

SIMON FRASER UNIVERSITY

S.77-72

MEMORANDUM

To SENATE

From SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Subject B.Sc. Program in Geography

Date 5th May, 1977

Action taken by the Senate Committee on Undergraduate Studies at its meeting on 26th April, 1977 gives rise to the following motion:

MOTION

That Senate approve, and recommend approval to the Board of Governors, the proposal for a B.Sc. Program in Geography, as set forth in paper S.77-72



Daniel R. Birch

SIMON FRASER UNIVERSITY

SCUS 77-19

MEMORANDUM

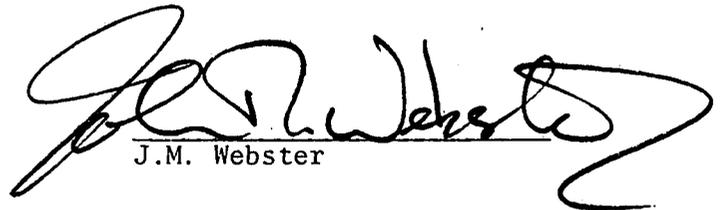
To H. Evans, Registrar
 Secretary to SCUS

Subject B.SC. PROGRAM IN GEOGRAPHY,
 MAJOR, HONORS

From J.M. Webster, Dean
 Faculty of Science

Date March 28, 1977

Attached you will find a proposal for a B.Sc. Program in Geography. This proposal was approved by the Faculty of Science at its meeting of Thursday, March 24, 1977, and is herewith forwarded to the Senate Committee on Undergraduate Studies for consideration.



J.M. Webster

JMW/pel
 Encl.

RECEIVED

MAR 28 1977

RE. OFFICE
 MAIN DESK

SIMON FRASER UNIVERSITY

MEMORANDUM

To Mr. H.M. Evans, Registrar

From Sheila Roberts, Secretary

Faculty of Arts Curriculum

Committee

Subject Geography B.Sc. Programme

Date April 19, 1977

The Faculty of Arts Curriculum Committee at its meeting of April 7, 1977 included the B.Sc. Programme in Geography on its Agenda for discussion. The Committee raised no objections to the programme.

S. Roberts

cc. M. Roberts
Geography Department



March 7, 1977

Dr. David Ryeburn
Faculty of Science Curriculum Committee
Department of Mathematics
Simon Fraser University
Burnaby, B.C.
V5A 1S6

Dear David:

I am enclosing a copy of our revised regulations for the B.Sc. programme in Geography. May I take this opportunity to indicate to you that most other universities in Canada offer such a degree, including:

University of British Columbia
University of Victoria
McGill University
Queen's University
University of Calgary
McMaster University
University of Alberta
University of Toronto

This is not an exhaustive list but, at least, it indicates to you the range and stature of institutions offering the degree.

The Physical Geography components of the discipline are sciences. Majors in these areas require a basic science training in order to obtain full benefit from the Physical Geography programme. Students wishing to pursue Physical Geography in its proper scientific context are presently forced to transfer to one of the other provincial universities (or elsewhere).

Most other universities recognise the interdisciplinary nature of geography by granting both Arts and Science degrees in the subject; S.F.U. is one of the few exceptions. We see the B.Sc. programme in Geography as a strengthening of the Department and University offerings, and as a much needed option for science students interested in pursuing a degree in physical geography.

Sincerely,



Michael C. Roberts

Michael C. Roberts
Chairman

MCR/mgb
T-207

B.Sc. (Major, Honors - Geography)

GENERAL DEGREE

Lower Division Requirements

A. Geography Courses:	Geog. 111-3	Geog. 121-3		
	Geog. 112-3	Geog. 141-3		
		Geog. 250-3		
			15 hours	15
B. Science Courses:	Bisc. 101-4	Bisc. 102-4	8	"
	Chem. 104-3	Chem. 105-3		
		& 115-2	8	"
	Phys. 101-3	Phys. 102-3		
		& 131-2	8	"
	Math. 101-3	Math. 151-3		
		& 152-3		
		or		
		Math. 154-3		
		& 155-3	9	"
			33 hours	33

Any student planning to take further courses in chemistry, mathematics, or physics may need to take Math. 253. Further, any student planning to take additional courses in chemistry may need to take Chem. 117.

C. Courses outside the Faculty of Science and outside the Department of Geography science stream - a minimum of 6 hours.

TOTAL LOWER DIVISION REQUIRED HOURS 54

Upper Division Requirements

A. Geography Courses - 300 Division

Three of:	Geog. 313-3, 314-3, 315-3 317-3, & 318-3	9 hours
One of:	Geog. 322-3, 323-3, 324-3 & 325-3	3 hours
One of:	Geog. 343-3, 344-3, 362-3 375-3 & 431-5	3 (or 5) hours
		15 hours 15 (or 17)

B. Geography Courses - 400 Division

Two of:	Geog. 413-5, 414-5 & 415-5, 418-5	10 hours
One of:	Geog. 421-5, 460-5, 461-5 462-5, 464-5, 467-5 & 469-5	5 hours
Must:	Geog. 407-3	3 hours
		18 hours 18

C. Faculty of Science Courses
a minimum of 10 hours of 300-400 Division
courses.

10 hours 10

TOTAL UPPER DIVISION REQUIRED

HOURS 43 (or 45)

A student must present a total of 44 hours of upper division credit
excluding Education 401, 402 and 405.

Honors Degree

The Honors Program is the same as the Major Program except it must
include a minimum of 60 semester hours of 300-400 Division courses, of which
48 must be in Geography or Faculty of Science subjects. Entry into the
Honors Program requires Department's approval.

B.Sc. (Major - Geography)

Biogeography Emphasis
Sample Program

1st Semester

- Geog. 111-3 - Physical Geography
- Geog. 112-3 - Introduction to Geology
- Math. 101-3 - Statistics
- Bisc. 101-4 - Introduction to Biology I
- Math. 154-3 - Calculus I for Bio. Science.

16 hours

2nd Semester

- Geog. 121-3 - Economic Geography
- Phys. 101-3 - General Physics I
- Bisc. 102-4 - Introduction to Biology II
- Chem. 104-3 - General Chemistry I
- Chem. 115-2 - General Chemistry Laboratory

15 hours

3rd Semester

- Geog. 250-3 - Cartography I
- Phys. 102-3 - General Physics II
- Phys. 131-2 - General Physics Laboratory
- Chem. 105-3 - General Chemistry II
- Math. 155-3 - Calculus II for Bio. Science
- Bisc. 204-3 - Introduction to Ecology

17 hours

4th Semester

- Geog. 315-3 - Biogeography I
- Geog. 314-3 - Climatology I
- Cmpt. 103-3 - Introduction to Programming
- Bisc. 304-3 - Animal Ecology
- Geog. 141-3 - Social Geography

15 hours

Biogeography Emphasis (cont'd.)

5th Semester

- *Geog. 343-3 - Transitional Societies
 - Geog. 313-3 - Geomorphology I
 - Bisc. 300-3 - Aspects of the Environment
 - Geog. 317-3 - Soils
 - Cmpt. 118-3 - Computing Projects in Arts and Science
- OR
- Cmpt. 141-1 and 151-1 - Computing Projects:
Biology & Geog.

14 hours (or 15)

6th Semester

- Geog. 415-5 - Biogeography II
- Bisc. 404-3 - Plant Ecology
- Bisc. 310-3 - Plants and Animals of B.C.
- Bisc. 337-3 - Comparative Morphology
- Cmpt. 250-3 - Computer Uses in Environmental Studies

7th Semester

17 hours

- Geog. 416-5 - Pleistocene Geography
- Geog. 407-3 - Quantitative Methods
- Bisc. 407-3 - Population Dynamics
- Geog. 322-3 - Primary Activities

14 hours

8th Semester

- Geog. 414-5 - Climatology II
- Geog. 443-5 - Regional Planning
- Geog. 421-5 - Resource Development

15 hours

TOTAL HOURS 123 (124)

B.Sc.. (Major - Geography)

FLUVIAL GEOMORPHOLOGY EMPHASIS

Sample Programme

1st Semester

Geog. 111-3 - Phys. Geog.
Geog. 112-3 - Geology
Math. 101-3 - Statistics
Bisc. 101-4 - Introductory Biology
Geog. 141-3 - Cultural Geography

16 hours

5th Semester

Geog. 362-3 - Urban Development
Math. 312-4 - Multidimensional
Calculus
Geog. 413-5 - Geomorphology II
Geog. 407-3 - Quant. Methods
Chem. 117-2 - Quant. Chem. Lab

17 hours

2nd Semester

Geog. 250-3 - Cartography I
Math. 151-3 - Calculus I
Bisc. 102-4 - Introductory Biology
Phys. 101-3 - General Physics
Chem. 104-3 - General Chemistry

16 hours

6th Semester

Geog. 452-5 - Computer
Cartography
Geog. 314-3 - Climatology I
Geog. 318-3 - Sedimentology
Chem. 416-3 - Analytical
Chemistry

14 hours

3rd Semester

Math. 152-3 - Calculus II
Chem. 105-3 - General Chemistry
Phys. 102-3 - General Physics
Geog. 121-3 - Economic Geography
Phys. 131-2 - General Physics Lab.
Chem. 115-2 - General Chemistry Lab.

16 hours

7th Semester

Geog. 416-5 - Pleistocene
Geography
Geog. 421-5 - Resource
Development
Math. 469-4 - Fluid Dynamics

14 hours

4th Semester

Phys. 211-3 - Mechanics
*Geog. 322-3 - Primary Activities
Bisc. 204-3 - Ecology
Geog. 313-3 - Geomorphology
Math. 253-4 - Calculus III

16 hours

8th Semester

Geog. 462-5 - Canada
*Geog. 343-3 - Transitional
Societies
**Geog. 415-5 - Biogeography

13 hours

* Electives within Geography

TOTAL HOURS 122

** Bisc. 204-3 is acceptable as the
pre-requisite for Geog. 415-5 in this programme.

B.Sc. (Major - Geography)

Climatology Emphasis

Sample Program

1st Semester

Geog. 111-3 - Physical Geography
Math. 154-3 - Calculus (Bisc.) I
Bisc. 101-4 - Intro. Biology I
Phys. 101-3 - General Physics I
Chem. 104-3 - General Chemistry

16 hours

2nd Semester

Geog. 112-3 - Introductory Geology
Math. 155-3 - Calculus (Bisc.) II
Phys. 102-3 - General Physics II
Bisc. 102-4 - Introductory Biology II
Chem. 105-3 - General Chemistry II

16 hours

3rd Semester

Geog. 141-3 - Cultural Geography
Geog. 121-3 - Economic Geography
Chem. 115-2 - General Chemistry Lab.
Math. 101-3 - Statistics
Elective (Arts)-3

14 hours

4th Semester

Geog. 212-3 - Natural Hazards
Geog. 314-3 - Climatology
Phys. 131-2 - General Physics Lab.
Bisc. 204-3 - Introduction to Ecology
Geog. 250-3 - Cartography I

14 hours

5th Semester

Geog. 317-3 - Soils
Geog. 315-3 - Biogeography I
Math. 253-4 - Calculus III
Math. 302-3 - Statistical Methods
Phys. 211-3 - Mechanics

16 hours

6th Semester

Geog. 313-3 - Geomorphology
*Geog. 322-3 - Primary Activities
*Geog. 375-3 - Historical Geog.
Bisc. 300-3 - Aspects of Environ.
Arts Elective - 3

15 hours

7th Semester

Geog. 407-3 - Quantitative Method
in Geog.
Geog. 415-5 - Biogeography II
Geog. 421-5 - Resource Development
Phys. 333-4 - Instru. in Life Sci

17 hours

8th Semester

Geog. 414-5 - Climatology II
Geog. 416-5 - Pleistocene Geog.
Geog. 462-5 - Canada

15 hours

* Elective in Geography

TOTAL HOURS 123

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FROM : [Illegible]
SUBJECT : [Illegible]

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B.Sc. (Major - Geography)

TERRAIN ANALYSIS EMPHASIS

Sample Program

1st Semester

Geog. 111-3 - Physical Geography
Math. 101-3 - Statistics
Bisc. 101-4 - Introduction to
Biology I
Chem. 104-3 - General Chemistry I
Math. 154-3 - Calculus for Bio.
Science I

16 hours

5th Semester

Geog. 314-3 - Climatology I
Geog. 315-3 - Biogeography I
Geog. 313-3 - Geomorphology I
*Geog. 343-3 - Transitional
Societies
Bisc. 300-3 - Aspects of the
Environment

15 hours

2nd Semester

Geog. 141-3 - Social Geography
Cmpt. 103-3 - Introduction to
Programming I
Bisc. 102-4 - Introduction to
Biology II
Chem. 105-3 - General Chemistry II
Math. 155-3 - Calculus for Bio.
Science II

16 hours

6th Semester

Geog. 317-3 - Soils
Geog. 407-3 - Quantitative
Methods in Geog.
Geog. 421-5 - Resource Develop.
Bisc. 310-3 - Plants & Animals
of B.C.
Chem. 117-2 - Quant. Chem. Lab.

16 hours

3rd Semester

Geog. 250-3 - Cartography I
Geog. 112-3 - Introduction to
Geology
Geog. 212-3 - Natural Hazards
Phys. 101-3 - General Physics
Chem. 115-2 - General Chemistry
Laboratory
Cmpt. 118-3 - Computing Projects in
Arts and Sciences

OR

Cmpt. 141-1 and 151-1 - Computing
Projects: Biology & Geog.

16 (or 17) hours

7th Semester

Geog. 413-5 - Geomorphology II
Geog. 415-5 - Biogeography II
Chem. 416-3 - Modern Methods in
Analytical Chem.

13 hours

4th Semester

Geog. 121-3 - Economic Geography
Phys. 102-3 - General Physics II
Cmpt. 250-3 - Computer Uses in
Environmental Studies
Bisc. 204-3 - Introduction to Ecology
Phys. 131-2 - General Physics Laboratory

14 hours

8th Semester

Geog. 322-3 - Primary Activities
Geog. 469-5 - North American
Middle North
Geog. 418-5 - Terrain
Evaluation
Bisc. 404-3 - Plant Ecology

16 hours

TOTAL HOURS 122 (or 123)

COURSES THAT COULD BE DESIGNATED
SCIENCE COURSES FOR THE
B.Sc. PROGRAMME IN GEOGRAPHY

ENVIRONMENTAL SCIENCE AND RELATED

COURSES IN GEOGRAPHY

Geog. 111-3	Physical Geography
Geog. 112-3	Introductory Geology
Geog. 212-3	Geography of Natural Hazards
Geog. 250-3	Cartography I
Geog. 251-3	Methods in Spatial Analysis
Geog. 313-3	Geomorphology
Geog. 314-3	Climatology I
Geog. 315-3	Biogeography I
Geog. 317-3	Soil Geography
Geog. 318-3	Sedimentology and Past Environments
Geog. 351-3	Cartography II
Geog. 413-5	Geomorphology II
Geog. 414-5	Climatology II
Geog. 415-5	Biogeography II
Geog. 416-5	Pleistocene Geography
Geog. 418-5	Terrain Evaluation
Geog. 407-3	Quantitative Methods in Geography
Geog. 452-5	Theoretical and Computer Cartography

COURSES IN THE FACULTY OF SCIENCE

ADVISING LISTS

B.Sc. (Major - Geography)

ADVISING LIST - BIOLOGICAL SCIENCES

This list is designed to aid advisors in the Geography B.Sc. programme. It will be most useful for aiding those students who wish to concentrate in Biogeography.

Required Courses

Bisc. 101 and 102

Recommended Courses

Bisc. 202	Genetics
Bisc. 204	Introduction to Ecology
Bisc. 300	Physical and Chemical Aspects of the Environment
Bisc. 304	Animal Ecology
Bisc. 310	The Plants and Animals of British Columbia
Bisc. 337	Comparative Morphology, Distribution and Evolution of Vascular Plants
Bisc. 346	Biosystematics
Bisc. 400	Evolution
Bisc. 404	Plant Ecology
Bisc. 407	Population Dynamics
Bisc. 409	Field Ecology
Bisc. 432	Chemical Pesticides and the Environment
Bisc. 435	Introduction to Pestology

B.Sc. (Major - Geography)

ADVISING LIST - CHEMISTRY COURSES

This list is designed to aid advisors in the Geography B.Sc. programme. It will be most useful in those situations where a student wishes to widen his/her chemistry knowledge (e.g. students with an interest in soils or environmental quality).

Required Courses

Chem. 104 and 105
Chem. 115

Recommended Courses

Chem. 004	Pollution, Energy and Resources
Chem. 117	Quantitative Chemistry Laboratory
Chem. 233	Inorganic Chemistry of Biological Processes
Chem. 235	Geochemistry
Chem. 416	Modern Methods of Analytical Chemistry

ADVISING LIST - MATHEMATICS COURSES

This list is designed to aid advisors in the Geography B.Sc. programme. It will be of most use in those situations where a student wishes to widen his mathematical background (e.g. students with an interest in the hydraulics section of fluvial geomorphology or computer cartography).

Required Courses

Math 101
Math 151 and 152, or Math 154 and 155

Recommended Courses

Math 104	Elementary Computational Methods
Math 161	Statics
Math 232	Elementary Linear Algebra
Math 253	Calculus III
Math 302	Statistical Methods
Math 305	Statistical Analysis of Sample Surveys
Math 310	Introduction to Ordinary Differential Equations
Math 312	Multidimensional Calculus
Math 361	Mechanics of Deformable Media
Math 469	Fluid Dynamics

B.Sc. (Major - Geography)

ADVISING LIST - PHYSICS COURSES

This list is designed to aid advisors in the Geography B.Sc. programme.

Required Courses

Phys. 101 and 102
Phys. 131

Recommended Courses

Phys. 181	Introduction to Physical Science in Archaeology
Phys. 211	Intermediate Mechanics
Phys. 221	Intermediate Electricity and Magnetism
Phys. 333	Introduction to Instrumentation in the Life Sciences

B.Sc. (Major - Geography)

ADVISING LIST - MISCELLANEOUS COURSES

This list is designed to aid advisors in the Geography B.Sc. programme.

Recommended Courses

Arc. 365	Ecological Archaeology
Arc. 372	Archaeology Laboratory Techniques
Arc. 410	Advanced Archaeometry
Arc. 411	Archaeological Dating
Econ. 362	Economics of Natural Resources
Hist. 217	Canada to Confederation
Hist. 218	Canada since Confederation
Pol. 221	Introduction to Canadian Government
Pol. 222	Introduction to Canadian Politics
Cmpt. 103	Introduction to a High Level Programming Language I
Cmpt. 151	Computing Project - Geography
Cmpt. 250	Computer Uses in Environmental Studies