

SIMON FRASER UNIVERSITY

S.82.7

MEMORANDUM

To SENATE

From SENATE COMMITTEE ON UNDERGRADUATE
STUDIES

Subject CHANGES - GEOGRAPHY

Date DECEMBER 17, 1981

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of December 15, 1981 gives rise to the following motions:

1. "That Senate approve and recommend approval to the Board of Governors, as set forth in S.82-7, changes in lower division requirements and in upper division requirements."
2. "That Senate approve and recommend approval to the Board of Governors, as set forth in S.82-7, the proposed new courses:
GEOG 312-3 - Geography of Natural Hazards, and
GEOG 353-3 - Aerial Photographic Interpretation."
3. "That Senate approve and recommend approval to the Board of Governors, as set forth in S.82-7, that
GEOG 001-3 - The Geography of Technocratic Society, and
GEOG 213-3 - Geography of Natural Hazards
be discontinued."

MEMORANDUM

To..... Mr., H.M., Evans.. Secretary.....
..... S.C.U.S.....
Subject..... Curriculum Changes - Geography.....

From.. Sheila Roberts, Secretary.....
..... Faculty of Arts Curriculum Committee..
Date.. 1981-12-10.....

The Faculty of Arts Curriculum Committee at its meeting this afternoon passed the following motions:

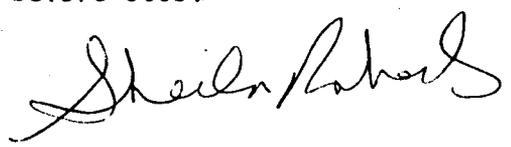
That the changes in Lower Division and Upper Division Requirements in the Geography Department as outlined in C. 81-12 A be approved.

That GEOG 312-3 and 353-3 be approved for permanent inclusion in the calendar.

That GEOG 001-3 and GEOG 212-3 be deleted from the Geography course offerings as listed in the calendar.

Would you please put these items before SCUS.

Thank you.



S. Roberts

cc. G. Rheumer

CURRICULUM CHANGES

DEPARTMENT OF GEOGRAPHY

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CHANGE OF REQUIREMENTS

FROM: LOWER DIVISION COURSE REQUIREMENTS

Students who plan to major, minor or to take Honors in Geography normally should obtain credit for the following courses in the first four levels:

MAJORS:

GEOG 111-3, 121-3, 141-3, 250-3 and 3 additional hours selected from the other 100 and 200 division courses in Geography.

MINORS:

GEOG 111-3, 121-3, 141-3, 250-3.

HONORS:

GEOG 111-3, 121-3, 141-3, 250-3, 251-3, and 3 additional hours selected from the 100 and 200 division courses in Geography.

Students are advised to include a course in statistics before entering the 300 and 400 division courses. Only one of GEOG 262 shall be included within the 3 additional hours required.

TO: LOWER DIVISION COURSE REQUIREMENTS

Students who plan to major, minor or to take Honors in Geography normally should obtain credit for the following courses in the first four levels:

MAJORS:

GEOG 111-3, 121-3, 141-3, 250-3 and 260-3 or 263-3.

MINORS:

GEOG 111-3, 121-3, 141-3 and 250-3.

HONORS:

GEOG 111-3, 121-3, 141-3, 250-3, 251-3, and 260-3 or 263-3.

Students are advised to include a course in statistics before entering the 300 and 400 division courses.



CURRICULUM CHANGES

Department of Geography

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CHANGES OF REQUIREMENTS

FROM: LOWER DIVISION REQUIREMENTS

Students who plan to major, minor or to take Honors in Geography normally should obtain credit for the following courses in the first four levels:

MAJORS:

GEOG 111-3, 121-3, 141-3, 250-3
and 3 additional hours selected from
the other 100 and 200 division courses
in Geography

MINORS:

GEOG 111-3, 121-3, 141-3, 250-3.

HONORS:

GEOG 111-3, 121-3, 141-3, 250-3, 251-
and 3 additional hours selected from
the 100 and 200 division courses in
Geography.

Students are advised to include a course
in statistics before entering the 300 and
400 division courses. Only one of GEOG 262,
and GEOG 263-3 shall be included within the 3
additional hours required.

TO: LOWER DIVISION REQUIREMENTS

Students who plan to major, minor or to take Honors in Geography normally should obtain credit for the following courses in the first four levels:

MAJORS:

GEOG 111-3, 121-3, 141-3, 250-3, and
262-3 or 263-3.

MINORS:

GEOG 111-3, 121-3, 141-4, and 250-3.

HONORS:

GEOG 111-3, 121-3, 141-3, 250-3, 251-3,
and 262-3 or 263-3.

Students are advised to include a course in
statistics before entering the 300 and 400
division courses.

FROM: UPPER DIVISION COURSE REQUIREMENTS

DIVISION STRUCTURE

DIVISION A

- Section I GEOG 313-3, 314-3,
315-3, 317-3, 318-3,
319-3
- Section II GEOG 322-3, 323-3, 324-
3, 325-3.
- Section III GEOG 343-3, 344-3, 346-3
375-3
- Section IV GEOG 351-3, 361-3, 362-3,
369-3, 381-3, 382-3,
383-3, 385-3

DIVISION B

GEOG 413-5, 414-5, 414-
5, 416-5, 418-5, 419-5,
420-5, 421-5, 422-5,
424-5, 425-5, 429-5,
431-5, 441-5, 444-5,
445-5, 449-5, 452-5
475-5

DIVISION C

GEOG 460-5, 461-5,
462-5, 464-5, 467-5,
469-5, 470-5

DIVISION D

GEOG 404-2, 405-4,
406-2, 407-3, 491-5,
498-5, 499-15

TO: UPPER DIVISION COURSE REQUIREMENTS

DIVISION A

- Section I GEOG 312-3, 313-3,
314-3, 315-3, 317-3,
318-3, 319-3
- Section II GEOG 322-3, 323-3,
324-3, 325-3
- Section III GEOG 343-3, 344-3,
346-3, 375-3
- Section IV GEOG 351-3, 353-3,
361-3, 362-3, 369-3,
381-3, 382-3, 383-3,
385-3

DIVISION B

GEOG 413-5, 414-5,
415-5, 416-5, 418-5,
419-5, 420-5, 421-5,
422-5, 424-5, 425-5,
429-5, 431-5, 441-5,
444-5, 445-5, 449-5,
452-5, 475-5

DIVISION C

GEOG 460-5, 461-5,
462-5, 464-5, 467-5,
469-5, 470-5

DIVISION D

GEOG 404-2, 405-4,
406-2, 407-3, 491-5,
498-5, 499-15

CHANGE OF REQUIREMENTS

FROM: COURSE REQUIREMENTS

Students are expected to consult with a Departmental Undergraduate Adviser when they formally declare a Major, Minor or Honors in Geography. Students who do not seek advice from the Department run the risk of prolonging the program.

Majors:

- (a) Five courses from Division A including at least one course from each of Sections I, II and III. (15 Sem.Hrs.)
- (b) One course from Division B*. (5 Sem.Hrs.)
- (c) One course from Division C*. (5 Sem.Hrs.)
- (d) 5 semester hours of credit in any other Geography course numbered 300 and above. (5 Sem.Hrs.)

Total hours required:(30 Sem.Hrs.)

Minors:

15 semester hours of credit in Geography courses numbered 300 and above.

Honors:

- (a) Five courses from Division A including at least one course from each of Sections I, II and III. (15 Sem.Hrs.)

- (b) One course from Division B*. (5 Sem.Hrs.)
 - (c) One course from Division C*. (5 Sem.Hrs.)
 - (d) GEOG 406-2 and 491-5. (7 Sem.Hrs.)
 - (e) 18 semester hours in any other courses numbered 300 and above, but not more than one course from Division C. (18 Sem.Hrs.)
- Total hours required:(50 Sem.Hrs.)

*Division B and/or C requirements for Majors and Honors may be fulfilled by GEOG 498-5 and/or 499-15 depending upon course content.

TO:

UPPER DIVISION COURSE REQUIREMENTS

Students are expected to consult with a Departmental Undergraduate Adviser when they formally declare a Major, Minor or Honors in Geography. Students who do not seek advice from the Department run the risk of prolonging the program.

Majors:

- (a) Five courses from Division A including at least one course from each of Sections I, II and III. (15 Sem.Hrs.)
 - (b) One course from Division B. (5 Sem.Hrs.)
 - (c) 10 semester hours of credit in any other Geography courses numbered 300 and above. (10 Sem.Hrs.)
- Total hours required:(30 Sem.Hrs.)

Minors:

15 semester hours of credit in Geography courses numbered 300 and above.

Honors:

- (a) Five courses from Division A including at least one course from each of Sections I, II and III. (15 Sem.Hrs.)
 - (b) One course from Division B.* (5 Sem.Hrs.)
 - (c) GEOG 406-2 and 491-5. (7 Sem.Hrs.)
 - (d) 23 semester hours in any other courses numbered 300 and above, but not more than one course from Division C.* (23 Sem.Hrs.)
- Total hours required:(50 Sem.Hrs.)

*Division B requirements for Majors and Honors may be fulfilled by GEOG 498-5 and/or 499-15 depending upon course content.

RATIONALE: Experience has shown that, for most students, regional courses provide a far more effective vehicle for synthesis in the context of the lower levels than is the case at the advanced level. The upper-level regional courses however will remain available for advanced study by choice rather than requirement.

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GEOG 001-3-Delete.
GEOG 212-3-Delete.

RATIONALE: GEOG 001 is no longer seen to serve a useful purpose. GEOG 212-3 is being replaced by GEOG 312-3.

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GEOG 312-3: New course - see Appendix A

p. 123

GEOG 353-3: New course - see Appendix

SIMON FRASER UNIVERSITY

C. 81-12A

MEMORANDUM

To..... Sheila Roberts
 Administrative Assistant
 Faculty of Arts

Subject Department of Geography Under-
 graduate Program Changes

From..... E.J. Hickin
 Chairman
 Dept. of Geography

Date..... December 1, 1981

Please note that the following changes were approved by the Department of Geography meeting of November 26 and that I would like them included in the 1982/83 Calendar.

1. The regional requirement for majors and honors students of one course from Division C at the upper levels is to be eliminated and respectively 10 hours and 23 hours (rather than the existing 5 hours and 18 hours) are now required in any geography course numbered 300 and above in section (d).
2. A regional course, one of Geog. 262-3 or 263-3, is to be added to the lower level requirements for majors and honors students. This change eliminates the requirement of "3 additional hours selected from the 100 and 200 division courses in Geography".

Rationale for 1 and 2: Experience has shown that, for most students, regional courses provide a far more effective vehicle for synthesis in the context of the lower levels than is the case at the advanced level. The upper level regional courses however will remain available for advanced study by choice rather than requirement.

3. Geog. 353-3 is to be added to the upper level program.

Rationale: This course is part of an emerging program in the Department (see course proposal attachment for detailed rationale).

4. Geog. 312-3 is to be added to the upper level program.

Rationale: This course replaces Geog. 212-3 and will introduce the material at a more advanced level (see course proposal attachment for detailed rationale).

5. Geog. 001 is to be dropped from the program.

Rationale: It is no longer seen to serve a useful purpose.

E.J. Hickin

EJH/mgb

cc: G.A. Rheumer
 I.M. Curtis

 OFFICE OF THE DEAN

DEC - 2 1981

FACULTY OF ARTS

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Geography

Abbreviation Code: GEOG Course Number: 312 Credit Hours: 3 Vector: 2-1-0

Title of Course: GEOGRAPHY OF NATURAL HAZARDS

Calendar Description of Course: The course will focus on the occurrence and origin of natural hazards, including volcanic eruptions, earthquakes, landslides, avalanches, floods, droughts, tropical storms, forest fires, pests and diseases. Attention will be given to the interaction between natural processes and societies, including attempts to predict and ameliorate the effects of natural disasters within different cultural contexts.

Nature of Course Lecture/Tutorial

Prerequisites (or special instructions):

At least 30 credit hours, including GEOG 111 or 112.

What course (courses), if any, is being dropped from the calendar if this course is approved:

GEOG 212-3

2. Scheduling

How frequently will the course be offered? At least once a year.

Semester in which the course will first be offered? 82-3

Which of your present faculty would be available to make the proposed offering possible? M.L. Barker, C.B. Crampton, R.B. Sagar.

3. Objectives of the Course

To review natural hazards:

1. through the physical processes underlying their occurrence and in light of modern theory;
2. by the predictive techniques and risk assessment approaches in use; and
3. by discussion of societal adjustments in a variety of cultural contexts.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty None

Staff None

Library Present collection does not offer a constraint.

Audio Visual None

Space None

Equipment None

5. Approval

Date: _____

Dec 10 / 81

Department Chairman

RC Brown
Dean

Jan W. Welch
Chairman, SCUS

SCUS 73-34b:- (When completing this form, for instructions see Memorandum SCUS 73-34a. Attach course outline).

Oct. '73

SIMON FRASER UNIVERSITY

MEMORANDUM

George Rheumer Chairman Undergraduate Studies Committee	From..... Mary Barker, Colin Crampton
Subject..... PROPOSED 300-LEVEL NATURAL HAZARDS COURSE	Date..... November 9, 1981

Geography 212 has been offered in this department for many years and is one of the few existing courses which explicitly integrates biophysical and social geography. As an understanding of extreme natural events becomes increasingly important in western Canada (where residential, resource, and recreational developments are penetrating further into mountainous terrain) we feel that the course would be more appropriately offered at the 300-level. Its predominantly physical underpinnings makes it best suited to Section 1 of our departmental offerings, possibly as 312.

For each natural hazard, adequate supportive information will be given as a basis for understanding the processes involved, insofar as these are known. Attempts to predict thresholds governing the precipitation of disastrous events, and to map and zone hazardous environments will be treated. However, whatever the available knowledge and predictive capacity, different groups of people react in different ways. Why this is so, and the repercussions of their differing perceptions will be discussed. Rooted in physical geography, a course on natural hazards ultimately has important cultural implications.

The course would include material and approaches covered in Geog. 212:

1. working definitions of natural hazards and a review of their global significance;
2. systematic review of geological, atmospheric, hydrological, and biological hazards with respect to their origin and occurrence, and range of possible adjustments (e.g. protective engineering works, land-use zoning).

The content would then be expanded to incorporate a more detailed review of societal acceptance of risk, risk assessment methodologies, and hazard zoning techniques.

Course text

Bolt, B.A. et al., 1977. Geological Hazards. New York: Springer verlag, 2nd edition.

Required readings

A reserve reading list would include specialised texts in the field and articles from the following range of journals:

Journal of Arctic and Alpine Research
Arctic
Mountain Research and Development
Geographical Review
Annals of Association of American Geographers
American Scientist
Science
Canadian Geotechnical Journal
Geotimes
Bulletin of Seismological Society of America
Earthquake Information Bulletin
Canadian Journal of Soil Science
Soil Conservation
Journal of Soil & Water Conservation
Bulletin of American Meteorological Society
Weatherwise
Weather
Monthly Weather Review
Water Resources Research
Journal of Hydrology
Ecological Monographs
Ecology
Quarterly Review of Biology etc.

Course vector

The three credit hours would comprise one 2-hour lecture and one 1-hour tutorial. The latter would not run continuously as a tutorial but would include occasional labs and workshops. Field trips would form an important component of the course.

MLB/nrb

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: GEOGRAPHY

Abbreviation Code: GEOG. Course Number: 353 Credit Hours: 3 Vector: 2-0-3

Title of Course: Aerial Photographic Interpretation

Calendar Description of Course: Uses of aerial photography and air photo interpretation in geography. The course is divided into three sections: (1) technical background regarding aerial photography and photo interpretation; (2) application of air photo interpretation, and; (3) introduction to remote sensing.

Nature of Course Lecture / Laboratory

Prerequisites (or special instructions): Geog. 111 and Geog. 250 or permission of Instructor

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? 2 semesters annually

Semester in which the course will first be offered? Fall 1982

Which of your present faculty would be available to make the proposed offering possible? A.C.B. Roberts

Objectives of the Course

To teach the principles of aerial photographic interpretation and to provide practical experience and an introduction to remote sensing in geography.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty	None
Staff	None
Library	Some acquisition of aerial photography
Audio Visual	None
Space	None
Equipment	Some minor purchases may be necessary

5. Approval

Date: 1981:12:08

Dec 10/81

E.J. Michini
Department Chairman

RC Brown
Dean

J. W. Wehst
Chairman, SCUS

SCUS 73-34b:- (When completing this form, for instructions see Memorandum SCUS 71-34a. Attach course outline).

Oct. '73

Rationale Geog. 353

Cartography and aerial photographic interpretation have for many years been considered as central to geographic teaching and research. Although the SFU Geography Department has developed a strong program in cartography and computer cartography the teaching of air photo interpretation and remote sensing has been conducted in an off and on fashion as an adjunct to other courses. The acquisition of a new faculty member with specialization in aerial photography and remote sensing now permits the department to offer an introductory course on aerial photographic interpretation (Geog. 353).

This new course will provide a systematic and detailed introduction to aerial photography, air photo interpretation and remote sensing. Upon completion of the course the successful students will be capable photo interpreters with practical experience in photogrammetry and preparation of thematic maps from aerial photography.

It is anticipated that students from other departments (e.g. Archaeology and Biology) will be interested in the course. A number of students may wish to continue their studies in aerial photography and remote sensing and will be qualified to enroll in the MRM 633 remote sensing course.

The addition of Geog. 353 as an optional course will assist in the development of a more complete program in spatial and environmental analysis.

COURSE OUTLINE

General Information

The course deals with aerial photography and air photo interpretation as a primary cartographic technique in geography and resource inventories. The course is divided into three sections: 1) technical background regarding aerial photography, air photo interpretation and cartography; 2) application of air photo interpretation and resource mapping to environmental analysis, and; 3) introduction to remote sensing.

Nine elementary laboratory exercises provide a basis for practical experience and further study in aerial photography and related cartographic applications.

The final grade for the course will be determined from the laboratory assignments, a mid-term test and a final examination as follows:

Laboratory exercises	50%
Mid-term test	20%
Final examination	30%

The final examination must be passed or a subsequent oral examination must be taken by students who failed the final exam but have sufficient marks for a passing grade.

Supplies: Students are requested to buy a pocket stereoscope and staedtler grease pencils (red, blue, green, yellow) all other material and instruments will be supplied by the Department of Geography.

Text Book: AVERY, T. E., 1977, Interpretation of Aerial Photographs, 3rd Edition, Burgess, Minneapolis.

TOPICS

I Technical Background

(a)¹ Introduction

- maps and aerial photographs in geographical research
- aerial photography and remote sensing

(b) Geometrical Properties of Aerial Photography

- projection of aerial photography
- scale of aerial photography
- relief displacement on aerial photographs
- image distortion on aerial photographs
- rectification of aerial photographs

LABORATORY 1: Introduction to maps and the single aerial photograph

(c) Stereoscopy and aerial photography

- stereoscopic vision
- stereoscopic photography
- pocket and mirror stereoscopes
- pseudoscopic vision
- stereo-exaggeration

LABORATORY 2: The pocket stereoscope and stereogram construction

(d) Basic Photogrammetry

- stereoscopic parallax and height measurement
- height measurement by radial displacement

LABORATORY 3: The mirror stereoscope and drainage interpretation

(e) Aerial Photography

- justification and requirements
- cameras and lens systems
- photographic materials
- mission logistics

LABORATORY 4: (d)² The parallax bar and stereoscopic height measurement

1. Letters indicate lecture topics.

2. (d) indicates a double or two week laboratory.

(f) Mapping

- block stereoscopic coverage
- photogrammetric triangulation
- indexes, mosaics and photomaps
- topographic and thematic mapping
- sources of aerial photographs

LABORATORY 5: Planning an aerial photography mission

II Applications

(g) Interpretation of aerial photographs

- principles of photo interpretation
- direct and indirect indicators
- measurements on aerial photographs
- field and laboratory methods
- mapping through aerial photography

MID-TERM TEST

(h) Terrain analysis

- principles of analysis for geological interpretation
- landform analysis
- hydrographic analysis
- synthesis and terrain analysis

LABORATORY 6: Mapping features of alpine glaciation

(i) Vegetation analysis

- forest resources inventory
- interpretation of tree species
- analysis of vegetation patterns

LABORATORY 7: (d)² Mapping of tree species

(j) Rural and agricultural land use analysis

- analysis of land use patterns
- elements of agricultural interpretation
- elements of rural settlement interpretation

LABORATORY 8: Mapping changing land use I

(k) Urban and Industrial land use analysis

- residential and commercial interpretation
- industrial interpretation
- transportation networks and highway planning

LABORATORY 9: Mapping changing land use II

III Remote Sensing

(l) Photographic Remote Sensing

- the electro-magnetic spectrum
- multi-spectral photography
- colour and false colour photography

(m) Non-photographic Remote Sensing

- passive systems
- active systems
- satellite imagery
- data processing
- Canada Centre for Remote Sensing

TEXT: AVERY, T. E. Interpretation of Aerial Photographs, 3rd edition, Burgess Publishing Company, Minneapolis, 1977.

Journals:

Canadian Journal of Remote Sensing, Canadian Aeronautics and Space Institute.

Photogrammetria, International Society for Photogrammetry.

Photogrammetric Engineering and Remote Sensing, American Society of Photogrammetry.

Photogrammetric Record, The Photogrammetric Society, London.

Publications of the International Training Centre for Aerial Survey, Delft, The Netherlands, Series A: Photogrammetry, Series B: Photointerpretation.

GENERAL SOURCES

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- Murtha, P. A., 1972 "A guide to air photo interpretation of forest damage in Canada", Forest Management Institute, Canadian Forestry Service, Publication 1292, Ottawa.
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