SIMON FRASER UNIVERSITY

S.75-165

MEMORANDUM

To SENATE

From SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Subject PROPOSED CHANGES - DEPARTMENT OF GEOGRAPHY

Date NOVEMBER 10, 1975

MOTION 1: "That Senate approve, as set forth in Paper S.75-165, a revision of lower level course requirements for students who plan to major or minor in Geography to include GEOG 250-3."

MOTION 2: "That Senate approve, as set forth in S.75-165, prerequisite changes in the Geography curriculum (contained in the memorandum of October 16, 1975, from the Department Chairman to the Chairman of the Faculty of Arts Curriculum Committee)."

MOTION 3: "That Senate approve, as set forth in Paper S.75-165, a change in the vector of GEOG 111-3 - Physical Geography from 2-1-1 to 2-0-2."

MOTION 4: "That Senate approve, as set forth in Paper S.75-165, a change in the description of GEOG 250-3 - Cartography I to read 'An Introduction to the Interpretation of Maps and Air Photographs.' (The words 'Geographical illustration, representation and analysis of geographical statistics' are to be omitted.)"

MOTION 5: "That Senate approve and recommend approval to the Board, as set forth in Paper S.75-165, a revision of the description of GEOG 416-5 - Pleistocene Geography to read, 'An examination of the physical geography of the Pleistocene. Climatic change, geomorphic, pedologic and biotic processes and evidence from human geography of the period will be studied as they affect landscape changes.'"

SIMON FRASER UNIVERSITY

S.75-165

MEMORANDUM

To SENATE

From SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Subject Calendar Changes - Geography Department

Date 11th November, 1975

At its meeting of November 4th, 1975, the Senate Committee on Undergraduate Studies took actions which result in the following motions:

MOTION 1

That Senate approve a revision of lower level course requirements for students who plan to major or minor in Geography to include Geo.250-3.

MOTION 2

That Senate approve prerequisite changes in the Geography curriculum as set forth in the memorandum of 16th October, 1975 from the Department Chairman to the Chairman of the Faculty of Arts Curriculum Committee.

Note - It was stressed that the reduction from sixty to thirty semester hours as a prerequisite for entry to upper division courses was a way of ensuring a level of intellectual maturity without impeding unduly the progress of a student who fulfills individual course prerequisites at an early stage. A parallel rationale was put forward for reducing from thirty to fifteen the hours required for admission to 200 level courses.

MOTION 3

That Senate approve a change in the vector of Geo.111-3 - Physical Geography from 2-1-1 to 2-0-2.

MOTION 4

That Senate approve a change in the calendar description of Geo. 250-3 - Cartography I to read "An Introduction to the Interpretation of Maps and Air Photographs". (The words "Geographical illustration, representation and analysis of geographical statistics" are to be omitted.)

MOTION 5

That Senate approve a revision of the calendar description of Geog. 416-5 - Pleistocene Geography to read "An examination of the physical geography of the Pleistocene. Climatic change, geomorphic, pedologic and biotic processes and

/.....

evidence from human geography of the period will be studied as they affect landscape changes."

Daniel R. Birch

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SCUS 75-42E

CALENDAR SUBMISSION

DEPARTMENT OF GEOGRAPHY

1976-77

p. 117 Lower Level Course Requirements

Change in Requirements. FROM:

Lower Level Course Requirements

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

Majors:
GEOG 111-3, 121-3, 141-3, and 6 additional hours selected from the other 100 and 200 division courses in Geography.

Minors:
GEOG 111-3, 121-3, 141-3, and 6 additional hours selected from the other 100 and 200 division courses in Geography.

TO:

LOWER DIVISION COURSE REQUIREMENTS

Students who plan to major, minor or to take honors in Geography should normally obtain credit for the following courses i 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, and 3 additional hours selected from the other 100 and 200 division courses in Geography.

p. 117 Vector Change

GEOG 111-3 Change of vector from 2-1-1 to 2-0-2.

(iii) Prerequisite changes

GEOGRAPHY 121

GEOG 111-3 Physical Geography
An introduction to landforms, climates, soils and vegetation; their origins, distributions, inter-relationships and roles in the ecosystem. Laboratory work and field trips are included (Lecture/~~Tutorial~~ Laboratory)
Students who have credit for GEOG 211-3 may not take this course for further credit.

(Vector will be 2-0-2 formerly was 2-1-1)

GEOG 112-3 Introductory Geology
Basic geology for geographers - an introduction to mineralogy, petrology, weathering, structural geology, methods of dating geological information, and the geological column. Laboratory work and field trips are included. (Lecture/Laboratory)

GEOG 121-3 Economic Geography
This course introduces the basic concepts of economic geography, involving consideration of the spatial organization of economic systems. Factors for consideration include a study of rural, urban, regional, national, and world economic systems of transportation, agriculture, mining, energy, manufacturing, retailing and recreational activities. (Lecture/Tutorial)
Students who have credit for GEOG 221-3 may not take this course for further credit.

GEOG 141-3 Social Geography
Systematic consideration of the spatial and environmental basis of societies, in historical and cultural perspective. (Lecture/Tutorial)
Students who have credit for GEOG 241-3 may not take this course for further credit.

GEOG 201-3 Development of Geographical Ideas
An introductory survey of important geographical ideas in historical perspective. (Lecture/Tutorial)
~~*Prerequisite: 30 credit hours*~~ *Prerequisite: At least 15 credit hours*

GEOG 212-3 Geography of Natural Hazards
A detailed examination of the occurrence and reasons for several major natural hazards and catastrophies with appropriate attention to their importance to societies. Lab work and field trips will be included. (Lecture/Tutorial)
~~*Prerequisite: 30 credit hours. GEOG 111-3 recommended.*~~ *Prerequisite: At least 15 credit hours including GEOG 111*

GEOG 222-3 Issues in Economic Geography
This course is designed to draw and expand upon the basic principles and concepts of economic geography, by focusing on a variety of important issues that fundamentally shape contemporary economic landscapes. Topics for consideration will include population growth, poverty, urban sprawl, developing countries, and economic integration at world, national, and local scales. (Lecture/Tutorial)
~~*Prerequisite: 30 credit hours. GEOG 121-3 recommended.*~~ *Prerequisite: At least 15 credit hours including GEOG 121*

GEOG 242-3 Social Space
Spatial differentiation of human organization, activity and works. (Lecture/Tutorial)
~~*Prerequisite: 30 credit hours. GEOG 141-3 recommended.*~~ *Prerequisite: At least 15 credit hours including GEOG 141 or SA 179*

GEOG 250-3 Cartography I
~~*An introduction to the interpretation of maps and air photographs, geographical illustration, representation and analysis of geographical statistics.* (Lecture/Laboratory)~~
~~*Familiarity with the use and properties of maps is essential to the study of geography. Students majoring in geography are urged to include this course in their program of study.*~~
~~*Prerequisite: 30 credit hours.*~~
~~*Students with credit for GEOG 151-3 may not take this course for further credit.*~~

An introduction to the interpretation of maps and air photographs. (Lecture/Laboratory)
Prerequisite: At least 15 credit hours including GEOG 111 and one of GEOG 121 or 141.
Students with credit for GEOG 151-3 may not take this course for further credit.

GEOG 251-3 Methods in Spatial Analysis
A systematic introduction to the quantitative and theoretical approach to the study of geography. (Lecture/Tutorial/Laboratory)
~~*Prerequisite: 30 credit hours.*~~

Prerequisite: At least 30 credit hours

GEOG 262-3 Canada
The geographical character of Canada, the Canadian environment; regional differences in socio-economic growth. (Lecture/Tutorial)
~~*Prerequisite: 30 credit hours*~~
Students who have credit for GEOG 162-3 may not take this course for further credit.

Prerequisite: At least 30 credit hours including two of GEOG 111, 121 or 141

GEOG 263-3 Selected Regions
A study of the geographical character of a major world region. (Lecture/Tutorial)
~~*Prerequisite: 30 credit hours*~~
Students who have credit for GEOG 161-3 may not take this course for further credit when it is designated as "Europe."
Note: This course may not be counted more than once toward the degree.

Prerequisite: At least 30 credit hours including two of GEOG 111, 121 or 141

Upper Division Courses
~~Students without the stated prerequisites may be granted permission to enrol in 300 and 400 division courses by a Department undergraduate adviser.~~

DELETE

Division A.

~~Normally students enrolling in Division A courses must have accumulated 60 semester hours of credit. Students with 48 or more semester hours of credit and taking 12 hours of lower level courses may enrol in a 300 division course with permission of an undergraduate adviser.~~

Division A courses require at least 30 credit hours for admission and the specific prerequisites listed for each course.

Section I - Physical Geography

GEOG 313-3 Geomorphology
An examination of landforms; processes, laws, and theories of development; types and distributions. (Lecture/Tutorial)
~~*Prerequisite: GEOG 111-3.*~~

Prerequisite: At least 30 credit hours including GEOG 111 and 112

GEOG 314-3 Climatology I
The basic principles of physical and dynamic climatology; classification of climate, small-scale climates, climatic change and applied climatology. (Lecture/Tutorial)
~~*Prerequisite: GEOG 111-3.*~~

Prerequisite: At least 30 credit hours including GEOG 111

GEOG 315-3 Biogeography I
An introduction to vegetation and soils: description, sampling and survey methods; basic ecological concepts, dynamics and classification. Man's place in the soil-vegetation system (Lecture/Laboratory)
~~*Prerequisite: GEOG 111-3.*~~

Prerequisite: At least 30 credit hours including GEOG 111, or BIOSC 101 and 102

GEOG 317-3 Soil Geography
An introduction to soils and soil geography. Factors and processes of soil formation, profile description and soil surveying. Elementary field and laboratory techniques of soil analysis (Lecture/Laboratory)
~~*Prerequisite: GEOG 111-3 or permission of the instructor.*~~

Prerequisite: At least 30 credit hours including GEOG 111 and 112

GEOG 318-3 Sedimentology and Past Environments
An introduction to the interpretation of sedimentary bodies as geomorphic features. Special attention will be given to the development of sedimentology and pedology as tools in geomorphology and archaeology. (Lecture/Laboratory)
~~Prerequisite: GEOG 211 or one of ARC 101, 272 or 273, or permission of the instructor~~

Prerequisite: At least 30 credit hours including GEOG 111 or one of ARCE 101, 272 or 273.

Section II - Economic Geography

GEOG 322-3 Geography of Primary Activities
An examination of the physical, social, economic and political factors giving rise to the geography of primary activities. (Lecture/Tutorial)
~~Prerequisite: GEOG 121-3~~

Prerequisite: At least 30 credit hours including GEOG 111 and 121

GEOG 323-3 Geography of Manufacturing
Basic analyses of manufacturing location, linkages and flows, and the processes of decision-making, locational adaptation and adoption. (Lecture/Tutorial)
~~Prerequisite: GEOG 121-3~~

Prerequisite: At least 30 credit hours including GEOG 121

GEOG 324-3 Geography of Transportation
An empirical and theoretical examination of the geographical aspects of transportation systems. (Lecture/Tutorial)
~~Prerequisite: GEOG 121-3~~

Prerequisite: At least 30 credit hours including GEOG 121

GEOG 325-3 Geography of Tertiary Activities
Central place theory, marketing and retail location, urban economic base, land use models, and tourism. (Lecture/Tutorial)
~~Prerequisite: GEOG 121-3~~

Activities

Prerequisite: At least 30 credit hours including GEOG 121

Section III - Cultural Geography

GEOG 342-3 Geography of Prehistoric Societies
Theoretical and applied analysis of a paleogeography, including the relationships between man and environment. Ecology, physical processes as environmental indices, world regionalization of early subsistence and settlement patterns, urban and agricultural diffusion. (Lecture/Tutorial)
~~Prerequisite: GEOG 141-3~~

Prerequisite: At least 30 credit hours including GEOG 141

GEOG 343-3 Geography of Transitional Societies
Theoretical and empirical approaches to environmental problems of the world's transitional societies, environment and cultural change, cultural processes and the development of primary production and urban growth. (Lecture/Tutorial)
~~Prerequisite: GEOG 141-3~~

Prerequisite: At least 30 credit hours including GEOG 141

GEOG 344-3 Geography of Modern Industrial Societies
The theme of this course is the effect upon modern urban morphology of certain ideas and institutions prevalent in Anglo-Saxon cultures between the late eighteenth and early twentieth centuries. The origin, spread and differentiation of selected man-made landscape features are systematically reconstructed. (Lecture/Seminar)
~~Prerequisite: GEOG 141-3. GEOG 201-3 and courses in nineteenth century English literature and history are recommended.~~
~~Students with credit for GEOG 344-3 under the title "Geography of Contemporary Industrial Societies" may not take this course for further credit.~~

Prerequisite: At least 30 credit hours including GEOG 141. In addition, GEOG 201 and courses in nineteenth century English literature and history are recommended.
Students with credit for GEOG 344 under the title "Geography of Contemporary Industrial Societies" may not take this course for further credit.

Section IV - Other Geographical Areas

GEOG 351-3 Cartography II
Cartographic techniques and materials, processes and photographic methods applicable to cartographic and geographic presentation, problems of presentation. (Lecture/Laboratory)
~~Prerequisite: GEOG 151-3 or 251-3~~

GEOG 361-3 Introduction to Urban Geography
This course will introduce basic concepts in the study of urban geography by systematically identifying and examining major components of urban structure. (Lecture/Seminar)
~~Prerequisite: GEOG 111-3, 121-3 and 141-3 or permission of an undergraduate adviser.~~
It is preferable, but not essential, to take this course before taking GEOG 362-3

GEOG 362-3 Geography of Urban Development
This course will apply the principles of urban geographical analysis to the study of urbanization as exemplified in the development of cities in Europe and North America.
(Lecture/Tutorial)
~~Prerequisite: GEOG 111-3, 121-3 and 141-3 or permission of an undergraduate adviser.~~
It is preferable, but not essential, to take this course after having taken GEOG 361-3

GEOG 369-3 Human Microgeography
An examination of human interaction with physical environment, focusing on the individual as the unit of analysis, with special emphasis upon designed environments.
(Lecture/Seminar)
~~Prerequisite: GEOG 141-3~~
Students with credit for GEOG 349-3 may not take this course for further credit.

GEOG 375-3 Historical Geography I
Geographical factors in the settlement of Canada and the United States, the role of the frontier; and geographic factors in the changing nature of the perception of resources.
(Lecture/Seminar)
~~Prerequisite: GEOG 141-3~~
Students with credit for GEOG 345-3 may not take this course for further credit

GEOG 381-3 Political Geography
Theoretical approaches to problems of the interactions of political decisions and power structures with territorial organization.
(Lecture/Tutorial)
~~Prerequisite: GEOG 141-3~~

GEOG 382-3 Population Geography
A study of the application of theories of population growth and demographic techniques; a consideration of the implications of these on the distribution and evolution of population in selected areas.
(Lecture/Tutorial)
~~Prerequisite: GEOG 121-3 and 141-3~~

Division B.

~~Where specific requirements are not stated, the following courses are extensions of work at the 300 Division. At least 12 units of 300 division Geography are required before entering a Division B course. Admission is granted by an undergraduate adviser.~~

GEOG 413-5 Geomorphology II
The appreciation of statistical and other methodologies in the examination of theoretical and applied problems in landform analysis.
(Lecture/Seminar)
~~Prerequisite: GEOG 113-3~~

Prerequisite: At least 30 credit hours including GEOG 251

Prerequisite: At least 30 credit hours including GEOG 111, 121 and 141

Prerequisite: At least 30 credit hours including GEOG 111, 121 and 141

Prerequisite: At least 30 credit hours including GEOG 141

Prerequisite: At least 30 credit hours including GEOG 141

Prerequisite: At least 30 credit hours including GEOG 141

Prerequisite: At least 30 credit hours including GEOG 121 and 141

Division B courses require at least 60 credit hours for admission and the specific prerequisite listed for each course.

Prerequisite: At least 60 credit hours including GEOG 313

GEOG 414-5 Climatology II

Applied climatology. Field techniques and the statistical tools used with reference to selected universal problems. (Lecture/Seminar)

~~Prerequisite: GEOG 314-3~~

Prerequisite: At least 60 credit hours including GEOG 314

GEOG 415-5 Biogeography II

A review of some major world vegetation types and their associated soils. Emphasis will be placed on ecological problems and research methodology, human interference and human perception. (Lecture/Seminar)

~~Prerequisite: GEOG 315-3~~

Prerequisite: At least 60 credit hours including GEOG 315

GEOG 416-5 Pleistocene Geography

An examination of the physical and cultural geography of the Pleistocene. Climatic change and associated geomorphic processes will be studied in relation to the human occupancy of the earth, and the landscape changes that result. (Lecture/Seminar)

~~Prerequisites: GEOG 111-3 and 141-3~~

Prerequisite: At least 60 credit hours including one of GEOG 313, 314, 315, 317, 318.

GEOG 419-5 Selected Topics in Physical Geography

The topics will vary from semester to semester depending upon the interests of faculty and students. (Seminar/Laboratory)

~~Note: This course may not be counted more than once toward the degree~~

Prerequisite: At least 60 credit hours including two of GEOG 313, 314, 315, 317, 318 depending upon topic selected.

GEOG 420-5 Comparative Cultural Geography

A comparative study of selected world cultures and landscapes in the light of recent theoretical developments in geography. (Lecture/Seminar)

~~Prerequisite: GEOG 342-3 or 343-3~~

Prerequisite: At least 60 credit hours including GEOG 242 and two of GEOG 342, 343, 344.

GEOG 421-5 Geography of Resource Development

Geographical aspects of development and management of natural resources. Particular attention will be given to contemporary problems in Western Canada. (Lecture/Seminar)

Prerequisite: At least 60 credit hours including 9 hours of courses from Geography Division A and GEOG 322.

GEOG 422-5 The Geography of Lesser Developed Countries

A geography study in both theoretical and empirical terms of "development" and "underdevelopment" with particular references to selected lesser developed regions. (Lecture/Seminar)

Prerequisite: At least 60 credit hours including GEOG 111, 121, 141

GEOG 424-5 Urban Transportation

An extension of the theoretical and conceptual approach to transportation (GEOG 324-3), but with application to urban areas. (Lecture/Seminar)

~~Prerequisite: GEOG 324-3~~

Prerequisite: At least 60 credit hours including GEOG 324 and GEOG 361 or 362

GEOG 425-5 Geography of Communications

A geographical study of circulation and communication theories. (Lecture/Seminar)

~~Prerequisites: GEOG 324-3 and 344-3 are recommended~~

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A.

GEOG 429-5 Selected Topics in Economic Geography

The topics will vary from semester to semester depending upon the interests of faculty and students. (Lecture/Seminar)

~~Note: This course may not be counted more than once toward the degree~~

Prerequisite: At least 60 credit hours including two of GEOG 322, 323, 324, 325, depending upon topic selected.

GEOG 431-5 The Landscape in Science, Art, Music, and Literature

This course focuses on landscape, the central study of geography. It does not, however, restrict itself to considering only the scientific interpretations of landscape, but investigates how these interpretations have influenced and interacted with aesthetic perceptions of landscape. (Lecture/Seminar)

~~Prerequisites: Students must have the minimum requirements appropriate to their major honours subjects for taking a 400 division course~~

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A or the minimum requirements for taking a 400 level course for students majoring in subjects other than Geography.

GEOG 441-5 Geography of Urban Regions
An evaluation of the nature of urbanization, having specific reference to theories of urban spatial structure and to comparisons of urbanization in Canada and abroad. (Lecture/Seminar)
~~Prerequisite: One of GEOG 323-3, 324-3, 325-3, 341-3, 342-3, 361-3, 362-3.~~

Prerequisite: At least 60 credit hours including GEOG 361 or 362.

GEOG 443-5 Regional Planning
Concepts and theories of regional development and environmental planning; the spatial component of regional planning problems: goal formulation, process and implementation. (Lecture/Seminar)
~~Recommended prerequisites: GEOG 323-3, 325-3 and 344-3.~~

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A.

GEOG 449-5 Selected Topics in Cultural Geography
The topics will vary from semester to semester depending upon the interests of faculty and students. (Lecture/Seminar)
~~Note: This course may not be counted more than once toward the degree.~~

Prerequisite: At least 60 credit hours including two of GEOG 342, 343, 344, 369 depending upon topic selected.

GEOG 452-5 Theoretical and Computer Cartography
A study of theoretical problems of cartography and their implementation in the computerized manipulation and representation of surfaces and maps. (Lecture/Tutorial/Laboratory)
~~Prerequisites for geographers: GEOG 350-3 (or 351) and upper level standing.~~
~~Prerequisites for non-geographers: Programming knowledge and upper level standing.~~

Prerequisite: At least 60 credit hours including GEOG 250 or 251 or Computing Science 201.

GEOG 475-5 Historical Geography II
An examination of the ways in which the study of historical geography has been adapting to new problems, new methodologies, new techniques, and new sources. The course will attempt to deal primarily with the application of historical geography to a North American context with an emphasis on Canada and British Columbia. (Lecture/Seminar)
~~Prerequisites: GEOG 375-3 (or 345-3).~~

Prerequisite: At least 60 credit hours including GEOG 375.

Division C.

~~These courses are primarily intended for Geography majors and prospective honors candidates in their seventh or eighth semesters. Familiarity with the principal fields of systematic geography will be expected, and students applying for admission to these courses should have completed at least twelve semester hours of systematic geography in the 300 division. Other students may be admitted with the permission of an undergraduate adviser.~~

Students applying for admission to Division C courses will be expected to be familiar with the principal fields of systematic geography. Division C courses require at least 60 credit hours including 12 hours of courses from Geography Division A.

GEOG 460-5 Selected Regions
A study of the geographical character of a major world region. (Lecture/Seminar)
~~Note: This course may not be counted more than once toward the degree.~~

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A.

GEOG 461-5 Western Europe
The geographical character of Western Europe and of its current political, economic, and social patterns. (Lecture/Seminar)

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A.

GEOG 462-5 Canada
Selected problems in the geography of Canada, emphasizes territorial differentiation in cultures, regional resource problems, interregional resource conflicts, and the question of the geographical basis for national unity. (Lecture/Seminar)

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A.

GEOG 464-5 Intertropical Africa
Africa between the tropics; attention will also be given to the general problems of low latitude regions and of developing countries (Lecture/Seminar)

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A.

GEOG 467-5 Latin America
A geographical survey of Latin America, its environmental problems and national unities, economic enclaves and regional variations in cultural and economic growth; significance as a world region. (Lecture/Seminar)

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A.

GEOG 469-5 The North American "Middle North"
Special attention will be given to resource appraisal and utilization, spatial organization, and the consideration of future development; comparisons will be made with experience of sub-Arctic development in other parts of the world. (Lecture/Seminar)

Prerequisite: At least 60 credit hours including 12 hours of courses from Geography Division A.

Division D.

Courses in this division are primarily intended for candidates for honors in Geography but, with the exception of GEOG 491-5, they are open to Geography majors also. GEOG 406-2 and 407-3 should be taken in the fifth and sixth semesters.

Note: Division B and/or Division C major and honors requirements may also be fulfilled by GEOG 498-5 and/or 499-15.

GEOG 404-2 Seminar
GEOG 405-4 Seminar
GEOG 404-2 and 405-4 are designed for upper level Geography major and honors students who wish to continue research started in conjunction with an earlier course.
Permission to enter Seminar courses requires written consent both from the faculty member willing to supervise the research and the Chairperson of the Department.

GEOG 406-2 Geographical Methodology
Methods of geographical research, types of explanations, theory and hypothesis formulation, geographical testing and research design. (Seminar)

Prerequisite: 60 credit hours.

GEOG 407-3 Quantitative Methods in Geography
An examination of the basic quantitative techniques used in geographical investigation. (Lecture/Seminar)
~~*Prerequisites: GEOG 406-2 and MATH 101-3 or permission of an undergraduate adviser. In special circumstances the Department may permit a student to take GEOG 406-2 and GEOG 407-3 in the same semester.*~~

Prerequisite: 60 credit hours including GEOG 251 or MATH 101.

GEOG 491-5 Honors Essay
All candidates for honors will be required to submit a major paper on a geographical topic to be selected in consultation with the department.

Prerequisite: 105 credit hours and consent of supervisor. See a departmental academic advisor for details.

GEOG 498-5 Field Studies
Special studies and practical problems in field techniques. (5 hr. field/Laboratory)
~~*Prerequisites: At least 60 semester hours credit and completion of 12 semester hours of Geography Division A courses.*~~

cap hour

Prerequisite: 75 credit hours including 30 hours of courses in geography.

GEOG 499-15 Directed Readings/Field Study
A course in which reading and research, and/or field work will be supervised by faculty members. ~~(15 hour seminar/field/laboratory)~~
~~*Prerequisites: At least 60 semester hours credit and completion of 12 semester hours of Geography Division A courses.*~~

(15 hour Seminar/Field/Laboratory)

~~*Permission to enter GEOG 499-15 requires the approval of the Departmental Policy Committee. See an undergraduate adviser for further details.*~~

Prerequisite: 75 credit hours including 30 hours of courses in geography, consent of supervisor, and proposal approval of the Departmental Policy Committee. See a departmental academic advisor for details.

SIMON FRASER UNIVERSITY

MEMORANDUM Mike R.

Sheila Roberts Secretary, Faculty of Arts Curriculum Committee	From Michael C. Roberts Chairman, Geography Department
Subject Revised Prerequisites in the Geography Programme	Date October 28, 1975.

In keeping with the spirit of the proposed changes in the Faculty of Arts regulations, as well as with the logic of the prerequisite requirements in a semester system, the department not only changed its prerequisite structure but also the number of hours required to enter 300 and 400 level courses. The reduction from 60 to 30 hours was agreed upon as a way of ensuring a level of intellectual maturity without impeding, unduly, the progress of a student who fulfills individual course prerequisites at an early stage in his/her programme.

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SIMON FRASER UNIVERSITY

MEMORANDUM

To L. Boland, Chairman Faculty of Arts Curriculum Committee	From M.C. Roberts, Chairman Department of Geography
Subject	Date 16 October 1975

The Department of Geography offers for your consideration the revised prerequisite structure for the Geography Undergraduate Curriculum which attempts to accommodate the essence and spirit of the newly proposed regulations for the Batchelor of Arts degree. The Department welcomes any comments you or members of your committee may have and will gladly assist in further clarifying any matters that may arise.

The proposed prerequisites for the Undergraduate Geography courses are:

NO PREREQUISITES FOR THE FOLLOWING COURSES:

Geography 001	Geography 112
101	121
111	141

AT LEAST 15 CUMULATIVE HOURS INCLUDING LISTED PREREQUISITES, IF ANY, FOR THE FOLLOWING COURSES:

Geography 201		
212 -	prerequisite:	Geog. 111
222 -	"	Geog. 121
242 -	"	Geog. 141 or S & A 170
250 -	"	Geog. 111 AND 121 OR 141
251		
262 -	"	Two of Geog. 111, 121, 141
263 -	"	Two of Geog. 111, 121, 141

AT LEAST 30 CUMULATIVE HOURS INCLUDING LISTED PREREQUISITES ARE REQUIRED FOR THE FOLLOWING COURSES:

Geography 313 -	prerequisite:	Geog. 111 AND 112
314 -	"	Geog. 111
315 -	"	Geog. 111 OR BioSc. 101 AND 102
317 -	"	Geog. 111 AND 112
318 -	"	Geog. 111 OR one of Arch. 101, 272, or s73
322 -	"	Geog. 111 AND 121
323 -	"	Geog. 121
324 -	"	Geog. 121
325 -	"	Geog. 121
342 -	"	Geog. 141

343 — Geog 141

Geography 344 -	prerequisite:	Geog. 141
351 -	"	Geog. 250
361 -	"	Geog. 111, 121, 141
362 -	"	Geog. 111, 121, 141
369 -	"	Geog. 141
375 -	"	Geog. 141
381 -	"	Geog. 141
382 -	"	Geog. 121 AND 141

AT LEAST 60 CUMULATIVE HOURS INCLUDING LISTED PREREQUISITES, IF ANY, ARE REQUIRED FOR THE FOLLOWING COURSES:

Geography 413 -	prerequisite:	Geog. 313
414 -	"	Geog. 314
415 -	"	Geog. 315
416 -	"	One of Geog. 313, 314, 315, 317, 318
419 -	"	Two of Geog. 313, 314, 315, 317, 318, depending upon topic selected.
420 -	"	Geog. 242 AND two of Geog. 342, 343, 344
421 -	"	12 hrs. of Geog. Div. A, including Geog. 322
422 -	"	Geog. 111, 121, 141
424 -	"	Geog. 324 AND 361 OR 362
425 -	"	12 hours of Geog. Div. A
429 -	"	Two of Geog. 322, 323, 324, 325, depending upon topic selected.
431 -	"	12 hrs. of Geog. Div. A OR The minimum requirements appropriate to the major subject for taking a 400 level course.
441 -	"	Geog. 361 OR 362
443 -	"	12 hrs. from Geog. Div. A.
449 -	"	Two of Geog. 342, 343, 344, 369, depending upon topic selected.
452 -	"	Geog. 251 OR 250 OR Computing Science 201
475 -	"	Geog. 375
460 -	"	12 hrs. from Geog. Div. A
461 -	"	12 hrs. from Geog. Div. A
462 -	"	12 hrs. from Geog. Div. A
464 -	"	12 hrs. from Geog. Div. A
467 469 -	"	12 hrs. from Geog. Div. A
406 -		
407 -	"	Geog. 251 OR Math 101

AT LEAST 75 CUMULATIVE HOURS INCLUDING LISTED PREREQUISITES, IF ANY, ARE REQUIRED FOR THE FOLLOWING COURSES:

Geography 498 - prerequisite: 30 hrs. of Geography courses

499 - " 30 hrs. of Geography courses and approval of the Departmental Policy Committee.

404 - CONSENT OF INSTRUCTOR

405 - CONSENT OF INSTRUCTOR

AT LEAST 105 CUMULATIVE HOURS REQUIRED FOR THE FOLLOWING COURSE:

Geography 491 - CONSENT OF SUPERVISOR.

Yours sincerely,

Michael C Roberts

MCR:DJM

(IV)

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

Change of Calendar Description and Major/Minor Degree Requirements + Prerequisite

1. Calendar Information

Department: GEOGRAPHY

Abbreviation Code: GEOG Course Number: 250 Credit Hours: 3 Vector: 1-0-3

Title of Course: CARTOGRAPHY I

Calendar Description of Course:

An introduction to the interpretation of maps and air photographs.

Nature of Course Lecture/laboratory

Prerequisites (or special instructions): Completion of at least 15 semester hours credit GEOG. 111 and GEOG 121 or 141. ∧Change of Status from Geography elective to Geography requirement for Geography major and minor students.

What course (courses), if any, is being dropped from the calendar if this course is approved: Change of Calendar Description Only.

2. Scheduling

How frequently will the course be offered? Twice to Three Times Yearly

Semester in which the course will first be offered? 67-3 (76-3 under new description)

Which of your present faculty would be available to make the proposed offering possible? E.J. Hickin, C.B. Crampton, A. MacPHerson, M.L. Barker, M.C. Roberts

3. Objectives of the Course

See Attached

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty
Staff
Library
Audio Visual
Space
Equipment

} Change of Calendar description only

5. Approval

Date: 22 Oct 75 Oct 30/75

Michael C. Roberts — Department Chairman

W. G. A. Bruce — Dean

_____ — Chairman, SCUS

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

OBJECTIVES OF THE COURSE

Maps are essential and characteristic tools of geographic study and are both sources of information and a means of making geographic statements; many kinds of geographic information are most succinctly expressed in diagrammatic form, often in conjunction with cartographic reproduction. The course will include practical work in the reading of maps, the use of air photographs, the construction of simple maps and the presentation of data by means of maps and diagrams.

Revising the prerequisite structure of Geography majors and minors to include GEOG 250-3 will help to ensure that students acquire a familiarity with the use and properties of maps.

Simon Fraser University
Department of Geography

Geography 250

COURSE OUTLINE

Cartography

General: Geography 250 is a first course in field surveying and cartography designed to give students practical experience in all phases of map construction and interpretation. The course will include instruction in theoretical and practical aspects of field surveying, data presentation, map and aerial photograph interpretation and elementary drafting techniques.

Course Text:

Chevrier, E.D. & Aitkens, D.F.W., 1970, Topographic map and air photo interpretation, Macmillan, Toronto, 184 p.

Organisation: The class will meet for a one hour lecture each week. In addition, practical classes of 3-hour duration will be held on a weekly basis. The lecture will be used to provide the body of theory on which the practical work will be based. Practical work will include set assignments and is by far the more important of the two components of the course.

Grading: Grades for the course will be assessed as follows:

Practical assignments:	55 per cent
Mid-term examination:	25 per cent
Mapping project:	20 per cent

NOTE: There will be no final examination.

Equipment: Students must obtain the equipment listed on the outline to be distributed at the first lecture.

Course Topics:

1. Introduction to course: small and large scale mapping.

   A. Large-scale mapping

2. Some useful math in surveying and map-making.

3. Principles involved in making a map:

   (a) Method of 3 measured sides.
   (b) Method of offset.
   (c) Method of intersection.
   (d) Method of resection.

4. Types of field survey:

   (a) chain triangulation
   (b) pace and compass traverse
   (c) plane table
   (d) dumpy level traverse
   (e) abney level

5. Drawing a first map

   (a) problems of geometric distortion
   (b) title
   (c) scale
   (d) symbols and key
   (e) representation of relief
   (f) location of points
   (g) direction indication

B. Small-scale mapping

6. General surveying techniques: (a) ground survey
   (b) photogrammetry

7. Aerial photography

   (a) geometry of single photographs
   (b) stereoscopic models
   (c) photograph interpretation

8. The Canadian topographic maps

   (a) elements of a topographic map
   (b) general map interpretation
   (c) maps and photographs - a team

9. Map projections - types and properties

10. Base maps, data presentation, and general graphics

11. Drafting techniques

12. Conclusion

Simon Fraser University
Department of Geography

Geography 250
G.A. Rheumer

Course Outline

An Introduction to the Interpretation of Maps and Air Photographs

Lecture Outline:

Part I: The Map:

1. Map Components:

   (a) Title
   (b) Basic Properties: distance, direction, area, shape
   (c) Scales
   (d) Symbols
   (e) Border Information
   (f) Co-ordinate Systems: geographic grid, military grid
   (g) Projections: types and properties

2. Map Types: Canadian, American, British:

   (a) Topographic
   (b) Cadastral
   (c) Ordinance
   (d) Specialty Maps

3. Reading the Map:

   (a) Physical Landscape
      i. Relief, profiles, gradients
      ii. Geomorphic landscapes
      iii. Climate
      iv. Soils
      v. Vegetation

   (b) Human Landscapes
      i. Agriculture
      ii. Fishing
      iii. Forestry
      iv. Mining
      v. Manufacturing
      vi. Transportation and Communication
      vii. Population and Settlement

Part II: The Air Photograph

1. Air Photo Types

   (a) Vertical and Oblique
   (b) Black and White - Colour

2. Physical Properties

   (a) Scale
   (b) Principal Point, Plumb Point, Isocentre
   (c) Distortion: Tilt (radial) and height

3. Interpretation

(a) Size and Shape
(b) Associated features: e.g. club-house, greens, fairways
(c) Colour
(d) Stereoscopes and Stereoscopic Vision
(e) Specific features and their appearance on air photos
    i. Relief
    ii. Soil and Rock
    iii. Water
    iv. Vegetation
    v. Communication and Transportation
    vi. Rural Landscape: Crops
    vii. Urban Landscape: Settlement
    viii. Historical Sites

Part III: Survey of the History of Maps

1. Maps of Antiquity.
2. Greek and Roman
3. Renaissance Maps
4. Age of Exploration and Discovery

Part IV: Maps and Air Photos in the Field

Term Project: Mapping exercise involving field observations, air photographs and the updating of the map.

Required Text:

1. Dickinson, G.C., Maps and Air Photographs, Edward Arnold, London, 1969.

2. Laboratory Manual: Blair, C.L. and Simpson, R.I., The Canadian Landscape: Map and Air Photo Interpretations, Copp Clark, Toronto, 1967.

References:

1. Robinson, A.H. and Sale, R.D., Elements of Cartography, Wiley, 1969.

2. Crone, G.R., Maps and their Makers, Hutchinson, London.

3. Monkhouse, F.J. and Wilkinson, H.R., Maps and Diagrams, Methuen, London.

4. Raisz, Erwin, General Cartography, McGraw-Hill, New York.

5. Warkentin, John, "Discovering the Shape of Canada" in Arts Canada, #188/189, Spring 1974.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

COURSE DESCRIPTION CHANGE ONLY.

(V)

1. Calendar Information

Department: GEOGRAPHY

Abbreviation Code: GEOG Course Number: 416 Credit Hours: 5 Vector: 2-3-0

Title of Course: PLEISTOCENE GEOGRAPHY

Calendar Description of Course:

An examination of the physical geography of the Pleistocene. Climatic change, geomorphic, pedologic and biotic processes and evidence from human geography of the period will be studied as they affect landscape changes.

Nature of Course Lecture/Seminar

Prerequisites (or special instructions):

60 Cumulative Hours including one of GEOG. 313, 314, 315, 317, 318

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

Course description change only.

2. Scheduling

How frequently will the course be offered? Is already presented once every year

Semester in which the course will first be offered? Was first offered 70-2. Will be offered with the new description in 76-3.

Which of your present faculty would be available to make the proposed offering possible? R.B. Sagar; M.C. Roberts; F.F. Cunningham has participated.

3. Objectives of the Course

The course is of fundamental importance to the physical geography programme of the department because it reviews the time period during which major modifications were made to the North American landscape. In particular, the landforms and ecology of British Columbia have to be interpreted in the light of Pleistocene events. The course will be of value to students in Archaeology, Biology and PDP.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty
Staff
Library
Audio Visual
Space
Equipment

Course description change only

5. Approval

Date: 22 Oct 75 Oct. 30/75

Michael C. Roberts — Department Chairman

W.G.A. Bruns — Dean

Chairman, SCUS

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

Oct. '73

Simon Fraser University
Department of Geography

Geography 416
ANO & TBA

Course Outline

PLEISTOCENE GEOGRAPHY

Prerequisite: 60 cumulative hours including one of GEOG 313, 314, 315, 317, 318.

Introduction: The course will consider major natural landscapes developed during the conventional Pleistocene period, c. 2,000,000 to 10,000 years B.P. Action and interaction of the principal physical processes associated with the various environments will be emphasized, as well as the biotic processes considered to be of importance during the emergence of humans.

Text: Butzer, K.W. Environment and Archaeology: An Introduction to Pleistocene Geography. Aldine.

Grades: These will be based on the following components:

25% Mid-term exam	25% Term paper
25% Final exam	25% Assigned work

Course Organization: Each week there will be two one hour lectures supplemented by a combined laboratory-discussion block. The field trips are required.

Weekly Outline:

WEEK 1: OVERVIEW OF THE COURSE AND THE PROBLEM OF CAUSES

a. A brief outline of the objectives of the course.
b. A review of the history of research in the Pleistocene.
c. Causes of the Pleistocene: the evidence of climatic change.

WEEK 2: GLACIAL GEOMORPHOLOGY: Introductory concepts

a. Origin and movement of glaciers.
b. Regimen of glaciers.
c. The processes of glacial erosion.

WEEK 3: GLACIAL GEOMORPHOLOGY: Alpine glaciation

a. Minor landform features.
b. Major landform features.

Field Trip

WEEK 4: GLACIAL GEOMORPHOLOGY: Continental Glaciation

a. Extent and evidence of the movement of cont. glaciers.
b. Fluvio-glacial deposits.
c. Till landscapes.
d. Loess deposits.

WEEK 5: PERIGLACIAL GEOMORPHOLOGY

a. Periglacial climates and modern analogies.
b. Permafrost.
c. Frozen-ground phenomena.

WEEK 6: THE IMPACT OF THE PLEISTOCENE ON HYDROLOGY

a. Misfit streams.
b. Stream terraces.
c. Varve deposits.
d. Streamflow modifications.

WEEK 7: THE EVIDENCE FROM SOILS AND VEGETATION

a. A brief review of present soils types.
b. Paleosols.
c. Vegetation patterns and climate.
d. Palynology.

WEEK 8: PLEISTOCENE CHRONOLOGY: North America

a. The classical sections of the Midwest.
b. The chronology of the Cordillera.
c. Pleistocene chronology of selected regions of Canada.
d. The evidence of human cultures.

WEEK 9: PLEISTOCENE CHRONOLOGY: Europe

a. The sequence as established by Penck and Bruckner.
b. Northern and central Europe.
c. The Mediterranean.
d. The evidence of human cultures.

WEEK 10: S.W. BRITISH COLUMBIA

a. The Pleistocene chronology.
b. The landform types of the region.
c. The glacial-marine interface.

Field Trip

WEEK 11: THE RANGE OF EVIDENCE

a. A survey of the variety of disciplines contributing evidence to the Pleistocene.
b. Practical applications of Pleistocene research.

WEEKS 12 & 13: STUDENT REPORTS.

Reserve Material (4 hours)

Berry, W.B.N., 1968. Growth of a Prehistoric Time Scale. Freeman.

Charlesworth, J.K., 1957. The Quaternary Era. Arnold.

Cushing, E. & Wright, H., 1967. Quaternary Paleocology. Yale.

Dansereau, P., 1957. Biogeography. Ronald.

Easterbrook, D., 1969. Geomorphology. McGraw Hill.

Embleton, C. & King, C.A.M., 1971. Glacial and Periglacial Geomorphology. Macmillan.

Flint, R.F., 1971. Glacial and Pleistocene Geology. Wiley.

Frenzel, B., 1973. Climatic Fluctuations of the Ice Age. Case Western Reserve.

Heusser, C.J., 1960. Late Pleis. Environments of N. Pacific N. America. AGS Spec. Publication #35.

Laporte, L., 1968. Ancient Environments. Prentice Hall.

Terasmae, J., 1967. Review of Quaternary Paleobotany and Palynology in Canada. GSC 67-13.

Watts, D., 1971. Principles of Biogeography. McGraw Hill.

Wright, H.E. and Frey, D.J. (eds.), 1965. The Quaternary of the U.S. Princeton U.P.

Butzer, K.W., 1971. Environment & Archaeology. 2nd edition, Aldine Atherton.

Ruhe, R.V., 1969. Quaternary Landscapes in Iowa. Iowa State University Press.

Dort, W. & J.K. Jones, 1970. Pleistocene and Recent Environments of the Central Great Plains. University of Kansas Press.

Douglas, R.J.W., 1970. Geology and Economic Minerals of Canada. GSC, Econ. Geol. Report No. 1.