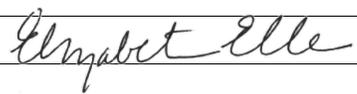


MEMORANDUM

ATTENTION:	Senate
FROM:	Elizabeth Elle, Vice-Chair, Senate Committee on Undergraduate Studies
RE:	New Course Proposals
DATE:	May 5, 2023

**For information:**

Acting under delegated authority at its meeting of May 4, 2023 SCUS approved the following curriculum revisions effective Spring 2024.

a. Faculty of Science (SCUS 23-53)1. Department of Mathematics

(i) New Course Proposals:

- MATH 468-3, Topics in Biomathematics
- MATH 469-3, Topics in Graphs and Trees in Biomathematics

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

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

CAMPUS where course will be normally taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Methods and applications of mathematical models in biology, focusing on understanding, analyzing, and applying scientific literature using models and integrating real data. Topics may include parameter estimation in biological models, stochastic simulation of disease outbreaks, age structured population models, and others. Course may be repeated for credit under different topic.

REPEAT FOR CREDIT YES NO Total completions allowed Within a term? YES NO**LIBRARY RESOURCES**

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit www.lib.sfu.ca/about/overview/collections/course-assessments.

RATIONALE FOR INTRODUCTION OF THIS COURSE

In the past four years the math department has expanded the biomathematics faculty complement and is preparing a new concentration in biomathematics. This course will be a capstone course for this concentration.

Some components of this class have been taught in recent Special Topics offerings in Spring 2022, and 2023 as well as Fall 2019 and 2022.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) Spring 2024

Term in which course will typically be offered [X] Spring [] Summer [] Fall

Other (describe) []

Will this be a required or elective course in the curriculum? [] Required [X] Elective

What is the probable enrollment when offered? Estimate: 30-40

UNITS Indicate number of units: 3

Indicate no. of contact hours: 3 Lecture [] Seminar [] Tutorial [] Lab [] Other; explain below

OTHER

[]

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

Caroline Colijn, Paul Tupper, Cedric Chauve, Ailene MacPherson, Ben Ashby, Jessica Stockdale

WQB DESIGNATION

(attach approval from Curriculum Office)

[]

PREREQUISITE AND / OR COREQUISITE

MATH 360 and (MATH 348 or STAT 380), both with a minimum grade of C-. Strongly recommended: experience with a computing platform such as R, MATLAB, or Python.



EQUIVALENT COURSES [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

1. SEQUENTIAL COURSE [is not hard coded in the student information management system (SIMS).]

Students who have taken *(place relevant course(s) in the blank below (ex: STAT 100))* **first** may not then take this course for further credit.

2. ONE-WAY EQUIVALENCY [is not hard coded in SIMS.]

(Place relevant course(s) in the blank below (ex: STAT 100)) will be accepted in lieu of this course.

3. TWO-WAY EQUIVALENCY [is hard coded and enforced by SIMS.]

Students with credit for *(place relevant course(s) in the blank below (ex: STAT 100))* may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? YES NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

4. SPECIAL TOPICS PRECLUSION STATEMENT [is not hard coded in SIMS.]

FEEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO

COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

OTHER IMPLICATIONS

Final exam required YES NO

Criminal Record Check required YES NO

OVERLAP CHECK

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

Name of Originator

JF Williams



COURSE SUBJECT MATH NUMBER 469

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation
Topics in Graphs and Trees in Biomathematics

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation
Graphs and Trees in Biomath

CAMPUS where course will be normally taught: [x] Burnaby [] Surrey [] Vancouver [] Great Northern Way [] Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.
A survey of contemporary methods and applications of discrete mathematical models focusing on graphs, networks, and trees in evolutionary biology, ecology, and epidemiology. Using discrete models and integrating real data, students will focus on understanding, analyzing, and applying recent scientific literature. Course may be repeated for credit under different topic.

REPEAT FOR CREDIT [x] YES [] NO Total completions allowed [] Within a term? [] YES [x] NO

LIBRARY RESOURCES
NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit www.lib.sfu.ca/about/overview/collections/course-assessments.

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WQB DESIGNATION

(attach approval from Curriculum Office)

[]

PREREQUISITE AND / OR COREQUISITE

MACM 201 with a minimum grade of C- and at least 60 units. Strongly recommended: experience with a computing platform such as R, MATLAB, or Python.



EQUIVALENT COURSES [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

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COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)



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Name of Originator

JF Williams