

SIMON FRASER UNIVERSITY

MEMORANDUM

To SENATE

From SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Subject NEW COURSE PROPOSALS - BIOSCIENCES

Date SEPTEMBER 10, 1975

MOTION: "That Senate approve, and recommend approval to the Board of Governors, the new course proposals for

BISC 403-3 - Microbial Ecology
 BISC 471-3 - Special Topics in Biology
 BISC 472-3 - Special Topics in Biology
 BISC 473-3 - Special Topics in Biology,

as set forth in S.75-131."

If the above motion is approved,

MOTION: "That Senate waive the normal two semester time lag requirement in order that BISC 403-3, 471-3, 472-3, and 473-3 may be first offered in the Spring semester 76-1."

MEMORANDUM

To SENATE

From SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Subject

Date 10th September, 1975

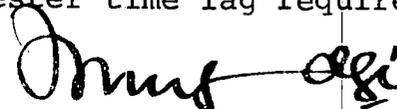
At its meeting of 26th August, the Senate Committee on Undergraduate Studies discussed the attached new course proposals for the Department of Biological Sciences.

BISC 403-3: Microbial Ecology
BISC 471-3: Special Topics in Biology
BISC 472-3: Special Topics in Biology
BISC 473-3: Special Topics in Biology

These proposals are now forwarded to Senate for its consideration, with the Committee's recommendation that they be approved.

Serious questions were raised about the course in Microbial Ecology, in which some members of the Committee felt that insufficient emphasis on actual ecology and, in particular, on organisms' relationship to agriculture was made. In response to these questions, the Dean of Science indicated that, if such topics were included in the present course, it would become far too diluted and that the Department and the Faculty felt the type of information in question should more appropriately be included into a second course. After considerable discussion, the course was approved; but the Dean agreed to bring the concerns expressed during the discussion to the attention of the Department.

Since the Department wished to offer the course for the first time in the Spring semester, 1976, the Committee also agreed to recommend to Senate that the normal two semester time lag requirement be waived.


I. Mugridge

:ams

att.

SIMON FRASER UNIVERSITY

SCUS 75-34

MEMORANDUM

To..... H. Evans	From..... B.P. Beirne, Acting Dean
..... Senate Committee on Undergraduate Studies Faculty of Science
Subject..... NEW COURSE PROPOSALS - Biosciences	Date..... August 20, 1975

The Executive Committee of the Faculty of Science has approved the following new course proposals, and forwards them to SCUS for consideration:

- | | |
|------------|---------------------------|
| BISC 403-3 | Microbial Ecology |
| BISC 471-3 | Special Topics in Biology |
| BISC 472-3 | Special Topics in Biology |
| BISC 473-3 | Special Topics in Biology |

The supporting documentation for these courses is attached.

/pel
Encl.

B.P. Beirne

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

Department: Biological Sciences

1. Calendar Information

Abbreviation Code: BISC Course Number: 403 Credit Hours: 3 Vector: 2-0-4

Title of Course: Microbial Ecology

Calendar Description of Course:

A study of the interaction of microbes with their physical, chemical and biological environment. This course will emphasize the study of viruses and bacteria, with a limited treatment of algae and fungi.

Nature of Course

Prerequisites (or special instructions):

BISC 303

What course (courses), if any, is being dropped from the calendar if this course is approved: None

2. Scheduling

How frequently will the course be offered? Once every other year

Semester in which the course will first be offered? Spring 76-1

Which of your present faculty would be available to make the proposed offering possible? Dr. L. Albright

3. Objectives of the Course

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty No additional

Staff No additional

Library Present resources very nearly adequate

Audio Visual No special requirements

Space Current facilities adequate

Equipment

5. Approval

Date: Nov 11 1974

21 Aug 75

[Signature]
Department Chairman

[Signature]
Dean

Chairman, SCUS

SIMON FRASER UNIVERSITY

MEMORANDUM

From Dr. L. Albright

Subject Bisc xxx Microbial Ecology

Date May 23, 1974.

Herewith is the proposed outline of the course "Microbial Ecology".

"A study of the interaction of microbes with their physical, chemical and biological environment. This course will emphasize the study of viruses and bacteria, with a limited treatment of algae and fungi."

Lecture	Topic
1	Review of the biology of microbes.
	<u>The Microbial Environment</u>
2	The macro and micro environment.
3	The Physical Environment.
4	The Chemical Environment.
	<u>The Ecology of the Microbial Cell</u>
5 & 6	Ecology and physiological versatility of microbes.
6 & 7	Ecology and morphological versatility of microbes.
	<u>The Ecology of Microbial Populations</u>
8	Population growth and control.
9	Genotype versus phenotypic control.
	<u>Microbial Ecosystems</u>
10	Assessment of biomass.
11, 12 & 13	Assessment of productivity and activity: geochemical and kinetic techniques.
	<u>Interaction Between Microbial Populations</u>
14	Neutralism, commensalism and mutualism.
15	Competition and Antagonism.
16	Parasitism.
	<u>Interaction Between Micro and Macroorganisms</u>
17	Parasitism
18	Microbes and plants.
19	Microbes and animals.

Dispersal and Taxis Mechanisms

- 20 Air, water, plant, animal and particles.
- 21 Growth, phototaxis, chintaxis.

Microbes in Microecology

- 22 Biogeochemical cycles.
- 23 Energy flow.
- 24 Modelling techniques.

Environmental Perturbations

- 25 Natural
- 26 Pollution: lethal and sub-lethal effects.

I expect lectures will be twice a week with 2 two hour laboratory sessions each week as well. The laboratory outline is attached.

L. J. Albright,
Associate Professor.

LJA/ms
Encl.

MICROBIAL ECOLOGY

Lab #

Title of Lab

- 1 Plate Count Methods.
Direct Count Methods for Microbial Enumeration.
- 2 Enrichment Culture of Acinebacter.
- 3 The Use of Microcosms - The Winogradsky Column.
- 4 Community Structure and Pigment Ratio.
Dominant Bacterial Types.
- 5 $^{14}\text{CO}_2$ Assay for Primary Productivity (Algal).
 $^{14}\text{CO}_2$ Assay for Secondary Productivity (Bacterial).
- 6 Mineralization Rates of Organic Carbon by Heterotrophs.
- 7 The Measurement of Standing Crop Biomass.
Growth in Filtrate in Other Cultures.
- 8 Losses from Autotrophs to Heterotrophs.
- 9 Measurement of Community Metabolism.
- 10 Litter Bag Method for the Study of Decomposition in Aquatic Systems.
- 11 Decomposition of Unconfined Substrates.
Decomposition: Dissolved Organic Materials.
- 12 Chemostats- Continuous Culture of Bacteria.
- 13 Transfer of Microbes-Water to Air.

Rationale

1. At present the ecology of microbes (i.e. bacteria, viruses, fungi and to a lesser extent micro algae) is not covered in other courses and by other faculty. The teaching of "Microbial Ecology" will allow the BioScience Dept. to offer a more complete program in ecology.
2. This course will allow students whose main interest is ecology to obtain a more complete understanding of this discipline. It will also allow the general biology student a greater choice in selection of ecology courses.

Texts

1. Modern methods in the study of microbial ecology (1973).
T. Rosswall (ed) Bulletin No. 17 Ecological Research Committee /NFR. Sweden.
2. Techniques for the assessment of microbial production and decomposition in fresh waters. Y. Soiokin and H. Kadota (ed) IBP Handbook #23. Blackwell, Oxford.

Rationale

1. At present the ecology of microbes (i.e. bacteria, viruses, fungi and to a lesser extent micro algae) is not covered in other courses and by other faculty. The teaching of "Microbial Ecology" will allow the BioScience Dept. to offer a more complete program in ecology.
2. This course will allow students whose main interest is ecology to obtain a more complete understanding of this discipline. It will also allow the general biology student a greater choice in selection of ecology courses.

Texts

1. Modern methods in the study of microbial ecology (1973).
T. Rosswall (ed) Bulletin No. 17 Ecological Research Committee /NFR. Sweden.
2. Techniques for the assessment of microbial production and decomposition in fresh waters. Y. Soikin and H. Kadota (ed) IBP Handbook #23. Blackwell, Oxford.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Biological Sciences

Abbreviation Code: BISC Course Number: 471 Credit Hours: 3 Vector:

Title of Course: Special topics in Biology.

Calendar Description of Course:

Selected topics in areas not currently offered within the undergraduate course offerings in the Department of Biological Sciences.

Nature of Course - To be advertised each semester.

Prerequisites (or special instructions):

Permission of the Department.

What course (courses), if any, is being dropped from the calendar if this course is approved: NONE

2. Scheduling

How frequently will the course be offered? Irregularly & infrequently

Semester in which the course will first be offered? Spring 76-1

Which of your present faculty would be available to make the proposed offering possible? Several are available, but the exact numbers cannot be specified.

3. Objectives of the Course

Allow for the presentation of courses on a trial basis, or to allow the occasional offering of special interest courses or to allow visiting faculty to offer a course in their specialty.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty - Occasionally visiting personnel would offer such a course.

Staff

Library

Audio Visual } - adequate as far as can be foreseen.

Space

Equipment

5. Approval

Date: 3/14/75

21 Aug 75

[Signature]
Department Chairman

[Signature]
Dean

Chairman, SCUS

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Biological Sciences

Abbreviation Code: BISC Course Number: 472 Credit Hours: 3 Vector:

Title of Course: Special Topics in Biology

Calendar Description of Course:

Selected topics in areas not currently offered within the undergraduate course offerings in the Department of Biological Sciences.

Nature of Course - To be advertised each semester.

Prerequisites (or special instructions):

Permission of the Department.

What course (courses), if any, is being dropped from the calendar if this course is approved: NONE

2. Scheduling

How frequently will the course be offered? Irregularly & infrequently

Semester in which the course will first be offered? Spring 76-1

Which of your present faculty would be available to make the proposed offering possible? Several are available, but the exact numbers cannot be specified.

3. Objectives of the Course

Allow for the presentation of courses on a trial basis, or to allow the occasional offering of special interest courses or to allow visiting faculty to offer a course in their specialty.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty - Occasionally visiting personnel would offer such a course.

Staff

Library

Audio Visual } - adequate as far as can be foreseen.

Space

Equipment

5. Approval

Date: 3/1/75

21 Aug 75

[Signature]
Department Chairman

[Signature]
Dean

Chairman, SCUS

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Biological Sciences

Abbreviation Code: BISC Course Number: 473 Credit Hours: 3 Vector: _____

Title of Course: Special topics in Biology.

Calendar Description of Course:

Selected topics in areas not currently offered within the undergraduate course offerings in the Department of Biological Sciences.

Nature of Course - To be advertised each semester.

Prerequisites (or special instructions):

Permission of the Department.

What course (courses), if any, is being dropped from the calendar if this course is approved: NONE

2. Scheduling

How frequently will the course be offered? Irregularly & infrequently.

Semester in which the course will first be offered?

Spring 76-1

Which of your present faculty would be available to make the proposed offering possible? Several are available, but the exact numbers cannot be specified.

3. Objectives of the Course

Allow for the presentation of courses on a trial basis, or to allow the occasional offering of special interest courses or to allow visiting faculty to offer a course in their specialty.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty - Occasionally visiting personnel would offer such a course.

Staff

Library

Audio Visual } - adequate as far as can be foreseen.

Space

Equipment

5. Approval

Date: 3/11/75

21 Aug 75

[Signature]
Department Chairman

[Signature]
Dean

Chairman, SCUS

SIMON FRASER UNIVERSITY

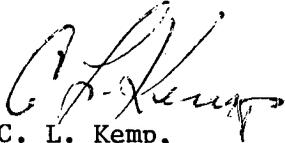
MEMORANDUM

To	Dr. S. Aronoff	From	Dr. C.L. Kemp, Acting Chairman,
	Dean of Science		Dept. of Biological Sciences
Subject	Possible Special Topics in Biology Offerings	Date	August 26, 1975

As requested by you today, please find listed below the possible special topics in biology offerings:

- Taxonomy of Vascular Plants
- Ornithology
- Mammalogy
- Microbial Physiology
- Ichthyology
- Mycology
- Phycology

CLK:ct


C. L. Kemp,
Acting Chairman.

SIMON FRASER UNIVERSITY

MEMORANDUM

David Ryeburn, Chairman

Faculty U.G.C.C.

Subject Biosciences Special Topics

From S. Aronoff *S. Aronoff*

Dean of Science

Date June 9, 1975

Enclosed you will find submissions from the Department of Biosciences involving expansion of two of their current courses and to initiate three special topics courses.

I hope these can be placed on the next agenda of the Faculty Undergraduate Curriculum Committee in order to permit them to be put through SCUS and Senate and be available for implementation in 76-1.

I agree fully with the rationale for the expansion of courses. The time presently available (one semester) for the wealth of material currently presented in these courses is simply inadequate to do them justice. This rationale is best substantiated by comparison with other universities where they normally comprise a one-year curricula. I am a bit disturbed by the paucity of credit hours assigned, but this must have been considered heavily by the Department and will certainly be able to be explained by Professor Kemp during the course of our meeting.

I have questioned the Department with regard to the necessity for *three* special topics courses, the most obvious rationale here being that they might wish to offer special topics in each of the three possible time periods during the summer semester, i.e. the semester itself, summer session, or intersession. An alternative strategy is to have three courses with different levels of credit. I am told, however, that the main basis for three is that they might wish to teach two special topics courses in one semester and this would then leave the possibility of a third in the event that this is given in one of the special sessions in the summer semester.

SA/pel
Encl.

cc. J.M. Webster
C.L. Kemp

SIMON FRASER UNIVERSITY

MEMORANDUM

To Dr. S. Aronoff
Dean of Science.

From Dr. J. M. Webster
Dept. of Biological Sciences.

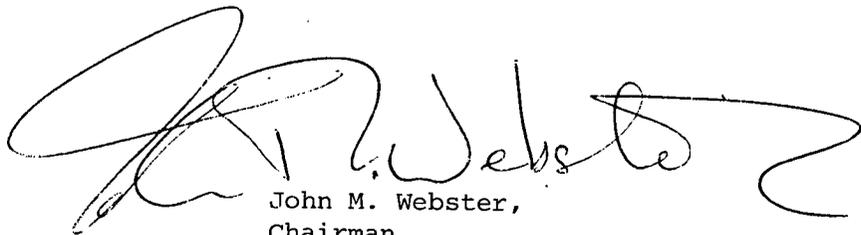
Subject
Date June 4, 1975.

Please find enclosed some submissions from the Department for changes in our undergraduate programme. I should appreciate it if you would forward these to your Undergraduate Curriculum Committee.

The first item is for the addition of 3 Special Topics courses. Biology has managed without Special Topics courses thus far, but it is increasingly obvious that the flexibility offered by their introduction into the course options would give strength to the programme. This would be particularly valuable when designing a new course and offering it for the first time, as in some instances it would be worthwhile offering it under a Special Topics number rather than offering it under a new title immediately.

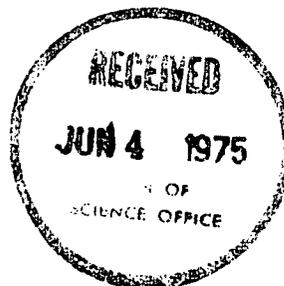
There has been concern for some time in the Department regarding our Botany courses both in the content of the current offerings and in the breadth of our undergraduate programme. It has been decided to split the current courses in Plant Physiology, Development-Anatomy, into two courses each. You will find documentation to support this split. } see 6-7-75

All these proposals have been through the Departmental Undergraduate Curriculum Committee and have been approved by the Department.



John M. Webster,
Chairman.

JMW/ms
Encls.



SIMON FRASER UNIVERSITY

MEMORANDUM

To Faculty of Science Undergraduate
Curriculum Committee.
Subject Special Topics Courses

From C. L. Kemp,
Chairman, DUCC.
Date June 3, 1975

There is no latitude in the Biological Sciences curriculum to encourage special courses, nor to allow for the rare offering of a course of special interest to faculty and/or students. Indeed, no mechanism allows our department to capitalize on visiting faculty to offer a course in their specialty. One way to accommodate these situations is to include in our list of offerings, courses clearly identified as special topic courses. These would have an appropriate calendar number, the vector would be open, and the credit would be 3 hours. Three such courses are proposed at the 400 level; BISC 471-3, BISC 472-3, BISC 473-3.

C. L. Kemp/mf

C. L. Kemp,
Chairman, DUCC.

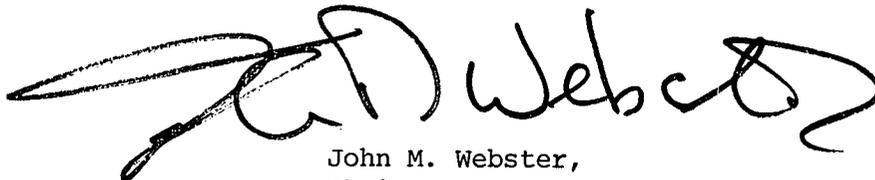
CLK/mf

SIMON FRASER UNIVERSITY

MEMORANDUM

Dr. S. Aronoff	From Dr. J. M. Webster 
Dean of Science.	Dept. of Biological Sciences.
Subject Special Topics courses	Date June 6, 1975.

Further to our telephone conversation the other day regarding the Special Topics courses, I confirm that the Department requires these courses to be given only 3 credits and further that the need for three of them was primarily because within one semester, especially the summer semester, it was possible that we might have more than one faculty wishing to give such a course.



John M. Webster,
Chairman.

JMW/ms



SIMON FRASER UNIVERSITY

MEMORANDUM

Elizabeth Lambert, Secretary,
Faculty of Science
Subject Course Overlap

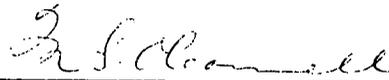
From M. S. O'Connell, Director
Undergraduate Programs
Faculty of Education

Date August 7, 1975

At its meeting of July 29, 1975 the Undergraduate Programs Committee of the Faculty of Education discussed the question of overlap between Faculty of Education courses and the proposed courses

Physics 181- Introduction to Physical Science in Archaeology
BioScience 471 - Special Topics in Biology
" 472 - Special Topics in Biology
" 473 - Special Topics in Biology

The Committee found no evidence of overlap between the proposed courses and current Faculty of Education offerings.



M. Sheila O'Connell, Director
Undergraduate Programs

MSO/kg