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**MEMORANDUM**

<b>ATTENTION</b> <b>FROM</b>  <b>RE:</b>	Senate Peter Hall, Chair Senate Committee on Undergraduate Studies Course Changes (SCUS 23-104)	<b>DATE</b> <b>PAGES</b>	December 8, 2023 1/2
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**For information:**

Acting under delegated authority at its meeting of December 7, 2023 SCUS approved the following curriculum revisions effective Fall 2024.

**a. Faculty of Applied Sciences**
**1. School of Computing Science**

(i) Prerequisite changes for CMPT 353 and 478

**2. School of Mechatronic Systems Engineering (SCUS 23-91)**

(i) Description and prerequisite changes for MSE 220 (*Fall 2024*)

(ii) Course number, title, units, description, prerequisite and equivalent statement changes for MSE 221 (*Spring 2025*)

(iii) Description and prerequisite changes for MSE 222 (*Fall 2025*)

(iv) Course number, prerequisite and equivalent statement changes for MSE 223 (*Fall 2025*)

(v) Title, description, prerequisite changes and equivalent statement changes for MSE 280 (*Fall 2025*)

(vi) Units change for MSE 310 (*Fall 2024*)

(vii) Title, units and prerequisite changes for MSE 312 (*Fall 2026*)

(viii) Prerequisite and equivalent statement change for MSE 321 (*Fall 2024*)

(ix) Prerequisite change for MSE 320 and 381 (*Fall 2026*)

(x) Title, units, description and prerequisite changes for MSE 352 (*Fall 2026*)

(xi) Prerequisite change for MSE 250 (*Fall 2025*)

## **b. Beedie School of Business**

- (i) Description and prerequisite change for BUS 479
- (ii) Deletion of BUS 459

## **c. Faculty of Communication, Art and Technology**

### **1. Publishing Program**

- (i) Description changes for PUB 480

## **d. Faculty of Science**

### **1. Department of Earth Sciences**

- (i) Description and prerequisite change for EASC 204

### **2. Department of Molecular Biology and Biochemistry**

- (i) Title changes for MBB 445

### **3. Department of Statistics and Actuarial Sciences**

- (i) Units and corequisite changes for STAT 260, 310 and 360
- (ii) Deletion of STAT 261, 311 and 361
- (iii) Prerequisite change for STAT 350, 403, 445, 452, 475 and 485

Senators wishing to consult a more detailed report of curriculum revisions may do so on the Senate Docushare repository at <https://docushare.sfu.ca/dsweb/View/Collection-12682>.

COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number  Units  Prerequisite

Title  Description  Equivalent Statement

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

Basic concepts and programming tools for handling and processing data. Includes data acquisition, cleaning data sources, application of machine learning techniques and data analysis techniques, large-scale computation on a computing cluster.  
Prerequisite: CMPT 225 and (~~STAT 101~~ STAT 201, STAT 203, STAT 205, STAT 270, STAT 271, ENSC 280, or SEE 241), with a minimum grade of C-.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)



**RATIONALE** (must be included)

Remove course that is no longer offered and replace with equivalent courses from BUS and STAT.

<b>COURSE SUBJECT</b>	CMPT	<b>NUMBER</b>	478	<b>TITLE</b>	Current Topics in Quantum Computing (3)
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

Current topics in advanced quantum algorithms and related issues depending on faculty and student interest. Possible topics include the hidden subgroup problem, quantum walk, systems of linear equations, adiabatic quantum computing, quantum system simulation, quantum error correction, quantum circuits and compilation, and quantum machine learning. Prerequisite: CMPT 476 ~~with a minimum grade of C-~~ or CMPT 776 or PHYS 416, ~~with a minimum grade of C- or PHYS 816.~~

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024



**RATIONALE** (must be included)

Correction to previous entry. Graduate courses would not apply as pre-requisites for undergraduate courses.

COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number  Units  Prerequisite   
 Title  Description  Equivalent Statement

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

Materials, their structures, properties and performance; crystal structures and instruments for structure determination; polymers, ceramics, and composites; quality control and reliability. Engineering application of materials.

Prerequisite: CHEM 120 or 121 ; ~~PHYS 140 or 120~~

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)



**RATIONALE** (must be included)

Include additional material within this course. PHYS 140 is no longer required as a pre-req.



COURSE SUBJECT MSE NUMBER 221 TITLE Statics and Strength of Materials

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input checked="" type="checkbox"/>	Units	<input checked="" type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input checked="" type="checkbox"/>	Description	<input checked="" type="checkbox"/>	Equivalent Statement	<input checked="" type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

MSE 221 ~~224~~- ~~Statics and Strength of Materials (4)~~ Strength of Materials (3)

~~Covers fundamental concepts of Statics and Strength of Materials. Statics: 2D and 3D force and moment systems, equilibrium of rigid bodies, analysis of structures, Analysis of statically determinate and indeterminate structures, distributed forces, centroids and moments of inertia. Strength of Materials: Introduction to stress and strain, axial loading, torsion, pure bending, analysis and design of beams for bending and combined loading, deflection of beams; and Transformation of stresses; principle stresses, Mohr's Circle.~~

Prerequisite: ~~PHYS 140~~, MATH 152; and MSE 103.

Students with credit for MSE 221, SEE 221, ENSC 281 or ENSC 385 may not take this course for further credit.

**EFFECTIVE TERM AND YEAR FOR CHANGES**



Fall, Spring, Summer and year (please enter in textbox)

Spring 2025

**RATIONALE** (must be included)

The static part of this course is being moved to MSE 103: Statics and Dynamics. Therefore, this course needs a new name, number, number of credits, description and equivalency.

<b>COURSE SUBJECT</b>	MSE	<b>NUMBER</b>	222	<b>TITLE</b>	Kinematics and Dynamics of Rigid Bodies and Mechanisms
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input checked="" type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

Planar and 3D motions kinematics and kinetics of rigid bodies and mechanisms; linkages, gears, cams; synthesis and analysis of mechanisms; consideration of the static and dynamic forces in machines; ~~vibration analysis, response to shock, impulse and momentum, energy and motion, and force transmissibility, vibration isolation.~~

Prerequisite: ~~PHYS 140, MATH 152, and (MATH 260 or 310).~~ and MSE 103.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025



**RATIONALE** (must be included)

Vibrations are being removed as they are not currently being taught and not considered essential for MSE students, as such the pre-req MATH 260 is not required. Particle dynamics is taught in MSE 103 so a required pre-req.



<b>COURSE SUBJECT</b>	MSE	<b>NUMBER</b>	223	<b>TITLE</b>	Introduction to Fluid Mechanics
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input checked="" type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input checked="" type="checkbox"/>

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MSE ~~223~~ 323 - Introduction to Fluid Mechanics (4)

Prerequisite: ~~PHYS 140~~, MATH 251, and (MSE 103 or SEE 221) (~~MATH 260 or MATH 310~~).

Students with credit for ENSC 283, MSE 223, or SEE 225 may not take ~~MSE 223~~ this course for further credit.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025



**RATIONALE** (must be included)

The original pre-requisites were deemed not required while MSE 103 is a required as it covers topics required for this course.

**COURSE SUBJECT**  **NUMBER**  **TITLE**

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input checked="" type="checkbox"/>	Description	<input checked="" type="checkbox"/>	Equivalent Statement	<input checked="" type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

MSE 280 - ~~Linear Systems~~ Signals and Systems

The objectives of this course are to cover the modelling and analysis of continuous and discrete signals using linear techniques. Topics covered include: ~~a review of Laplace transforms~~; methods for the basic modelling of physical systems; discrete and continuous convolution; impulse and step response; transfer functions and filtering; the continuous Fourier transform and its relationship to the Laplace transform; frequency response and Bode plots; sampling; ~~the Z-transform~~.

Prerequisite: ~~MSE 250 (or ENSC 220) and (MATH 260 or MATH 310)~~. MSE 281 or MATH 260.

Students with credit for ENSC 380 or SEE 341 may not take ~~MSE 280~~ this course for further credit.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025



**RATIONALE** (must be included)

Harmonizing the teaching of control and systems courses to all streamline these courses and remove duplication.





COURSE SUBJECT MSE NUMBER 310 TITLE Sensors and actuators

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number [ ] Units [X] Prerequisite [ ]
Title [ ] Description [ ] Equivalent Statement [ ]

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

The unit is changed from 4 to 3 which is enough to cover material mentioned in description

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

MSE Curriculum reform

Some related material from MSE 310, Sensors and Actuators has been moved to MSE220, Engineering materials to allow more time on the topics covered in MSE 310 and reduce the unit of that



COURSE SUBJECT MSE NUMBER 312 TITLE Mechatronics Design II

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number [ ] Units [X] Prerequisite [X] Title [X] Description [ ] Equivalent Statement [ ]

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

MSE 312 - ~~Mechatronics Design II (4)~~ Mechatronic Design Studio III (3)  
Prerequisite: MSE 212 ~~MSE 110 (or ENSC 182)~~, ~~MSE 320 (or ENSC 382)~~, MSE 222, MSE 381 (or ENSC 383). MSE 381 may be taken concurrently.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2026



**RATIONALE** (must be included)

This is the third course in the Mechatronic Design Studio series, so the name and pre-reqs have changed accordingly.

<b>COURSE SUBJECT</b>	MSE	<b>NUMBER</b>	321	<b>TITLE</b>	Engineering Thermodynamics and Heat Transfer
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input checked="" type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

Prerequisite: MATH 251, ~~PHYS 140~~, and MSE 223.

Students with credit for ENSC 388 may not take ~~MSE 321~~ this course for further credit.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024



**RATIONALE** (must be included)

PHYS 140 is no longer required as a pre-req.



COURSE SUBJECT MSE NUMBER 320 TITLE Machine Design

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

- Course number, Units, Prerequisite, Title, Description, Equivalent Statement checkboxes

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

Prerequisite: MSE 100 or ENSC 104, MSE 212, (MSE 220 or ENSC 231, or SEE 222), MSE 221 or ENSC 281. MSE 100 212 may be taken concurrently.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall, 2026



**RATIONALE** (must be included)

MSE 100 is being removed and MSE 212 covers the required material.





COURSE SUBJECT MSE NUMBER 381 TITLE Feedback Control Systems

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

- Course number, Units, Prerequisite, Title, Description, Equivalent Statement checkboxes

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

Prerequisite: MSE 280 (or ENSC 380); ENSC 380 or MSE 280 or SEE 341.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2026



**RATIONALE** (must be included)

Changes to the original pre-req courses due to harmonization of the control and systems courses.

<b>COURSE SUBJECT</b>	MSE	<b>NUMBER</b>	352	<b>TITLE</b>	Digital Logic and Microcontrollers
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input checked="" type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input checked="" type="checkbox"/>	Description	<input checked="" type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

MSE 352 ~~Digital Logic and Microcontrollers (4)~~ Sequential Logic and Microcontrollers (3)

~~Introduction to digital systems and number representation. Combinational systems and sequential logic. Counter design and registers. Synchronous and asynchronous sequential logic circuits design. Counter design and registers. Introduction to microprocessor/microcontroller applications, memory and I/O systems. Microcontrollers: features, architecture and programming model. Introduction to assembly language and microcontroller programming. Addressing modes, assembling and linking programs. Timer/counter programming. ADC, DAC, and sensor interfacing.~~  
Introduction to digital systems and number representation. Combinational systems and sequential logic. Counter design and registers. Synchronous and asynchronous sequential logic circuits design. Counter design and registers. Introduction to microprocessor/microcontroller applications, memory and I/O systems. Microcontrollers: features, architecture and programming model. Introduction to assembly language and microcontroller programming. Addressing modes, assembling and linking programs. Timer/counter programming. ADC, DAC, and sensor interfacing.  
 Prerequisite: CMPT 130, MSE 252 and ~~either~~ (MSE 251 or ENSC 226 or SEE 231).

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2026



**RATIONALE** (must be included)

Introductory topics moved to MSE 252, therefore credits reduced to 3 and these topics removed from the description. Pre-req includes MSE 252.



COURSE SUBJECT MSE NUMBER 250 TITLE Electric Circuits

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

- Course number, Units, Prerequisite, Title, Description, Equivalent Statement checkboxes

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

Prerequisite: PHYS 141 or (PHYS 121 and 131), MSE 281 (or MATH 260) and MATH 232. and (MATH 260 or MATH 310). (MATH 260 or MATH 310) MSE 281 (or MATH 260) may be taken concurrently.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

FALL 2025



**RATIONALE** (must be included)

Due to changes in the program, MSE 280 content has changed and is now a required course while MATH 260 is no longer a program requirement.

COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number  Units  Prerequisite   
 Title  Description  Equivalent Statement

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

A project study that enables students to work on contemporary business problems, requiring them to apply their foundation knowledge in business and advanced analytical skills. Feasible projects will be identified by the course instructor, ~~in collaboration with the career management office at Beedie~~. Prerequisite: BUS 360W with a minimum grade of C-; 90 75 units. ~~Corequisite: BUS 478.~~

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

**RATIONALE** (must be included)

Reduction of units and the removal of the corequisite reduces some barriers to accessing BUS 479.

COURSE SUBJECT  NUMBER  TITLE

**RATIONALE** (must be included)

Course was last offered Fall 2017 and Summer 2014 with no plans to offer in the future.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (enter in textbox)

**PLEASE DO THE FOLLOWING:**

1. Attach a program impact list along with your course deletion form. Contact the Senate and Academic Services Office (sfucal@sfu.ca) for a program impact list.
2. Once you have the program impact list, please review how deleting this course affects each program's requirements.
3. If more substantial changes are required to programs as a result of this deletion, please also submit a program modification form.
4. If no further changes other than deletion is required in program requirements, please list those programs in the box below:

Completed October 25, 2023

Program Impact list for BUS 459 - Services Marketing:

This course is referenced in the following programs:

Business (Honours)

Business (Major)

5. Lastly, please conduct a course impact analysis, which reviews the effect of a course number change and/or course deletion on course prerequisites. For instructions on how to do a course impact analysis, please visit [our page](#) and click on "deleting a course" and review Step 2. Course Impact Analysis.



COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number  Units  Prerequisite   
 Title  Description  Equivalent Statement

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

Intensive analysis of a particular topic, practice, or technique in publishing. ~~May repeat~~ This course can be repeated for credit up to a maximum of two times, if topic studied is different. Prerequisite: 75 units.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)



**RATIONALE** (must be included)

Additional language to clarify that students cannot take the same PUB 480 topic more than once.

COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number  Units  Prerequisite   
 Title  Description  Equivalent Statement

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

Description, classification and interpretation of ~~e~~EEarth structures: folds, faults, joints, cleavage and lineations. Elementary rock mechanics.

Prerequisite: ~~EASC 210~~, EASC 101, PHYS 101 or 120 or 125 or 140. All with a grade of C- or better.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

**RATIONALE** (must be included)

EASC 204 content presupposes that students do not have a grounding in structural geology, and so all introductory concepts are presented in the course. Completion of EASC 101 (the prerequisite for EASC 210) is sufficient for students to successfully complete EASC 204. This change also increases flexibility for students within and outside the department.



COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input type="checkbox"/>
Title	<input checked="" type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

~~Advanced Microbial Pathogenesis~~  
Infectious Disease Mechanisms

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)



**RATIONALE** (must be included)

The course name change more accurately reflects the course content and is expected to appeal to a greater number of students.

<b>COURSE SUBJECT</b>	STAT	<b>NUMBER</b>	260	<b>TITLE</b>	Introductory R for Data Science
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input checked="" type="checkbox"/>	Corequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 260 - Introductory R for Data Science (~~2~~) (3)**

An introduction to the R programming language for data science. Exploring data: visualization, transformation and summaries. Data wrangling: reading, tidying, and data types. No prior computer programming experience required. Prerequisite: One of STAT 201, STAT 203, STAT 205, STAT 270, BUS 232, ECON 233, or POL 201, with a grade of at least C- or permission of the instructor. ~~Corequisite: STAT 261.~~ Students who have taken STAT 341 or STAT 360 first may not then take this course for further credit.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

Currently we have the corequisite courses STAT 260-2 (lecture component) and STAT 261-1 (lab component). This is functionally one course but the course codes were separated into corequisite courses to allow for other departments to create their own lab course to pair with STAT 260-2. Unfortunately that never came to fruition, and because this is causing a number of administrative issues, the department would like to collapse these course codes together into one course: STAT 260-3. Everything about the course will remain the same (i.e. number of weekly lecture/lab hours), just with one course code instead of two.



<b>COURSE SUBJECT</b>	STAT	<b>NUMBER</b>	310	<b>TITLE</b>	Introduction to Data Science for the Social Sciences
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input checked="" type="checkbox"/>	Corequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 310 - Introduction to Data Science for the Social Sciences ~~(2)~~ (4)**

An introduction to modern tools and methods for data acquisition, management, visualization, and machine learning, capable of scaling to Big Data. No prior computer programming experience required. Examples will draw from the social sciences. This course may not be used to satisfy the upper division requirements of the statistics honours, major, or minor programs. Prerequisite: 60 units in subjects outside of the Faculties of Science and Applied Sciences and one of STAT 201, STAT 203, STAT 205, STAT 270, BUS 232, ECON 233, or POL 201, with a minimum grade of C-. ~~Corequisite: STAT 311.~~ Students who have taken STAT 240, STAT 440, or any 200-level or higher CMPT course first may not then take this course for further credit. Quantitative.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

Currently we have the corequisite courses STAT 310-2 (lecture component) and STAT 311-2 (lab component). This is functionally one course but the course codes were separated into corequisite courses to allow for other departments to create their own lab course to pair with STAT 310-2. Unfortunately that never came to fruition, and because this is causing a number of administrative issues, the department would like to collapse these course codes together into one course: STAT 310-4. Everything about the course will remain the same (i.e. number of weekly lecture/lab hours), just with one course code instead of two.

**COURSE SUBJECT**  **NUMBER**  **TITLE**

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input checked="" type="checkbox"/>	Corequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using strike-through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 360 - Advanced R for Data Science ~~(2)~~ (3)**  
 Advanced R programming methods for data science. Tools for reproducible research. Version control. Data structures, subsetting, functions, environments, and debugging. Functional programming. Code performance: profiling, memory, integrating R and C++. Prerequisite: One of STAT 260 or STAT 341 and one of STAT 302, STAT 305, STAT 350, or ECON 333, all with a minimum grade of C-. CMPT 125 or CMPT 129 is also recommended. ~~Corequisite: STAT 361.~~

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

Currently we have the corequisite courses STAT 360-2 (lecture component) and STAT 361-1 (lab component). This is functionally one course but the course codes were separated into corequisite courses to allow for other departments to create their own lab course to pair with STAT 360-2. Unfortunately that never came to fruition, and because this is causing a number of administrative issues, the department would like to collapse these course codes together into one course: STAT 360-3. Everything about the course will remain the same (i.e. number of weekly lecture/lab hours), just with one course code instead of two.



COURSE SUBJECT STAT NUMBER 261 TITLE Laboratory for Introductory R for Data Science

RATIONALE (must be included)

STAT 261-1 is the lab component (and current corequisite) of the Introduction to R course (STAT 260-2). We would like to collapse this lab component into STAT 260-3. This will render the course code STAT 261 unnecessary.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (enter in textbox)

Fall 2024

PLEASE DO THE FOLLOWING:

- 1. Attach a program impact list along with your course deletion form. Contact the Senate and Academic Services Office (sfucal@sfu.ca) for a program impact list.
2. Once you have the program impact list, please review how deleting this course affects each program's requirements.
3. If more substantial changes are required to programs as a result of this deletion, please also submit a program modification form.
4. If no further changes other than deletion is required in program requirements, please list those programs in the box below:

Program impact list for STAT 261:

Actuarial Science Honours
Actuarial Science Major
Data Science Honours
Data Science Major
Statistics Honours
Statistics Major
Statistics Minor

[The Department of Statistics and Actuarial Science is proposing changes alongside this request, to remove STAT 261 as a requirement for the above programs]

Business and Economics Joint Honours
Business and Economics Joint Major
Economics Honours
Economics Major

- 5. Lastly, please conduct a course impact analysis, which reviews the effect of a course number change and/or course deletion on course prerequisites. For instructions on how to do a course impact analysis, please visit our page and click on "deleting a course" and review Step 2. Course Impact Analysis.

COURSE SUBJECT  NUMBER  TITLE

**RATIONALE** (must be included)

STAT 311-2 is the lab component (and current corequisite) of the Data Science Laboratory for the Social Sciences (STAT 310-2). We would like to collapse this lab component into STAT 310-4. This will render the course code STAT 311 unnecessary.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (enter in textbox)

**PLEASE DO THE FOLLOWING:**

1. Attach a program impact list along with your course deletion form. Contact the Senate and Academic Services Office (sfucal@sfu.ca) for a program impact list.
2. Once you have the program impact list, please review how deleting this course affects each program's requirements.
3. If more substantial changes are required to programs as a result of this deletion, please also submit a program modification form.
4. If no further changes other than deletion is required in program requirements, please list those programs in the box below:

Program impact list for STAT 311:

Business and Economics Joint Honours  
Business and Economics Joint Major  
Economics Honours  
Economics Major  
Political Science and Economics Joint Major  
Social Data Analytics Minor

[I have been in contact with Anthea Pasin in Economics, who is looking after getting STAT 311 removed from the above programs. This will also be effective for Fall 2024]

5. Lastly, please conduct a course impact analysis, which reviews the effect of a course number change and/or course deletion on course prerequisites. For instructions on how to do a course impact analysis, please visit [our page](#) and click on "deleting a course" and review Step 2. Course Impact Analysis.

COURSE SUBJECT  NUMBER  TITLE

**RATIONALE** (must be included)

STAT 361-1 is the lab component (and current corequisite) of the Advanced R course (STAT 360-2). We would like to collapse this lab component into STAT 360-3. This will render the course code STAT 361 unnecessary.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (enter in textbox)

**PLEASE DO THE FOLLOWING:**

1. Attach a program impact list along with your course deletion form. Contact the Senate and Academic Services Office (sfucal@sfu.ca) for a program impact list.
2. Once you have the program impact list, please review how deleting this course affects each program's requirements.
3. If more substantial changes are required to programs as a result of this deletion, please also submit a program modification form.
4. If no further changes other than deletion is required in program requirements, please list those programs in the box below:

Program impact list for STAT 361:

Actuarial Science Honours

Actuarial Science Major

Statistics Honours

Statistics Major

Statistics Minor

Data Science Honours - Added to program in S.23-51 (p. 141 - 156), but pending Ministry review.

Data Science Major - Added to program in S.23-51 (p. 122 - 129), but pending Ministry review.

[The Department of Statistics and Actuarial Science is proposing changes alongside this request, to remove STAT 361 as a requirement for the above programs]

Social Data Analytics Minor

[I have been in contact with Anthea Pasin in Economics, who is looking after getting STAT 361 removed from the Social Data Analytics minor. This will also be effective for Fall 2024]

5. Lastly, please conduct a course impact analysis, which reviews the effect of a course number change and/or course deletion on course prerequisites. For instructions on how to do a course impact analysis, please visit [our page](#) and click on "deleting a course" and review Step 2. Course Impact Analysis.



<b>COURSE SUBJECT</b>	STAT	<b>NUMBER</b>	350	<b>TITLE</b>	Linear Models in Applied Statistics
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 350 - Linear Models in Applied Statistics (3)**  
 Theory and application of linear regression. Normal distribution theory. Hypothesis tests and confidence intervals. Model selection. Model diagnostics. Introduction to weighted least squares and generalized linear models. Prerequisite: STAT 260 and one of STAT 285, MATH 251, and one of MATH 232 or MATH 240, all with a minimum grade of C-. Quantitative.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

STAT 260 is an introduction to R course. R is used significantly in STAT 350, so STAT 260 should be a prerequisite for it.





<b>COURSE SUBJECT</b>	STAT	<b>NUMBER</b>	403	<b>TITLE</b>	Intermediate Sampling and Experimental Design
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 403 - Intermediate Sampling and Experimental Design (3)**  
 A practical introduction to useful sampling techniques and intermediate level experimental designs. This course may not be used to satisfy the upper division requirements of the Statistics major or honours program. Prerequisite: STAT 260 and one of STAT 302, 305 or 350 or ECON 333, all with a minimum grade of C-. Students with credit for STAT 410 or 430 may not take STAT 403 for further credit. Quantitative.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

STAT 260 is an introduction to R course. R is used significantly in STAT 403, so STAT 260 should be a prerequisite for it.



COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike-through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 445 - Applied Multivariate Analysis (3)**  
 Introduction to principal components, cluster analysis, and other commonly used multivariate techniques. Prerequisite: STAT 260 and one of STAT 285 or STAT 302 or STAT 305 or ECON 333 or equivalent, with a minimum grade of C-. Quantitative.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

STAT 260 is an introduction to R course. R is used significantly in STAT 445, so STAT 260 should be a prerequisite for it.

<b>COURSE SUBJECT</b>	STAT	<b>NUMBER</b>	452	<b>TITLE</b>	Statistical Learning and Prediction
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**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 452 - Statistical Learning and Prediction (3)**

An introduction to the essential modern supervised and unsupervised statistical learning methods. Topics include review of linear regression, classification, statistical error measurement, flexible regression and classification methods, clustering and dimension reduction. Prerequisite: STAT 260 and one of STAT 302 or STAT 305 or STAT 350 or ECON 333 or equivalent, with a minimum grade of C-. Quantitative.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

STAT 260 is an introduction to R course. R is used significantly in STAT 452, so STAT 260 should be a prerequisite for it.



COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 475 - Applied Discrete Data Analysis (3)**  
 Introduction to standard methodology for analyzing categorical data including chi-squared tests for two- and multi-way contingency tables, logistic regression, and loglinear (Poisson) regression. Prerequisite: STAT 260 and one of STAT 302 or STAT 305 or STAT 350 or ECON 333 or equivalent, with a minimum grade of C-. Students with credit for the former STAT 402 or 602 may not take this course for further credit. Quantitative.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

STAT 260 is an introduction to R course. R is used significantly in STAT 475, so STAT 260 should be a prerequisite for it.



COURSE SUBJECT  NUMBER  TITLE

**TYPE OF CHANGES.** Please type 'X' for the appropriate revision(s):

Course number	<input type="checkbox"/>	Units	<input type="checkbox"/>	Prerequisite	<input checked="" type="checkbox"/>
Title	<input type="checkbox"/>	Description	<input type="checkbox"/>	Equivalent Statement	<input type="checkbox"/>

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under [Information about specific course components](#) if changing equivalent statement(s).

**STAT 485 - Applied Time Series Analysis (3)**  
 Introduction to linear time series analysis including moving average, autoregressive and ARIMA models, estimation, data analysis, forecasting errors and confidence intervals, conditional and unconditional models, and seasonal models. Prerequisite: STAT 260 and one of STAT 285 or STAT 302 or STAT 305 or ECON 333 or equivalent, with a minimum grade of C-. ~~This course may not be taken for further credit by students who have credit for ECON 484. Students with credit for ECON 484 may not take this course for further credit.~~ Quantitative.

**EFFECTIVE TERM AND YEAR FOR CHANGES**

Fall, Spring, Summer and year (please enter in textbox)

Fall 2024

**RATIONALE** (must be included)

STAT 260 is an introduction to R course. R is used significantly in STAT 485, so STAT 260 should be a prerequisite for it.