S.279

SIMON FRASER UNIVERSITY SENATE PAPERS

MEMORANDUM

To Mr. H. Evans Secretary of Senate	From B. L. Funt Dean of Science
Subject Mathematics Degree Requirement Changes	Date October 22, 1969

I enclose a statement of proposed changes in Mathematics degree requirements. This has been approved by the Undergraduate Curriculum Committee of the Faculty of Science and by the Faculty of Science at its meeting of October 20, 1969.

The course proposal forms and letter of October 22 were submitted, at my request, after the meeting.

B. L. Funt

c.c. Dr. A. H. Lachlan
Acting Head, Mathematics

SIMON FRASER UNIVERSITY

SENATE PAPERS

MEMORANDUM

To Faculty of Science Undergraduate Studies Committee	From Mathematics Undergraduate Studies Committee
Subject Mathematics Degree Requirements	Date September 19, 1969

The mathematics department recommends the following changes in the requirements for the Bachelor of Science degree with a major or with honours in mathematics:

1. To omit Math 142-2, Math 252-2, Math 271-3 from the lower division requirements.
2. To replace Math 252-2, Math 271-3 by courses Math 352-2, Math 371-3 respectively (the new courses covering material similar to the old ones), and to include these courses in the upper division requirements.

This would change the entry in "Requirements for Students Majoring or Taking Honors in Mathematics" on page 228 of the 1969-70 Calendar to read under (i) and (iii)

(i) To obtain credit by the end of the fourth level for the following lower level mathematics courses:

either: 113-3, 114-3, 213-3, 214-3, 221-2, 232-3

or: 141-2, 151-3, 152-3, 161-3, 232-3, 241-2, 251-3, 261-3

(iii) To obtain credits in the following Mathematics courses:

(a) 352-2, 371-3, 421-4, 422-4

(b) at least one of 411-4, 412-4, 413-4, 414-4

(c) at least one of 431-4, 432-4.

RECEIVED Sep 19 1969 DEAN OF SCIENCE OFFICE

D. Mallory

DM/bnb

Aigneuts letter of September 19, 1969

SENATE PAPERS

SIMON FRASER UNIVERSITY

DEPARTMENT OF MATHEMATICS

BURNABY 2, BRITISH COLUMBIA
Telephone 291-3111 Area code 604

October 22, 1969

Dr. B. L. Funt
Dean of Science
Simon Fraser University

Dear Dr. Funt:

I have enclosed the data for proposed new courses in Mathematics.

The principle reason for these changes (Math 142-2 will no longer be required) is that of allowing students from junior colleges to enter a mathematics program at Simon Fraser University without having to take a large number of lower level courses. It will also increase the flexibility of lower level programs by making it easier for students in their first four semesters to enter a mathematics program from another program and to enter other programs from mathematics.

Two topics (differential equations, probability) would, in the new scheme, be taught as 300 level courses instead of 200 level courses. These topics are of an intermediate nature and are frequently taught in the third year of university studies; they are in fact third-year courses at U.B.C. and the University of Victoria.

If these changes are implemented the lower division credits required in mathematics will be reduced to 22. Though this may seem substantial in view of the 12 credits suggested by the Ellis report, it is usually the case that mathematics departments require more than 12 credit hours of lower division mathematics (e.g. U.B.C. required the equivalent of 20 credits, University of Victoria 18 credits). Furthermore it seems likely that junior colleges in British Columbia will be offering far more than 12 credit hours of mathematics.

... / 2

At the moment students can take the following numbers of credits directly applicable to the Mathematics Departments lower division requirements:

Capilano College	13 credits
Okanagan College	14 credits
Selkirk College	12 credits
Vancouver City College	16 credits

In addition each of the above colleges (the only public colleges with substantial 2 year programs) offer courses in other departments (e.g. in Physics Departments) which we expect to be acceptable as a prerequisite to Mathematics 261-3, in which case we will waive Mathematics 161-3 as a requirement.

The number of lower division credits students from these colleges will need to make up is:

Capilano College	6 credits
Okanagan College	5 credits
Selkirk College	7 credits
Vancouver City College	3 credits

If scheduling or other problems make it difficult for students to complete the degree requirements in a total of eight semesters of higher education we will make any reasonable effort to alleviate these difficulties.

Yours sincerely,

D. Mallory

D. Mallory, Chairman
Undergraduate Studies Committee

FACULTY OF SCIENCE

NEW COURSE PROPOSAL

I CALENDAR INFORMATION

Department: Mathematics Course Number: 371-3 Title: Introduction to Probability

Sub-title or Description:

A first course in Mathematical Probability

Credit Hours: 3 hours Vector Description: 3-1-0

Pre-requisite(s):

Mathematics 114-3 or 152-3

II ENROLMENT AND SCHEDULING

Estimated Enrolment: 25 per semester

Semester Offered (e.g. Yearly, every Spring; twice yearly, Fall and Spring):

Twice yearly

When course will first be offered:

Fall 1970

III JUSTIFICATION

A. What is the detailed description of the course including differentiation from lower level courses, from similar courses in the same department and from courses in other departments in the University?

It is the first mathematical probability course offered. Mathematics 101-3, 102-3 and precalculus courses and are not designed for mathematics students.

It will cover principally the theory of distributions of one variable and elementary cases of several variables. Mathematics 486-4 (Probability) and Mathematics 489-4 have this course as a prerequisite.

B. What is the range of topics that may be dealt with in the course?

Only those listed in "A".

C. How does this course fit the goals of the department?

It is basic to one large area of mathematics (statistics) and is prerequisite to a number of 400- level courses.

D. How does this course effect degree requirements?

It will replace Mathematics 271-3.

E. What are the calendar changes necessary to reflect the addition of this course?

Mathematics 271-3 should be omitted from the requirements for mathematics majors and honours students and Mathematics 371-3 inserted in the upper level requirements.

Details are supplied on a separate sheet.

F. What course, if any, is being dropped from the calendar if this course is approved?

Mathematics 271-3

G. What is the nature of student demand for this course?

It is required for all mathematics majors and honours students.

H. Other reasons for introducing the course.

To ease the transfer difficulties of students coming from Junior Colleges.

IV BUDGETARY AND SPACE FACTORS

A. Which faculty will be available to teach this course?

Drs. Eaves, Kim, Mallory, Rennie.

B. What are the special space and/or equipment requirements for this course?

None.

C. Any other budgetary implications of mounting this course:

None.

APPROVAL - Faculty Undergraduate Curriculum Committee: SEPTEMBER 30, 1969

Faculty: OCTOBER 20, 1969

Senate:

FACULTY OF SCIENCE

NEW COURSE PROPOSAL

I CALENDAR INFORMATION

Department: Mathematics Course Number: 352-2 Title: Introduction to Ordinary Differential Equations

Sub-title or Description:

A first course in Ordinary Differential Equations

Credit Hours: 2 hours Vector Description: 2-1-0

Pre-requisite(s):

Mathematics 213-3 or 152-3

II ENROLMENT AND SCHEDULING

Estimated Enrolment: 20 per semester

Semester Offered (e.g. Yearly, every Spring; twice yearly, Fall and Spring):

Twice yearly

When course will first be offered:

Fall 1970

III JUSTIFICATION

A. What is the detailed description of the course including differentiation from lower level courses, from similar courses in the same department and from courses in other departments in the University? This is the lowest level course dealing with differential equations. It will cover the techniques of handling ordinary differential equations of first and higher orders with constant coefficients, and with their standard applications. Mathematics 413-4 covers ordinary differential equations which have non-constant coefficients and has this course as a prerequisite as does

B. What is the range of topics that may be dealt with in the course?

Only those topics listed in "A".

A. (continued)

Physics 382-4 (Mathematical Physics).

C. How does this course fit the goals of the department?

A knowledge of differential equations at this level is generally expected of the holder of a mathematics degree. This knowledge is required for 400- level applied mathematics courses.

D. How does this course effect degree requirements?

It will replace the requirement that students take Mathematics 252-2.

E. What are the calendar changes necessary to reflect the addition of this course?

Mathematics 352-2 should be inserted as an upper level requirement for mathematics majors and honours students.

Details are supplied on a separate sheet.

F. What course, if any, is being dropped from the calendar if this course is approved?

Mathematics 252-2

G. What is the nature of student demand for this course?

It is required for students majoring or taking honours in Chemistry, Mathematics or Physics

H. Other reasons for introducing the course.

To ease the transfer difficulties of students coming from Junior Colleges.

IV BUDGETARY AND SPACE FACTORS

A. Which faculty will be available to teach this course?

A majority of faculty members in the mathematics department.

B. What are the special space and/or equipment requirements for this course?

None.

C. Any other budgetary implications of mounting this course:

None.

APPROVAL - Faculty Undergraduate Curriculum Committee: SEPTEMBER 30, 1969

Faculty: OCTOBER 20, 1969

Senate:

NEW COURSE PROPOSALS (MATHEMATICS)

III E. (continued)

The combined effects of Mathematics Department changes would change the entry in "Requirements for Students Majoring or Taking Honors in Mathematics" on page 228 of the 1969/70 Calendar to read under (i) and (iii):

(i) To obtain credit by the end of the fourth level for the following lower level mathematics courses:

either: 113-3, 114-3, 213-3, 214-3, 221-2, 232-3

or: 141-2, 151-3, 152-3, 161-3, 232-3, 241-2, 251-3, 261-3

(iii) To obtain credits in the following Mathematics courses:

(a) 352-2, 371-3, 421-4, 422-4

(b) at least one of 411-4, 412-4, 413-4, 414-4

(c) at least one of 431-4, 432-4.

In addition, the courses Mathematics 352-2, Mathematics 371-3 would be entered in the "Description of Courses" with the same description as Mathematics 252-2, Mathematics 271-3 respectively. Wherever the courses Mathematics 252-2, Mathematics 271-3 appear as prerequisites they should be replaced by Mathematics 352-2, Mathematics 371-3 respectively.