determination of New Degree Template must be completed and approved by Senate prior to submission to the Ministry for determination. Contact the Provost's Office for assistance in completing this template.

This form is to be used for:

- minor changes to any Senate-approved degree and non-degree programs at KPU
- addition of Honours designation to a Major program currently offered at KPU
- creation of a Minor degree for which a cognate Major program is currently offered at KPU

For more information on how to complete this form, please contact the Chair of the Senate Standing Committee on Curriculum (SSCC).

The Program Change Proposal should be submitted to Senate@kpu.ca by the submission deadline posted on the Senate Standing Committee on Curriculum (SSCC) website meeting along with any new, revised, or discontinued course outlines associated with the proposal submitted on the Consent Agenda for the same meeting. Faculties must have already formally approved the associated course outlines.

PROGRAM DETAILS

Faculty:	Faculty of Science
Program Name:	Diploma in Brewing and Brewery Operations
Department:	Brewing
Effective date:	September 2025 Notes: *If you are requesting a change to **admission** requirements, Senate approval is required by September meeting of Senate of the preceding academic year (prior to the first application cycle for the academic year). If you are requesting a change to **declaration or curricular** requirements, approval is required no later than the April meeting of Senate of the preceding academic year.*
Dean/Associate Dean:	Brett Favaro/Jeff Dyck
Chair/Coordinator:	Dominic Bernard
Submission Date:	TBA

CONSULTATIONS

Consultations	Person Consulted	Consultation Date
Office of the Provost:	David Burns	16-Feb-2024
Vice Chair of Senate:	Catherine Schwichtenberg	16-Feb-2024
Other(s)* (if applicable):		

*For more complex consultations, please attach the Curriculum Consultation Forms. If you have any inquiries regarding the completion of the above Consultations section or the Curriculum Consultation Forms, please contact the Chair of the Senate Standing Committee on Curriculum.

OFFICE OF THE REGISTRAR PROPOSAL REVIEW

Review of Completed Program Change Proposal	Review Submission Date
Send to **OREGCurrConsult@kpu.ca** for review**	16-Feb-2024

**Allow 2 weeks for the Office of the Registrar's proposal review (in advance of the SSCC submission deadline).
If the proposed changes introduce new courses, submit 2 weeks in advance of your Faculty's curriculum committee meeting.

APPROVALS

	Proposal Approval Date
Faculty Curriculum Committee:	7-Mar-2024
Faculty Council (if required):	TBA
SSC on Curriculum:	TBA
SSC on University Budget (if required):	N/A
SSC on Academic Planning and Priorities (if required):	TBA
Senate:	TBA

Overview of Proposed Change(s):	Change the portfolio admission requirement for the Diploma in Brewing and Brewery Operations to a letter of intent.
Rationale:	It was highlighted in the Brewing and Brewery Operations quality assurance plan to reduce barriers to application and feedback indicates that the term portfolio is intimidating for some applicants. The word portfolio is daunting to some and could be a barrier to applications. After consultations with OREG, we would like to change the current wording in the calendar from a portfolio to a letter of intent. We hope that a letter of intent would be more straightforward for applicants and it would still allow the department to vet applicants.
URL(s):	*https://calendar.kpu.ca/programs-az/science-horticulture/brewing/brewing-brewery-operations-diploma/*

Impact on Students:	**Check all that apply**:
	☒ The changes alter the admission, declaration or continuance requirements
	If yes, provide both the current calendar entry and new calendar entry in full. (see below)
	☐ The changes alter the curricular requirements
	If yes, provide both the current calendar entry and new calendar entry in full. (see below)
	☐ The changes change the total number of required credits
	*If yes, state the **current** number of total credits:* Click or tap here to enter text.
	*and **proposed** number of total credits:*Click or tap here to enter text.
	☐ The changes introduce new, revised or discontinued courses
	Click or tap here to enter text.*and list the courses below.*
	☐ The changes alter the credential awarded
	If yes, indicate the proposed credential:

Transition Plan	*(Current students are entitled to complete their program of study without having additional requirements for graduation added midstream. If this proposed change impacts in-progress students, a transition plan must be provided to identify how in-progress students will be permitted to graduate, including the allowable course substitution(s).)* Advisors will be informed of the change.

Current Requirements with Proposed Changes	New Requirements
Cut and paste the relevant section(s) in full from the current Calendar website. Use <u>track changes</u> to show the proposed changes. *For a new Minor degree for which a cognate Major program is currently offered at KPU, insert the following text below "This is a new Minor degree program for which a cognate Major degree program already exists at KPU. There is no existing curriculum for the minor, and as per Policy AC11 there is no requirement for a Concept Paper or FPP."*	*Provide a clean copy to show how the new Calendar entry will appear. List courses in alpha/numeric order.*

Admission Requirements	Admission Requirements

In addition to the Faculty's Admission Requirements, which consist of KPU's undergraduate English Proficiency Requirement, the following program admission requirements apply:
 	
• ~~Portfolio Review~~
• A letter of intent, of about 500 words in length, addressing:
 	
    o Your interest in attending the Brewing and Brewery Operations Program
 	
    o The qualities you possess that make you a good candidate for this program
 	
• A minimum of 19 years of age by the first day of classes.
• Either
    o Chemistry 11 with a minimum grade of C+ (or equivalent), and Level E1 as defined in the Math Alternatives Table, or
• Recommendation by the Admissions Selection Committee.
 	
~~Portfolio Review~~
~~Applicants will be provided portfolio requirements and instructions for submission upon receipt of an application.~~
 	
~~For more information about the portfolio requirements, visit the department's website at kpu.ca/brew~~
 	
Selection of qualified applicants for admission will be made by an Admissions Selection Committee which may comprise faculty, and staff~~, and external member~~.
	In addition to the Faculty's Admission Requirements, which consist of KPU's undergraduate English Proficiency Requirement, the following program admission requirements apply:
	• A letter of intent, of about 500 words in length, addressing:
	
	    o Your interest in attending the Brewing and Brewery Operations Program
	
	    o The qualities you possess that make you a good candidate for this program
	
	• A minimum of 19 years of age by the first day of classes.
	• Either
	    o Chemistry 11 with a minimum grade of C+ (or equivalent), and Level E1 as defined in the Math Alternatives Table, or
	    o Recommendation by the Admissions Selection Committee.
	
	Selection of qualified applicants for admission will be made by an Admissions Selection Committee which may comprise faculty and staff.

2. Curriculum Consultations

Please consult with the Office of the Provost as additional consultations may be required depending on the scope of the proposed program changes.

The proposal to change the portfolio requirement to a letter of intent for the admission requirements of the Brewery and Brewery Operations Program would not impact the current curriculum. The department is supportive of this change.

For consultees, please consider the following questions when providing your feedback to the Proponent:

- Does your department/unit support the proposed curriculum? Provide rationale for support/non-support.
- How does the proposed curriculum impact your department/unit?
- How does the proposed curriculum impact your program?
- Is there potential for curricular overlap with current offerings?

Name	Department, Program and/or Faculty	Comments	Date Consulted
		Comments:	
		Comments:	
		Comments:	
		Comments:	
		Comments:	
		Comments:	

3. Financial Assessment Questions

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<tr>
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Financial Assessment Questions

The following information will help determine whether there is a budgetary impact to the proposed program changes, and what additional information and consultation will be required.

Please note that all additional budgetary requests in support of the proposed program change require approval from the Dean and the Provost, and additional financial documents may be required.
</td>
</tr>
<tr>
<td>Change in number of credits</td>
<td>Yes☐ No☒
If Yes, please provide details:</td>
</tr>
<tr>
<td>Change in space requirements</td>
<td>Yes☐ No☒
If Yes, please provide details:</td>
</tr>
<tr>
<td>Change in equipment requirements</td>
<td>Yes☐ No☒
If Yes, please provide details:</td>
</tr>
<tr>
<td>Change in support requirements</td>
<td>Yes☐ No☒
If Yes, please provide details:</td>
</tr>
</table>

Please attach any financial document if required.

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The Program Change Proposal should be submitted to Senate@kpu.ca by the submission deadline posted on the Senate Standing Committee on Curriculum (SSCC) website meeting along with any new, revised, or discontinued course outlines associated with the proposal submitted on the Consent Agenda for the same meeting. Faculties must have already formally approved the associated course outlines.

PROGRAM DETAILS

Faculty:	Faculty of Science
Program Name:	Associate of Science Degree Framework
Department:	N/A
Effective date:	Fall 2024
	Notes: *If you are requesting a change to **admission** requirements, Senate approval is required by September meeting of Senate of the preceding academic year (prior to the first application cycle for the academic year). If you are requesting a change to **declaration or curricular** requirements, approval is required no later than the April meeting of Senate of the preceding academic year.*
Dean/Associate Dean:	Brett Favaro
Chair/Coordinator:	N/A
Submission Date:	

CONSULTATIONS

Consultations	Person Consulted	Consultation Date
Office of the Provost:	David Burns	January 11, 2024
Vice Chair of Senate:	Catherine Schwichtenberg	December 22, 2023
Other(s)* (if applicable):	OREG Consult	March 7, 2024

*For more complex consultations, please attach the Curriculum Consultation Forms. If you have any inquiries regarding the completion of the above Consultations section or the Curriculum Consultation Forms, please contact the Chair of the Senate Standing Committee on Curriculum.

OFFICE OF THE REGISTRAR PROPOSAL REVIEW

Review of Completed Program Change Proposal	Review Submission Date
Send to **OREGCurrConsult@kpu.ca** for review**	

***Allow 2 weeks for the Office of the Registrar's proposal review (in advance of the SSCC submission deadline).*
If the proposed changes introduce new courses, submit 2 weeks in advance of your Faculty's curriculum committee meeting.

APPROVALS

	Proposal Approval Date
Faculty Curriculum Committee:	TBD
Faculty Council (if required):	*(Not needed if the Faculty Curriculum Committee has delegated authority to approve program revisions on behalf of their Faculty Council.)*
SSC on Curriculum:	TBD
SSC on University Budget (if required):	TBD
SSC on Academic Planning and Priorities (if required):	TBD
Senate:	TBD

Overview of Proposed Change(s):	Addition of GEOG 1102 to the First Year Science Requirements.
Rationale:	1. **GEOG 1102 (4)** was created (to better meet student and department needs) from combining two previous GEOG courses (1110 and 1120) **that were both considered science courses by KPU** and appeared on previous versions of the ASc. However GEOG 1102 is not on the list of possible courses for the ASc. 2. The course content has not changed, only combined, and has the scientific rigour and background to fully qualify as a (lab) science course with **10-11 labs** per semester. It has the scientific rigour of other SCIH courses. 3. A near equivalent course (ENVI 1216) at KPU is considered SCIH. 4. KPU's own ASc credential in 2023 considers 2nd year GEOG courses equivalent science courses. GEOG 1102 is a prerequisite for these second year courses. **Therefore GEOG 1102 (4) should be added to the ASc as it is in all respects a science course.** This will also provide SCIH students more flexibility in choosing courses.

URL(s):	*https://calendar.kpu.ca/programs-az/science-horticulture/as-degree-framework/#requirementstext*

Impact on Students:	**Check all that apply**: ☐ The changes alter the admission, declaration or continuance requirements *If yes, provide both the current calendar entry and new calendar entry in full. (see below)* ☒ The changes alter the curricular requirements *If yes, provide both the current calendar entry and new calendar entry in full. (see below)* ☐ The changes change the total number of required credits *If yes, state the **current** number of total credits:* Click or tap here to enter text. *and **proposed** number of total credits:* Click or tap here to enter text. ☐ The changes introduce new, revised or discontinued courses Click or tap here to enter text.*and list the courses below.* ☐ The changes alter the credential awarded *If yes, indicate the proposed credential:*
Transition Plan	No transition plan is needed as this is only an additional course, to a list of many possible courses, that SCIH students can take to fulfill requirements of the ASc. However, it might be helpful to pass this change on to science advisors so students will know that **GEOG 1102** does indeed qualify as a science course. This will allow SCIH students more choice in completing their degrees.

Curriculum Map[1]

PLO #1:

PLO #2:

PLO #3:

PLO #4:

PLO #5:

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[1] **Introduced [I]**: Course learning outcomes that concentrate on knowledge or skills related to the program outcomes at a basic level or skills at an entry-level of complexity.
Developing [D]: Course level outcomes that demonstrate learning at an increasing level of proficiency of the program level outcome as well expanding complexity.
Advanced [A]: Course level outcomes that demonstrate learning related to the program level outcome with an increasing level of independence, expertise and sophistication or integrate the use of content or skills in multiple levels of complexity.

PLO #6:

Current Requirements with Proposed Changes	New Requirements
Cut and paste the relevant section(s) in full from the current Calendar website. Use <u>track changes</u> to show the proposed changes. *For a new Minor degree for which a cognate Major program is currently offered at KPU, insert the following text below "This is a new Minor degree program for which a cognate Major degree program already exists at KPU. There is no existing curriculum for the minor, and as per Policy AC11 there is no requirement for a Concept Paper or FPP."*	*Provide a clean copy to show how the new Calendar entry will appear. List courses in alpha/numeric order.*
Admission Requirements Students pursuing an Associate of Science Degree must be admitted to the Faculty of Science & Horticulture.	**Admission Requirements** Students pursuing an Associate of Science Degree must be admitted to the Faculty of Science & Horticulture.
Curricular Requirements Students are required to complete 60 semester credit hours of first-year and second-year courses. A minimum overall GPA of 2.0 is required, with a minimum grade of D in each course counting towards the Associate of Science Degree. The Associate of Science Degree follows the standards published by the British Columbia Council on Admissions & Transfer (BCCAT) www.bctransferguide.ca/learn-more-about/associate-degrees/. Accordingly, all courses used as part of the degree must be transferrable to one of the following BC universities: • Simon Fraser University (SFU) • University of British Columbia (Vancouver or Okanagan Campuses) (UBC) • University of Northern British Columbia (UNBC) • University of Victoria (UVic)	**Curricular Requirements** Students are required to complete 60 semester credit hours of first-year and second-year courses. A minimum overall GPA of 2.0 is required, with a minimum grade of D in each course counting towards the Associate of Science Degree. The Associate of Science Degree follows the standards published by the British Columbia Council on Admissions & Transfer (BCCAT) www.bctransferguide.ca/learn-more-about/associate-degrees/. Accordingly, all courses used as part of the degree must be transferrable to one of the following BC universities: • Simon Fraser University (SFU) • University of British Columbia (Vancouver or Okanagan Campuses) (UBC) • University of Northern British Columbia (UNBC) • University of Victoria (UVic)
Specific Requirements	**Specific Requirements**
English Requirements	**English Requirements**
ENGL 1100 Introduction to University Writing 3	ENGL 1100 Introduction to University Writing 3
Select one additional first year ENGL course	Select one additional first year ENGL course
Math Requirements [1]	**Math Requirements [1]**

Select six credits of university level mathematics, which shall include at least three credits in Calculus.		6	Select six credits of university level mathematics, which shall include at least three credits in Calculus.		6
First Year Science Requirements			**First Year Science Requirements**		
Select six science courses from the following (at least one must be a lab science course):			Select six science courses from the following (at least one must be a lab science course):		
ASTR 1120	Introduction to Astrophysics		ASTR 1120	Introduction to Astrophysics	
BIOL 1110	Introductory Biology I		BIOL 1110	Introductory Biology I	
BIOL 1210	Introductory Biology II		BIOL 1210	Introductory Biology II	
CHEM 1105	Introductory Chemistry [2]		CHEM 1105	Introductory Chemistry [2]	
CHEM 1110	The Structure of Matter		CHEM 1110	The Structure of Matter	
CHEM 1210	Chemical Energetics and Dynamics		CHEM 1210	Chemical Energetics and Dynamics	
CPSC 1100	Introduction to Computer Literacy		CPSC 1100	Introduction to Computer Literacy	
CPSC 1103	Principles of Program Structure and Design I		CPSC 1103	Principles of Program Structure and Design I	
CPSC 1204	Principles of Program Structure and Design II		CPSC 1204	Principles of Program Structure and Design II	
GEOG 1102	Physical Geography		**GEOG 1102**	**Physical Geography**	
MATH 1112	Pre-Calculus [2]		MATH 1112	Pre-Calculus [2]	
MATH 1115	Statistics I		MATH 1115	Statistics I	
MATH 1152	Matrix Algebra for Engineers (if not already counted)		MATH 1152	Matrix Algebra for Engineers (if not already counted)	
PHYS 1100	Introductory Physics [2]		PHYS 1100	Introductory Physics [2]	
PHYS 1101	Physics for Life Sciences I		PHYS 1101	Physics for Life Sciences I	
Or PHYS 1120	Physics for Life Sciences II		Or PHYS 1120	Physics for Life Sciences II	
PHYS 1170	Mechanics I		PHYS 1170	Mechanics I	
Or PHYS 1220	Physics for Physical and Applied Sciences II		Or PHYS 1220	Physics for Physical and Applied Sciences II	
Second Year Science Requirements			**Second Year Science Requirements**		
Select six science courses taken in a minimum of two different subject areas from among the following:			Select six science courses taken in a minimum of two different subject areas from among the following:		
BIOL 2320	Genetics		BIOL 2320	Genetics	
BIOL 2321	Cell Biology		BIOL 2321	Cell Biology	
BIOL 2322	Ecology		BIOL 2322	Ecology	
BIOL 2330	Microbiology		BIOL 2330	Microbiology	
BIOL 2421	Cellular Biochemistry		BIOL 2421	Cellular Biochemistry	
CHEM 2311	Physical Chemistry for Life Sciences		CHEM 2311	Physical Chemistry for Life Sciences	
or CHEM 3310	Physical Chemistry		or CHEM 3310	Physical Chemistry	

CHEM 2315	Analytical Chemistry		CHEM 2315	Analytical Chemistry	
CHEM 2320	Organic Chemistry I		CHEM 2320	Organic Chemistry I	
CHEM 2420	Organic Chemistry II		CHEM 2420	Organic Chemistry II	
CPSC 2302	Data Structures and Algorithms		CPSC 2302	Data Structures and Algorithms	
ENVI 2305	Environmental Toxicology		ENVI 2305	Environmental Toxicology	
GEOG 2310	Climatology		GEOG 2310	Climatology	
GEOG 2320	Geomorphology		GEOG 2320	Geomorphology	
GEOG 2390	Quantitative Methods in Geography		GEOG 2390	Quantitative Methods in Geography	
GEOG 2400	Introduction to GIS		GEOG 2400	Introduction to GIS	
MATH 2232	Linear Algebra		MATH 2232	Linear Algebra	
MATH 2315	Probability and Statistics		MATH 2315	Probability and Statistics	
MATH 2321	Multivariate Calculus (Calculus III)		MATH 2321	Multivariate Calculus (Calculus III)	
or MATH 2821	Multivariate and Vector Calculus		or MATH 2821	Multivariate and Vector Calculus	
MATH 2331	Introduction to Analysis		MATH 2331	Introduction to Analysis	
MATH 2335	Statistics for Life Sciences		MATH 2335	Statistics for Life Sciences	
or MATH 2341	Introduction to Statistics for Business		or MATH 2341	Introduction to Statistics for Business	
MATH 2410	Discrete Mathematics		MATH 2410	Discrete Mathematics	
MATH 3322	Vector Calculus (Calculus IV)		MATH 3322	Vector Calculus (Calculus IV)	
MATH 3421	Ordinary Differential Equations		MATH 3421	Ordinary Differential Equations	
PHYS 2010	Modern Physics		PHYS 2010	Modern Physics	
PHYS 2030	Classical Mechanics		PHYS 2030	Classical Mechanics	
PHYS 2040	Thermal Physics		PHYS 2040	Thermal Physics	
PHYS 2330	Intermediate Mechanics		PHYS 2330	Intermediate Mechanics	
PHYS 2420	Intermediate Electricity and Magnetism		PHYS 2420	Intermediate Electricity and Magnetism	

Additional Courses Requirements	**Additional Courses Requirements**
Select two courses in Arts[3], not counting English (ENGL)	Select two courses in Arts[3], not counting English (ENGL)
Select two additional two courses that are designated as university transferable.	Select two additional two courses that are designated as university transferable.
[1] Most Science degrees require both Calculus I and Calculus II. Institutions have the discretion to set higher standards, including not recognizing MATH 1112. [2] Institutions have the discretion to not recognize CHEM 1105, MATH 1112 or PHYS 1100.	[1] Most Science degrees require both Calculus I and Calculus II. Institutions have the discretion to set higher standards, including not recognizing MATH 1112. [2] Institutions have the discretion to not recognize CHEM 1105, MATH 1112 or PHYS 1100.

³ Any Arts subject area not noted in the science categories above, and includes all geography courses not specified in the science categories above.	³ Any Arts subject area not noted in the science categories above, and includes all geography courses not specified in the science categories above.
Students lacking the appropriate prerequisites will likely require more than two years to complete the Associate of Science. Since the Associate of Science represents completion of one half of a Bachelor of Science degree, as long as appropriate courses are completed at KPU, students should ideally be able to complete their Bachelor of Science in a further two years at the receiving University.	Students lacking the appropriate prerequisites will likely require more than two years to complete the Associate of Science. Since the Associate of Science represents completion of one half of a Bachelor of Science degree, as long as appropriate courses are completed at KPU, students should ideally be able to complete their Bachelor of Science in a further two years at the receiving University.
Credential Awarded Upon successful completion of this program, students are eligible to receive an Associate of Science degree in their chosen subject area.	**Credential Awarded** Upon successful completion of this program, students are eligible to receive an Associate of Science degree in their chosen subject area.

List any new, revised or discontinued courses associated with this program change			
Course Subject Code	Course Number	Descriptive Title, hyperlinked to course outline	New, Revised, or Discontinued

2. Curriculum Consultations

Please consult with the Office of the Provost as additional consultations may be required depending on the scope of the proposed program changes.

For consultees, please consider the following questions when providing your feedback to the Proponent:

- Does your department/unit support the proposed curriculum? Provide rationale for support/non-support.
- How does the proposed curriculum impact your department/unit?
- How does the proposed curriculum impact your program?
- Is there potential for curricular overlap with current offerings?

Name	Department, Program and/or Faculty	Comments	Date Consulted
Brett Favaro	Faculty of Science Dean's Office	Comments: Click or tap here to enter text.	Click or tap to enter a date.
Virginia Vandenberg Click or tap here to enter text.	Curriculum Support team, Office of the Provost	Comments: Advice on drafting program change form.	12/18/2023
Click or tap here to enter text. Click or tap here to enter text.		Comments: Click or tap here to enter text.	Click or tap to enter a date.
Click or tap here to enter text. Click or tap here to enter text.		Comments: Click or tap here to enter text.	Click or tap to enter a date.
Click or tap here to enter text. Click or tap here to enter text.		Comments: Click or tap here to enter text.	Click or tap to enter a date.
Click or tap here to enter text. Click or tap here to enter text.		Comments: Click or tap here to enter text.	Click or tap to enter a date.

3. Financial Assessment Questions

<table>
<tr><td colspan="2" style="background-color:#7a1028;color:white;">Financial Assessment Questions
The following information will help determine whether there is a budgetary impact to the proposed program changes, and what additional information and consultation will be required.

Please note that all additional budgetary requests in support of the proposed program change require approval from the Dean and the Provost, and additional financial documents may be required.</td></tr>
<tr><td>Change in number of credits</td><td>Yes☐ No☒
If Yes, please provide details:</td></tr>
<tr><td>Change in space requirements</td><td>Yes☐ No☒
If Yes, please provide details:</td></tr>
<tr><td>Change in equipment requirements</td><td>Yes☐ No☒
If Yes, please provide details:</td></tr>
<tr><td>Change in support requirements</td><td>Yes☐ No☒
If Yes, please provide details:</td></tr>
</table>

Please attach any financial document if required.