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MEMORANDUM

ATTENTION	Senate	DATE	September 16, 2022
FROM	Elizabeth Elle, Vice-Chair Senate Committee on Undergraduate Studies	PAGES	1/2
RE:	Course Changes		

For information:

Acting under delegated authority at its meeting of September 15, 2022 SCUS approved the following curriculum revisions effective Summer 2023.

a. Faculty of Applied Sciences (SCUS 22-49a)

1. School of Sustainable Energy Engineering

   (i) Equivalent statement changes for SEE 241

b. Faculty of Environment (SCUS 22-49b)

1. Department of Geography

   (i) Prerequisite changes for GEOG 241 and 365

c. Faculty of Applied Sciences (SCUS 22-50a)

1. School of Sustainable Energy Engineering

   (ii) Prerequisite change for SEE 325 and 464

2. School of Engineering Science

   (i) Prerequisite change for ENSC 220

d. Faculty of Communication, Art and Technology (SCUS 22-50b)

1. School of Interactive Arts and Technology

(i) Equivalent statement changes for IAT 106

e. Faculty of Science (SCUS 22-50c)

1. Department of Mathematics

(i) Equivalent Statement change for FAN X99
(ii) Description change for MATH 302, 303 and 304 (Fall 2023)
(iii) Prerequisite changes for MATH 343, 345, 443,467 and 470 (Fall 2023)

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.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	SEE	NUMBER	241	TITLE	Measurement, Analysis and Forecasting

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).

An introduction to methods for collecting and analysing engineering data. Topics include engineering data representation, probability density functions, engineering measurements, error analysis, test of hypotheses, regression, and design of experiments. Prerequisite: PHYS 141, MATH 232. Corequisite: MATH 251. Students with credit for ENSC 280 and MSE 210~~, or STAT 270~~ may not take this course for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Summer 2023

RATIONALE (must be included)

SEE 241 has a lab component and is taught by a P.Eng. designated instructor, which is an important factor in the accreditation process.

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT GEOG **NUMBER** 241 **TITLE** People, Place, Society

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: One of GEOG 100, SA 101, SA 150 or INDG 101.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Summer 2023

RATIONALE (must be included)

Given that spatial concepts taught in GEOG 100 are reviewed at the beginning of the course, these additional introductory Sociology, Anthropology and Indigenous Studies courses would also be acceptable prerequisites.

COURSE SUBJECT	GEOG	NUMBER	365	TITLE	Race, Resistance & Urban Space

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).

Prerequisites: At least 45 units~~, including GEOG 100~~.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Summer 2023

RATIONALE (must be included)

Experience has shown that GEOG 100 is not necessary. Relevant conceptual material is provided in the course, that covers the ground that would be provided by GEOG 100.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	SEE	NUMBER	325	TITLE	Mechanical Design and Finite Element Analysis

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).

Introduction and application of Finite Element Analysis (FEA) to energy systems design problems involving engineering mechanics, heat transfer and machine elements. Includes an introduction to commercial FEA software and applications to practical problems. Concepts relating to engineering mechanics and machine elements are developed in the context of design projects. Prerequisite: SEE 100, SEE 221, ~~SEE 222,~~ and SEE 324.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Summer 2023

RATIONALE (must be included)

The change is suggested by the course instructor. Topics covered in SEE 222 is not relevant to SEE 325.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	SEE	NUMBER	464	TITLE	Energy Systems Modeling for Buildings

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).

Introduction to modelling energy systems for buildings, focusing on the envelope and mechanical systems, and their effects on energy use. Using the applicable codes and standards to define schedules for the buildings, calculate heating and cooling loads, and set sustainability targets. Applying industry standard software to model, and experiment with innovative methods to enhance energy use, and reach sustainability targets. Prerequisite: ~~SEE 352, SEE 324 and SEE 310~~ SEE 310 and SEE 324. MSE students who completed MSE 321 can take this course upon approval of the course instructor.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Summer 2023

RATIONALE (must be included)

All the prior knowledge required for the course is covered in SEE 324 and SEE 352 is not a proper prerequisite anymore.

COURSE SUBJECT	ENSC	NUMBER	220	TITLE	Electric Circuits 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: (PHYS 121 or PHYS 126 or PHYS 141), ENSC 120, MATH 232 and (MATH 260 or MATH 310), all with a minimum grade of C-. ~~MATH 232 and/or~~ MATH 260 may be taken concurrently. Students with credit for MSE 250 or SEE 230 cannot take this course for further credit. Quantitative.

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

Summer 2023

RATIONALE (must be included)

MATH 232 is a pre-requisite for MATH 260.

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	IAT	NUMBER	106	TITLE	Spatial Thinking and Communicating

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).

Introduces the world of 3D thinking, representation and communication, with a focus on spatial thinking. Provides the foundational skills and knowledge needed to understand, create, and use computer-generated 3D representations. Covers the technical bases of representing 3D environments, technical sketching, computer-based modelling (Computer-Aided Design) and physical modelling. Students with credit for SEE 100 cannot take IAT 106 for further credit.

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

Summer 2023

RATIONALE (must be included)

It was brought to our attention that the School of Sustainable Energy Engineering's "Engineering Graphics and Software for Design" (SEE 100) course has a statement indicating that IAT 106 cannot be taken for further credit. After discussion with the faculty members who teach IAT 106 and reviewing the SEE 100 course materials it was determined that IAT 106 should have a similar statement.

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SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	FAN	NUMBER	X99	TITLE	Foundations of Analytical and Quantitative Reasoning

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 who have taken, have received transfer credit for, or are currently taking MATH 150, 151, 154 or 157, or FAN X92 may not take FAN X99 for credit without the permission from the Department of Mathematics.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Summer 2023

RATIONALE (must be included)

FAN X91 and FAN X92 were made into regular courses effective Fall 2022. FAN X99 equivalency statement updated to include FAN X92.

SFU

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT MATH **NUMBER** 302 **TITLE** Mathematical Journeys II (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 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 focused exploration of a special topic (varying from term to term) that builds on mathematical ideas from lower division courses and provides further challenges in quantitative and deductive reasoning. Each Journeys course is designed to appeal particularly to mathematics minor students and others with a broad interest in mathematics. Students may repeat this course for further credit under a different topic. Prerequisite: MATH 152 or 155 or 158, and MATH 232 or 240, all with a minimum grade of C-. There may be additional prerequisites depending on the specific course topic. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Fall 2023

RATIONALE (must be included)

Should have been updated with MATH 301 – Mathematical Journeys I. These are special topics courses where students may repeat subject to a different topic. As the sequence numbering MATH 301-304 only applies to the term of offering (fall/spring over a 2-year cycle) students should not receive further credit for repeating the same Journeys topic (even under a different number). Instances of this should be infrequent (as topics usually do not repeat in a 2-year cycle) and will be dealt with by the topics instructor.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT MATH **NUMBER** 303 **TITLE** Mathematical Journeys III (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 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 focused exploration of a special topic (varying from term to term) that builds on mathematical ideas from lower division courses and provides further challenges in quantitative and deductive reasoning. Each Journeys course is designed to appeal particularly to mathematics minor students and others with a broad interest in mathematics. Students may repeat this course for further credit under a different topic. Prerequisite: MATH 152 or 155 or 158, and MATH 232 or 240, all with a minimum grade of C-. There may be additional prerequisites depending on the specific course topic. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Fall 2023

RATIONALE (must be included)

Should have been updated with MATH 301 – Mathematical Journeys I. These are special topics courses where students may repeat subject to a different topic. As the sequence numbering MATH 301-304 only applies to the term of offering (fall/spring over a 2-year cycle) students should not receive further credit for repeating the same Journeys topic (even under a different number). Instances of this should be infrequent (as topics usually do not repeat in a 2-year cycle) and will be dealt with by the topics instructor.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT MATH **NUMBER** 304 **TITLE** Mathematical Journeys IV (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 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 focused exploration of a special topic (varying from term to term) that builds on mathematical ideas from lower division courses and provides further challenges in quantitative and deductive reasoning. Each Journeys course is designed to appeal particularly to mathematics minor students and others with a broad interest in mathematics. Students may repeat this course for further credit under a different topic. Prerequisite: MATH 152 or 155 or 158, and MATH 232 or 240, all with a minimum grade of C-. There may be additional prerequisites depending on the specific course topic. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Fall 2023

RATIONALE (must be included)

Should have been updated with MATH 301 – Mathematical Journeys I. These are special topics courses where students may repeat subject to a different topic. As the sequence numbering MATH 301-304 only applies to the term of offering (fall/spring over a 2-year cycle) students should not receive further credit for repeating the same Journeys topic (even under a different number). Instances of this should be infrequent (as topics usually do not repeat in a 2-year cycle) and will be dealt with by the topics instructor.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	MATH	NUMBER	343	TITLE	Applied Discrete Mathematics (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 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).

Structures and algorithms, generating elementary combinatorial objects, counting (integer partitions, set partitions, Catalan families), backtracking algorithms, branch and bound, heuristic search algorithms. Prerequisite: MACM 201 (with a minimum grade of ~~at least B-~~ C-). Recommended: knowledge of a programming language. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Fall 2023

RATIONALE (must be included)

Minimum grade requirement no longer of importance. Recent instructors have been waiving students in --- the majority being students who took MACM 201 in their first-year and who have realized a greater interest in more theoretical ideas by their third-year.

COURSE SUBJECT	MATH	NUMBER	345	TITLE	Introduction to Graph Theory (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 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).

Fundamental concepts, trees and distances, matchings and factors, connectivity and paths, network flows, integral flows. Prerequisite: MACM 201 (with a minimum grade of ~~at least B-~~ C-). Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Fall 2023

RATIONALE (must be included)

Minimum grade requirement no longer of importance. Recent instructors have been waiving students in --- the majority being students who took MACM 201 in their first-year and who have realized a greater interest in more theoretical ideas by their third-year.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT MATH **NUMBER** 443 **TITLE** Combinatorial Theory (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 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).

Design theory: Steiner triple systems, balanced incomplete block designs, latin squares, finite geometries. Enumeration: generating functions. Burnside's Lemma, Polya counting. Prerequisite: ~~MATH 340 or 332, with a minimum grade of C- and MACM 201 with a grade of at least B-~~. MATH 340, with a minimum grade of C- and either MATH 343 with a minimum grade of C- or MACM 201 with a minimum grade of B+. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Fall 2023

RATIONALE (must be included)

Adds MATH 343 as a pre-requisite pathway. (MATH 332 is a long defunct course number).

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT MATH **NUMBER** 467 **TITLE** Dynamical Systems (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 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).

Stability and bifurcation in continuous and discrete dynamical systems, with applications. The study of the local and global behaviour of linear and nonlinear systems, including equilibria and periodic orbits, phase plane analysis, conservative systems, limit cycles, the Poincare-Bendixson theorem, Hopf bifurcation and an introduction to chaos. Prerequisite: MATH 260 or MATH 310, with a minimum grade of C-. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES

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

Fall 2023

RATIONALE (must be included)

MATH 310 was simply renumbered to MATH 260 for Fall 2020. Prerequisite updated to include those who have since taken MATH 260.

COURSE SUBJECT MATH **NUMBER** 470 **TITLE** Variational Calculus (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 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).

Procedures of Euler, Lagrange and Hamilton. Extremum problems, stationary values of integrals. Canonical equations of motion, phase space, Lagrangian and Poisson brackets. Prerequisite: (MATH 260 or MATH 310) and one of MATH 314, 320, 322, PHYS 384, all with a minimum grade of C-. An alternative to the above prerequisite is both of MATH 254 and (MATH 260 or MATH 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 2023

RATIONALE (must be included)

MATH 310 was simply renumbered to MATH 260 for Fall 2020. Prerequisite updated to include those who have since taken MATH 260.