SFU OFFICE OF THE ASSOCIATE VICE-PRESIDENT, ACADEMIC

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MEMORANDUM

ATTENTION	Senate	**DATE**	January 10, 2020
FROM	Wade Parkhouse, Chair	**PAGES**	1/2
	Senate Committee on		
	Undergraduate Studies		
RE:	Course Changes (SCUS 20-01)		

For information:

Acting under delegated authority at its meeting of January 9, 2020 SCUS approved the following curriculum revisions effective Fall 2020.

a. Faculty of Applied Sciences

1. School of Computing Science

(i) Prerequisite change for CMPT 371
(ii) Prerequisite and description change for CMPT 376W

b. Faculty of Arts and Social Sciences

1. Department of Psychology

(i) Prerequisite change for PSYC 425 and 426 adding an amendment to the Criminal Record Check section (Summer 2020)

c. Beedie School of Business

(i) Equivalent statement change for BUS 200, 201, and 202
(ii) Description and prerequisite change for BUS 336

d. Faculty of Science

1. Department of Biomedical Physiology and Kinesiology

(i) Deletion of BPK 324, 417W,
(ii) Equivalent statement change for BPK 325, 417
(iii) Title and prerequisite change for BPK 443

2. Department of Chemistry

(i) Prerequisite change for CHEM 364

3. Department of Earth Sciences

(i) Prerequisite change for EASC 401

4. Department of Mathematics

(i) Course number change for MATH 310
(ii) Prerequisite changes for MATH 314, MACM 416, MATH 418 and 462
(iii) Course number, title, description, prerequisite change and equivalency statement for MATH 461
(iv) Title, description and prerequisite change for MATH 348

5. Department of Molecular Biology and Biochemistry

(i) Prerequisite change for MBB 326

6. Department of Physics

(i) Prerequisite change for PHYS 211, 255, 384, 385, 395, and 413
(ii) Prerequisite and equivalency statement changes to 321

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.

SFU

COURSE MODIFICATION FORM

COURSE SUBJECT	CMPT	**NUMBER**	371	**TITLE**	Data Communications and Networking (3)

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 <u>underline</u>. 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: CMPT 225, ~~(CMPT 150, ENSC 150 or CMPT 295)~~ and <u>(</u>MATH 151 <u>or</u> MATH 150<u>)</u>. MATH 154 or <u>MATH</u> 157 with a grade of at least B+ may be substituted for MATH 151 (MATH 150).

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> The reason CMPT 150/CMPT 295 is a prerequisite is a matter of history.
>
> The learning outcomes for CMPT 295 do not match the learning incomes of CMPT 371.

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE SUBJECT	CMPT	**NUMBER**	376w	**TITLE**	Technical Writing and Group Dynamics (3)

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 <u>underline</u>. 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).

Covers professional writing in computing science, including format conventions and technical reports. <u>Attention is paid to</u> ~~examines~~ group dynamics, including team leadership, dispute resolution<u>, cognitive bias, professional ethics</u> and collaborative writing. ~~Also covers~~ Research methods <u>are also discussed. The use of LaTeX and various version control tools are emphasized.</u> Prerequisites:<u> CMPT 105W </u>and (CMPT 275 or CMPT 276). Students with credit for CMPT 376 may not take this course for further credit. Writing.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

CMPT 105W is added as an additional prerequisite, thereby making the two W Computing courses a consistent full year technical writing module in the department.

FACULTY OF ARTS AND SOCIAL SCIENCES
Office of the Dean

MEMORANDUM

ATTENTION Wade Parkhouse, Chair   **DATE** 2 December 2019
Senate Committee on
Undergraduate Studies

FROM Catherine Murray, Chair   **PAGES** 3
Faculty of Arts and Social Sciences
Undergraduate Curriculum Committee

RE: Course Changes- Amendment to SCUS 19-57-8(i)- PSYC 425 and PSYC 426

The Faculty of Arts and Social Sciences approved two new course proposals, PSYC 425 and PSYC 426 at the FASSUCC meeting of Thursday, October 17, 2019. However, the Associate Dean, acting under delegated authority approves the amendment to the Criminal Record Check sections for both courses, changing from "not required" to "required" at the request of the Department of Psychology. Participation will be subject to a criminal record check if the hosts/community partners requires it.

Please place these items on the agenda for the next SCUS meeting.

CM:ws

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COURSE MODIFICATION FORM

Page 1 of 1

COURSE SUBJECT	PSYC	NUMBER	425	TITLE	Field School I

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).

> Prerequisite: 30 units, PSYC 201, other prerequisites vary by topic offering, permission from the Field School Director. <u>Students may be required to successfully complete a Criminal Record Check depending on the site of the field school and the community partners involved.</u>

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Summer 2020

RATIONALE (must be included)

> The field school being offered in Vanuatu in Summer 2020 will have students working with children and vulnerable populations so the Criminal Record Check needs to be added.

November 2016

COURSE SUBJECT	PSYC	**NUMBER**	426	**TITLE**	Field School II

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).

> Prerequisite: 30 units, PSYC 201, other prerequisites vary by topic offering, permission from the Field School Director. Students may be required to successfully complete a Criminal Record Check depending on the site of the field school and the community partners involved.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Summer 2020

RATIONALE (must be included)

> The field school being offered in Vanuatu in Summer 2020 will have students working with children and vulnerable populations so the Criminal Record Check needs to be added.

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COURSE MODIFICATION FORM

| COURSE SUBJECT | BUS | NUMBER | 200 | TITLE | Business Fundamentals |

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 <u>underline</u>. 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).

> Explore the fundamentals of modern business and organizational management. Working with case studies, students will build upon the basics of revenue, profits, contribution and costs, as well as integrate advanced aspects of business models, innovation, competitive advantage, core competence, and strategic analysis. Breadth-Social Sciences. <u>Students with credit for BUS 130 or 201 may not receive further credit for this course.</u>

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> BUS 200 & BUS 201 are very similar in terms of content (although BUS 201 has additional co-curricular components) and should be considered equivalent. Business students admitted to Beedie in their first year are required to take BUS 201 and BUS 200 is for students outside of the Business Major or in the Business Minor. BUS 130 was an earlier iteration of BUS 201 that is no longer offered.

COURSE SUBJECT	BUS	NUMBER	201	TITLE	Introduction to Business

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 <u>underline</u>. 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 management and operation of business, including the principles, concepts, ideas and tools used by managers. Management in the contemporary world of high technology is emphasized, featuring examples and cases involving high-tech firms. In addition, the course exposes students to international and local business issues, and to large companies as well as to smaller, entrepreneurial firms. Prerequisite: This course is only open to approved Business Administration majors admitted to the faculty through the Business Foundation Program - High School Stream. Students with credit for BUS 130 or <u>200</u> ~~202 or 301~~ may not receive further credit for this course, nor students with more than 30 units.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> BUS 200 & BUS 201 are very similar in terms of content (although BUS 201 has additional co-curricular components) and should be considered equivalent. Business students admitted to Beedie in their first year are required to take BUS 201 and BUS 200 is for students outside of the Business Major or in the Business Minor. BUS 202 has dissimilar content and focuses more on team learning, collaboration, and an experiential product development project, so we are removing that equivalency. BUS 301 was essentially a pilot for BUS 202 and was replaced by BUS 202 in Fall 2014 and was only offered twice (Fall 2013 & Spring 2014) to transfer students.

COURSE SUBJECT	BUS	NUMBER	202	TITLE	Foundations for Collaborative Work Environments

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 <u>underline</u>. 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 demand for innovation in the context of a globalized workforce has raised the importance of developing collaborative skills and managing workplace diversity. Foundations for Collaborative Work Environments expands students' skills in effectively collaborating with others while participating in the Beedie Product Management Experience to achieve team and business objectives. Prerequisite: This course is only open to approved Business Administration majors, joint majors, or second degree students admitted to the faculty through the Business Foundation Program - Transfer Stream. ~~Students with credit for BUS 130 or 201 or 301 may not receive further credit for this course.~~

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

BUS 200 & BUS 201 are very similar in terms of content (although BUS 201 has additional co-curricular components) and should be considered equivalent. Business students admitted to Beedie in their first year are required to take BUS 201 and BUS 200 is for students outside of the Business Major or in the Business Minor. BUS 202 has dissimilar content and focuses more on team learning, collaboration, and an experiential product development project, so we are removing that equivalency. BUS 301 was essentially a pilot for BUS 202 and was replaced by BUS 202 in Fall 2014 and was only offered twice (Fall 2013 & Spring 2014) to transfer students. BUS 130 was an earlier iteration of BUS 201 and is no longer offered.

SFU SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE SUBJECT	BUS	NUMBER	336-4	TITLE	Data and Decisions II

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 <u>underline</u>. 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).

> This course is an extension of ~~BUEC~~ <u>BUS</u> 232. It develops and applies the quantitative models that are most directly relevant to business decisions. Beginning with material on multiple regression and forecasting modeling, the course moves on to decision analysis, business simulation, quality control, and an introduction to optimization. Prerequisite: MATH 150, MATH 151, MATH 154, or 157; ~~BUEC~~ <u>BUS</u> 232 or STAT 270; 45 units. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> Beginning in the Fall 2019 term, BUEC 232 Data and Decisions I (4) was integrated into Business and changed to BUS 232 Data and Decisions I (4). BUEC 232 and BUS 232 are directly equivalent.
> The description for BUS 336 still references BUEC 232 and should be updated to reflect that this course is now offered as BUS 232.

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EXISTING COURSE DELETION FORM
1 OF 1 PAGE

COURSE SUBJECT BPK **NUMBER** 324 **TITLE** Principles of Human Anatomy

RATIONALE (must be included)

The course has never been offered and there is not a plan to offer it in the future.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (enter in textbox) Fall 2020

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:

1. Biomedical Physiology Minor - program modification form submitted along with this motion.
2. BPK 325 course equivalent statement modification submitted along with this motion.

Hi Ryan,

Here's the program impact list for BPK 324:

Biomedical Physiology Minor

Regards,

Annie Young | Program Assistant
Senate & Academic Services | Simon Fraser University
8888 University Drive | Burnaby, BC V5A 1S6
778-782-3792

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 BPK   **NUMBER** 417W   **TITLE** Obesity, Adipocyte Function and Weight Man⊞

RATIONALE (must be included)

The course will not be offered it in the future. BPK will continue to offer BPK 417.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (enter in textbox)   Fall 2020

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:

1. Kinesiology Major and Honours Program change form submitted along with this motion.
2. Biomedical Physiology Major and Honours Program changes passed through SCUS July 4th, 2019.
3. Removal of equivalency statement within BPK 417 submitted along with this motion.

Hi Ryan,

Here's the program impact list for BPK 417W:

Biomedical Physiology Major
Biomedical Physiology Honours
Kinesiology Major
Kinesiology Honours

Regards,

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.

SFU

COURSE SUBJECT | BPK | **NUMBER** | 325 | **TITLE** | Basic Human Anatomy

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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).

> Students with credit for ~~BPK 324 or~~ BPK 326 may not take this course for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> BPK 324 has never been offered and there is no plan to offer it in the future.
>
> A motion to delete BPK 324 has been put forward.

SFU

COURSE SUBJECT	BPK	NUMBER	417	TITLE	Obesity, Adipocyte Function and Weight Management

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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 <u>underline</u>. 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).

> Prerequisites: BPK 110, 306, 340. ~~Students with credit for BPK 417 W may not repeat this course for further credit.~~

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> BPK 417W is being deleted. BPK 417W has never been scheduled. KIN 417W was scheduled once in Spring 2012.

SFU
SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

| COURSE SUBJECT | BPK | NUMBER | 443 | TITLE | Advanced Exercise Prescription |

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 <u>underline</u>. 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 <u>Information about specific course components</u> if changing equivalent statement(s).

Advanced Exercise <u>Programming</u> ~~Prescription~~

Prerequisite: BPK 304W, 310 and 343 <u>(one of which may be taken as a co-requisite).</u>

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

Title: The term 'prescription' implies a one-time course of action, whereas the course discusses systematic long-term integrated program development. The term programming is also used within the course description.

Prerequisites: The prerequisites each provide assurance that the student is prepared for parts of the course and that the student is senior enough to benefit from the course. Students taking any one of the courses concurrently will be able to perform well. Adding this flexibility will allow more students to select this course as an option, as any of these third-year courses could be left until late in their program.

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SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE SUBJECT | CHEM | **NUMBER** | 364 | **TITLE** | Quantum Chemistry

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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 <u>underline</u>. 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 <u>Information about specific course components</u> if changing equivalent statement(s).

> Quantum Chemistry CHEM 364 (3)
>
> Fundamentals of quantum mechanics and its principal results and techniques as applied to atoms and molecules: atomic structure, molecular bonding, rotations and vibrations of molecules, symmetry of atomic and molecular orbitals. Prerequisite: CHEM 260 or PHYS 285, MATH 232, and MATH 251, all with a minimum grade of C-. Recommended: <u>MATH 260 or</u> MATH 310. Students with credit for CHEM 464 may not take this course for further credit. PHYS 385 will be accepted in lieu of CHEM 364.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> MATH 310 is being renumbered as MATH 260 but is unchanged in all other respects.

November 2016

SFU

| COURSE SUBJECT | EASC | NUMBER | 401 | TITLE | Mineral Deposits |

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).

> The petrology and genesis of metalliferous ore deposits; description of classic ore deposits; the occurrence and exploitation of industrial and non-metallic minerals. Prerequisite: EASC 201, 204, 208, and 301 ~~and 311~~. All with a grade of C- or better.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

SFU SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

RATIONALE (must be included)

1. Minor changes to EASC 401 content no longer require EASC 311 as a prerequisite.

2. Removal of the EASC 311 prerequisite provides greater access to EASC 401 for Earth Science majors.

SFU
SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

| COURSE SUBJECT | MATH | NUMBER | 310 | TITLE | Introduction to Ordinary Differential Equations |

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).

~~310~~

260

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

In the BC transfer guide our 310 gives 2xx credit at every other institution (for example, MATH 215 at UBC and 201 at UVIC). Most every math department in North America offers a first course in this topic in the second year. At SFU, ENSC students are advised to take it in their third semester. Some programmes teach this in first year.

We would like to bring SFU in line with the rest of BC by renumbering MATH 310 as MATH 260 without changing the content.

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

| COURSE SUBJECT | MATH | NUMBER | 314 | TITLE | Introduction to Fourier Methods and Partial DIfferential Equations |

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).

Fourier series, ODE boundary and eigenvalue problems. Separation of variables for the diffusion wave and Laplace/Poisson equations. Polar and spherical co-ordinate systems. Symbolic and numerical computing, and graphics for PDEs. Prerequisite: MATH 260 or MATH 310; and one of MATH 251 with a grade of B+, or one of MATH 252 or 254. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

MATH 310 is being renumbered as MATH 260 but is unchanged in all other respects.

SFU

COURSE SUBJECT	MACM	NUMBER	416	TITLE	Numerical Analysis II

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).

> The numerical solution of ordinary differential equations and elliptic, hyperbolic and parabolic partial differential equations will be considered. Prerequisite: (MATH 260 or MATH 310) and MACM 316. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

RATIONALE (must be included)

MATH 310 is being renumbered as MATH 260 but is unchanged in all other respects.

COURSE SUBJECT	MATH	**NUMBER**	418	**TITLE**	Partial Differential Equations

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).

First-order linear equations, the method of characteristics. The wave equation. Harmonic functions, the maximum principle, Green's functions. The heat equation. Distributions and transforms. Higher dimensional eigenvalue problems. An introduction to nonlinear equations. Burgers' equation and shock waves. Prerequisite: (MATH 260 or MATH 310) and one of MATH 314, 320, 322, PHYS 384. An alternative to the above prerequisite is both of (MATH 252 or 254) and (MATH 260 or 310), both with grades of at least A-. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

November 2016

RATIONALE (must be included)

MATH 310 is being renumbered as MATH 260 but is unchanged in all other respects.

SFU

| **COURSE SUBJECT** | MATH | **NUMBER** | 462 | **TITLE** | Fluid Dynamics |

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).

> Incompressible fluid flow phenomena: kinematics and equations of motion, viscous flow and boundary layer theory, potential flow, water waves. Aerodynamics. Prerequisite: one of MATH 314, MATH 418, PHYS 384. An alternative to the above prerequisite is both of MATH 251 and (MATH 260 or MATH 310), both with grades of at least B+. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

RATIONALE (must be included)

MATH 310 is being renumbered as MATH 260 but is unchanged in all other respects.

SFU

COURSE SUBJECT	MATH	**NUMBER**	461	**TITLE**	Continuous Mathematical Models

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).

~~461~~

360

~~Continuous Mathematical Models~~ Modeling with Ordinary Differential Equations MATH ~~461~~ 360 (3)

Formulation, analysis and ~~numerical solution~~ simulation of continuous mathematical models. Applications may be selected from topics in physics, biology, engineering and economics. Prerequisite: MATH ~~310~~ 251 and MATH 260. ~~and one of MATH 314, MACM 316, MATH 418, PHYS 384. An alternative to the above prerequisite is both of MATH 251 and MATH 310, both with grades of at least B+.~~ Students with credit for MATH ~~361~~ 461 or MATH 761 may not complete this course for further credit. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

SFU SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

Fall 2020

RATIONALE (must be included)

In conjunction with moving MATH 310 to MATH 260 we are modifying one the classes that required 310 required. The removal of additional upper division prerequisites reflects how the class has been recently taught. These changes will make the class more accessible to both major and minor students.

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE SUBJECT	MATH	**NUMBER**	348	**TITLE**	Probabilistic Models in Operations Research

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).

~~Probabilistic Models in Operations Research~~

Introduction to Probabilistic Models

MATH 348 (3)
~~Inventory theory, Markov decision process and applications, queuing theory, forecasting models, decision Analysis and games, probabilistic dynamic programming, simulation modeling, project planning using PERT/CPM, sequencing and scheduling.~~ Review of the basics of probability, including sample space, random variables, expectation and conditioning. Applications of Markov chains, the exponential distribution and the Poisson process from science and industry. Applications may include inventory theory, queuing, forecasting, scheduling and simulation. Prerequisite: STAT 270 and (MATH 232 or MATH 240). ~~Pre-/Co-requisite: MATH 308.~~ Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

In conjunction with moving MATH 310 to MATH 260 we are modifying one the classes that required 310 required. The removal of additional upper division prerequisites reflects how the class has been recently taught. These changes will make the class more accessible to both major and minor students.

SFU

SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE SUBJECT	MBB	NUMBER	326	TITLE	Introduction to the immune system

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

Course number ☐   Units ☐   Prerequisite X

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).

> Introduction to the structure and function of the immune system and how this system protects against microbial infections. Innate immune responses, including the function of innate immune cells, receptors and complement. Adaptive immune responses, including the organization of lymphoid organs, development and function of T and B cells, and antibodies. Students with credit for HSCI 426, MBB 426 or HSCI 326 may not take this course for further credit. Prerequisite: MBB 231 with a minimum grade of C.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> A minimum grade for the MBB 231 prerequisite has been added consistent with other MBB UD course prerequisites.

SFU

COURSE SUBJECT PHYS   **NUMBER** 211   **TITLE** Intermediate Mechanics

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 <u>underline</u>. 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).

An intermediate mechanics course covering kinematics, dynamics, calculus of variations and Lagrange's equations, non-inertial reference frames, central forces and orbits, and rigid body motion. Prerequisite: ~~PHYS 126 or 121 or 141, with a minimum grade of C-, (or PHYS 102, with a minimum grade of B);~~ **MATH 251; MATH 232 or MATH 240; PHYS 255 or ENSC 380. All prerequisite courses require a minimum grade of C-.** ~~Corequisite: MATH 251; MATH 232 or 240.~~ Recommended corequisite: MATH **260 or** MATH 310 ~~and PHYS 255~~. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

Rationale: Switching to spring to ease student workload allows changes to prereqs to better prepare students for this challenging course.

SFU

COURSE SUBJECT	PHYS	**NUMBER**	255	**TITLE**	Vibrations and Waves

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 <u>underline</u>. 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 physics of vibrations and waves. Topics include periodic motion, including free and forced oscillations, coupled oscillators, normal modes, and waves in one and higher dimensions. Prerequisite: PHYS 126 or 121 or 141, with a minimum **grade of** C-, ~~grade;~~ or PHYS ~~101 and~~ 102, with a **minimum** grade of B ~~or better~~. Corequisite: MATH 251; MATH 232 or 240. Recommended **corequisite**~~concurrent~~: ~~PHYS 211 and~~ MATH ~~310~~260 **or MATH 310**. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

Changed from Recommended concurrent to Recommended Corequisite to be consistent with other entries. PHYS 211 is no longer taught the same semester, so it is not useful to recommend it as a corequisite. PHYS 101 is a required prerequisite for PHYS 102 so it is not necessary to require it here. Change of number of MATH 310 -> MATH 260.

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UNDERGRADUATE STUDIES

COURSE SUBJECT	PHYS	NUMBER	384	TITLE	Methods of Theoretical Physics I

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 <u>underline</u>. 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 <u>Information about specific course components</u> if changing equivalent statement(s).

> Applications of mathematical methods in physics, differential equations of physics, eigenvalue problems, solutions to wave equations. Prerequisite: MATH 252 or 254; **MATH 260 or** MATH 310; **PHYS 211;** PHYS 255 or ENSC 320~~,~~. **All prerequisite courses require** ~~with~~ a minimum grade of C-. ~~Corequisite: PHYS 211~~. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> Change of number of MATH 310 -> MATH 260. Changes to the schedule allow us to make PHYS 211 a required prerequisite, which will better prepare students for this course.

COURSE SUBJECT	PHYS	**NUMBER**	385	**TITLE**	Quantum Mechanics

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 <u>underline</u>. 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).

Wave mechanics and the Schroedinger equation, the harmonic oscillator, introduction to Dirac notation, angular momentum and spin, the hydrogen atom, atomic structure, time-independent perturbation theory, atomic spectra, and applications. Prerequisite: MATH 252 or 254; PHYS 285 or ENSC 380 or CHEM 260. **All prerequisite courses require** ~~with~~ a minimum grade of C-. **Recommended prerequisites**~~Co-requisite~~: **MATH 260 or MATH 310;** PHYS 211.~~; MATH 310.~~ Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

Change of number of MATH 310 -> MATH 260. PHYS 211 is not a required prerequisite, but will help prepare students for this course.

COURSE SUBJECT | PHYS | **NUMBER** | 395 | **TITLE** | Computational Physics

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).

Computer-based approaches to solving complex physical problems. Includes topics such as Monte-Carlo and molecular dynamics techniques applied to thermal properties of materials; dynamical behavior of systems, including chaotic motion; methods for ground state determination and optimization, including Newton-Raphson, simulated annealing, neural nets, and genetic algorithms: symplectic methods; and analysis of numerical data. Prerequisite: **MATH 260 or** MATH 310~~,~~; PHYS 255~~,~~; CMPT ~~102,~~ 120~~,~~ or equivalent~~,~~. **All prerequisite courses require** ~~with~~ a minimum grade of C-. ~~Recommended: PHYS 344 or equivalent.~~ Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2020

RATIONALE (must be included)

Change of number of MATH 310 -> MATH 260. We are changing our computing requirement to CMPT 120 only. PHYS 344 is no longer recommended.

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SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

COURSE SUBJECT PHYS **NUMBER** 413 **TITLE** Advanced Mechanics

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 <u>underline</u>. 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 <u>Information about specific course components</u> if changing equivalent statement(s).

> Central forces, rigid body motion, small oscillations. Lagrangian and Hamiltonian formulations of mechanics. Prerequisite: PHYS 384, with a minimum grade of C- or permission of the department. Non-physics majors may enter with MATH 252**; MATH 260 or MATH** 310~~and~~**;** PHYS 211~~;~~**. All prerequisite courses require** ~~with~~ **a minimum grade of C-.** Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

> Fall 2020

RATIONALE (must be included)

> Change of number of MATH 310 -> MATH 260.

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COURSE SUBJECT	PHYS	**NUMBER**	321	**TITLE**	Intermediate Electricity and Magnetism

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 <u>underline</u>. 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 <u>Information about specific course components</u> if changing equivalent statement(s).

> Development and application of Maxwell's equations in vector differential form. Notation and theorems of vector calculus; electric charge, fields, potentials, capacitance and field energy; conductors; methods for solving electrostatic problems; electric fields in matter; electrical current and the magnetic field; Ampere's law and the vector potential; magnetic fields in matter; electromotive force, electrical resistance, Faraday's law and inductance; Maxwell's correction to Ampere's law and electromagnetic waves. Prerequisite: PHYS 121 or 126 or 141 (or PHYS 102, with a minimum grade of B); **MATH** 252 or 254; **MATH 260 or** MATH 310~~, with~~. **All prerequisite courses require a** minimum grade of C-, **unless specified.** ~~Students with credit for PHYS 221 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 2020

RATIONALE (must be included)

> Change of number of MATH 310 -> MATH 260. PHYS 221 is no longer offered. Grade requirement added explicitly to be consistent with other courses.

SFU

MEMO

TO: Kris Nordgren, Assistant Registrar, Senate & Academic Services
FROM: Barbara Frisken, Professor and Undergraduate Chair, Department of Physics
CC: David Hik, Professor and Associate Dean of Science

RE: Undergraduate Course changes for the Department of Physics
DATE: December 13, 2019

I recently submitted a number of course change forms for PHYS courses. One of the changes we made was motivated by a change in course numbering for MATH 310 to MATH 260.

I have been advised that we should change the wording in the prerequisite lists in order to leave the option for students to satisfy the prerequisite requirement with MATH 310 for about 5 years.

This impacts course change forms for the following courses:
PHYS 211
PHYS 255
PHYS 321
PHYS 384
PHYS 385
PHYS 395
PHYS 413

Could your office please change the prerequisite or corequisite from MATH 260 to **MATH 260 or MATH 310**. We will need to remove this after the appropriate time. If possible, could you program the deletion of **or MATH 310** after an appropriate time so that this happens automatically?

Thank you,
Barbara