

GEOGRAPHY (GEOG)

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DEGREES/PROGRAMS OFFERED

3-Year BA

4-Year BA

Honours BA

3-Year BSc

3-Year BSc (Business Stream)

4-Year BSc

4-Year BSc (Business Stream)

Honours BSc

Minor - Human Geography

Minor - Physical Geography

INTRODUCTION

The study of Geography is concerned with the Earth in two ways - as the science of interaction between natural elements of the environment, such as weather, plants, soils, and landforms and, secondly, as the science of the distribution and activities of the Earth's population in response to various social and environmental factors. Systematic studies in Geography examine the locations, distributions, arrangements, and associations between groups of interrelated features. In contrast, regional studies examine the totality of geographic phenomena in a particular area. No matter what approach is taken, there are certain skills and techniques that are of geographic relevance (e.g., remote sensing, cartography, Geographic Information Systems).

As a reflection of the diversity that exists within the study of Geography and the special skills required, the Department offers courses within five areas of study: General, Physical Geography, Geomatics (formerly Techniques), Systematic Human Geography, and Regional Geography. One may earn either the 3-Year or 4-Year Bachelor's degree in Arts or Science, as well as the BA Honours or BSc Honours degree. Students pursuing a 3-year, or 4-year BSc also have the opportunity to take a Business Stream – a set of core courses in the Faculty of Business that will provide them with the skills needed to enter and succeed in industry and business. See the "Science with a Business Stream" section of this Course Calendar.

Geography offers a considerable variety of career opportunities. High schools require a continuing supply of Geography teachers. Various federal and provincial agencies dealing with conservation, urban planning, recreation, landscape architecture, and resource use also provide opportunities, especially to those with Honours or graduate work in Geography. Undergraduate training in the subject is often required for certain business careers, especially in surveying, market assessment, and location and general commercial development. Training in Geographical Information Systems is especially in demand.

REQUIREMENTS FOR A 3-YEAR BA IN GEOGRAPHY

ADMISSION REQUIREMENT	Students must consult with the Chair of the Department in planning their course of study.
GRADUATION REQUIREMENT	90 credit hours
RESIDENCE REQUIREMENT	
Degree:	Minimum 30 credit hours
Major:	Minimum 18 credit hours
GENERAL DEGREE REQUIREMENT	
Humanities:	12 credit hours in Humanities
Science:	6 credit hours in Science
Writing:	Minimum 3 credit hours of Academic Writing.
Indigenous:	3 credit hours in designated Indigenous requirement courses
Maximum Introductory Courses:	Students may use a maximum of 42 credit hours at the 1000 level. Of these, maximum of 6 credit hours may be below the 1000 level. As a result, students must take a minimum of 48 credit hours at the 2000-level or above in order to not exceed the maximum number of introductory courses.
Distribution:	Minimum three (3) credit hours from each of five (5) different subjects.
MAJOR REQUIREMENT	
Single Major:	Minimum 30 credit hours/Maximum 48 credit hours.
Double Major:	30 credit hours in Geography and specified number of credit hours in another Major subject or program.

Required Courses:

Common Geography Requirement (9 credit hours)

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics

Regional Geography Requirement (6 credit hours)

- GEOG-3509(3)** Regional Geography of Canada

Three (3) credit hours from among the following:

- GEOG-2503(3)** Manitoba's Physical and Human Environments
- GEOG-3216(3)** Arctic Environments
- GEOG-3508(3)** Geographical Issues in the Developing World
- GEOG-3510(3)** Prairie Landscapes
- GEOG-3511(3)** Topical Regions in Geography
- GEOG-3512(3)** The Human Geography of Northern Canada (fulfils the Indigenous Requirement)

Systematic Human Geography Requirement (6 credit hours)

Minimum of 6 credit hours from the Systematic Human Geography group

Electives (9 credit hours)

Minimum 9 additional credit hours from any area of Geography

Combined Major: Minimum 48 credit hours from 2 different Majors with not less than 18 credit hours from each major subject

Prescribed Courses:

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics
- GEOG-3509(3)** Canada's Physical and Human Environments

3 additional credit hours from the Physical Geography Group

REQUIREMENTS FOR A 3-YEAR BSc IN GEOGRAPHY

ADMISSION REQUIREMENT	Students must consult with the Chair of the Department in planning their course of study.
GRADUATION REQUIREMENT	90 credit hours
RESIDENCE REQUIREMENT	
Degree:	Minimum 30 credit hours
Major:	Minimum 18 credit hours
GENERAL DEGREE REQUIREMENT	
Humanities:	12 credit hours in Humanities
Writing:	Minimum 3 credit hours of Academic Writing.
Indigenous:	3 credit hours in designated Indigenous requirement courses
Maximum Introductory Courses:	Students may use a maximum of 42 credit hours at the 1000 level. Of these, a maximum of 6 credit hours may be below the 1000 level. As a result, students must take a minimum of 48 credit hours at the 2000-level or above in order to not exceed the maximum number of introductory courses.
Distribution:	Minimum three (3) credit hours from each of five (5) different subjects.
MAJOR REQUIREMENT	
Single Major:	Minimum 36 credit hours/Maximum 48 credit hours.
Double Major:	Minimum 36 credit hours in Geography and specified number of credit hours in another Major subject or program.

Required Courses:

Common Geography Requirement (9 credit hours)

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics

Regional Geography Requirement (3 credit hours)

- GEOG-3509(3)** Regional Geography of Canada

Physical Geography/Geomatics Requirement (24 credit hours)

- GEOG-2304(3)** Introduction to Cartography or **GEOG-2309(3)** Statistical Techniques in Environmental Analysis or STAT-1301(3) Statistical Analysis or the former STAT-1201(6) Introduction to Statistical Analysis

12 credit hours from among:

- GEOG-2207(3)** Climatology
- GEOG-2210(3)** Meteorology
- GEOG-2213(3)** Introductory Soil Science
- GEOG-2214(3)** Soil-Vegetation Systems
- GEOG-2215(3)** Mineralogy and Petrology
- GEOG-2216(3)** Physical Geology
- GEOG-2220(3)** Geomorphology
- GEOG-3210(3)** Hydrology

Minimum 12 additional credit hours from the Physical Geography or Geomatics groups (i.e., where the second digit of the course number is a 2 or 3)

External Science Requirement (18 credit hours)

Minimum of 18 credit hours selected from at least two (2) of the Departments of Biology, Applied Computer Science, Chemistry, Mathematics, Physics, and Statistics.

The following courses do *not* qualify:

- | | |
|--------------------------|---|
| ACS-1453(3) | Introduction to Computers |
| ACS-1803(3) | Introduction to Computer-based Systems |
| BIOL-1102(6) | Biology and Human Concerns |
| BIOL-1103(6) | Human Biology |
| BIOL-1005(6) | Concepts in Science |
| BIOL-1106(3) | Environmental Biology |
| CHEM-0100(3) | Foundations of Chemistry |
| CHEM-1801(3) | Headline Chemistry |
| CHEM-2801(3) | Chemistry and Society |
| MATH/PHIL-2305(3) | Philosophy and Mathematics |
| MATH-2903(3) | Mathematics for Early/Middle Years Teachers I |
| MULT-1005(6) | Concepts in Science |
| PHYS-1005(6) | Concepts in Science |
| PHYS-1501(6) | Modern Technology |
| PHYS-1701(6) | Astronomy |
| PHYS-2705(6) | Cosmology: Science Fact to Science Fiction |
| PHYS-2812(3) | The Physics of Music |

Combined Major: Minimum 48 credit hours from 2 different Majors with not less than 18 credit hours from each major subject

Prescribed Courses:

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics
- GEOG-3509(3)** Regional Geography of Canada

6 additional credit hours from the Physical Geography Group

REQUIREMENTS FOR THE 3-YEAR BSc IN GEOGRAPHY WITH A BUSINESS STREAM

Students must complete the requirements of the 3-year BSc in Geography degree (see previous section) and the set of core courses indicated in the "Science with a Business Stream" section of the Calendar.

REQUIREMENTS FOR A 4-YEAR BA IN GEOGRAPHY

ADMISSION REQUIREMENT

Students must consult with the Chair of the Department in planning their course of study.

GRADUATION REQUIREMENT 120 credit hours

RESIDENCE REQUIREMENT

Degree: Minimum 60 credit hours
Major: Minimum 30 credit hours

GENERAL DEGREE REQUIREMENT

Humanities:	12 credit hours
Science:	6 credit hours
Social Science:	12 credit hours
Writing:	Minimum 3 credit hours of Academic Writing.
Indigenous:	3 credit hours in designated Indigenous requirement courses
Maximum Introductory Courses:	Students may use a maximum of 42 credit hours at the 1000 level. Of these, a maximum of 6 credit hours may be below the 1000 level. As a result, students must take a minimum of 78 credit hours at the 2000-level or above in order to not exceed the maximum number of introductory courses.
Distribution:	Minimum three (3) credit hours from each of five (5) different subjects.

MAJOR REQUIREMENT

Single Major:	Minimum 48 credit hours/Maximum 66 credit hours.
Double Major:	Minimum 48 credit hours in each Major subject as specified by the department/program.

Required Courses:

Common Geography Requirement (9 credit hours)

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics

Regional Geography Requirement (6 credit hours)

- GEOG-3509(3)** Regional Geography of Canada

Three (3) credit hours from among the following:

- GEOG-2503(3)** Manitoba's Physical and Human Environments
- GEOG-3216(3)** Arctic Environments
- GEOG-3508(3)** Geographical Issues in the Developing World
- GEOG-3510(3)** Prairie Landscapes
- GEOG-3511(3)** Topical Regions in Geography
- GEOG-3512(3)** The Human Geography of Northern Canada (fulfills the Indigenous Requirement)

Systematic Human Geography Requirement (6 credit hours)

Minimum of 6 credit hours in Systematic Human Geography

Geomatics Requirement (12 credit hours)

- GEOG-2304(3)** Introduction to Cartography
- GEOG-2306(3)** Introduction to Geographic Information Systems
- GEOG-2309(3)** Statistical Techniques in Environmental Analysis or STAT-1301(3) Statistical Analysis or the former STAT-1201(6) Introduction to Statistical Analysis
- GEOG-3330(3)** Research Methods in Geography

Other Requirements

Students must complete a minimum of 48 credit hours in Geography. From the requirements listed, students must ensure to have taken a minimum of 12 credit hours at the upper level (3000 and 4000) Systematic Human or Geomatics courses with a minimum of 6 of those credit hours at the 4000 level.

Combined Major: Minimum 60 credit hours from two (2) different Majors with not less than 24 credit hours from each major subject.

Prescribed Courses:

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics
- GEOG-3509(3)** Regional Geography of Canada

3 additional credit hours from the Physical Geography Group

REQUIREMENTS FOR A 4-YEAR BSc IN GEOGRAPHY

ADMISSION REQUIREMENT

Students must consult with the Chair of the Department in planning their course of study.

GRADUATION REQUIREMENT

120 credit hours, that is, 90 credit hours meeting the requirements for the 3-Year BSc plus an additional 30 credit hours.

RESIDENCE REQUIREMENT

Degree: Minimum 60 credit hours

Major: Minimum 30 credit hours

GENERAL DEGREE REQUIREMENT

Humanities: 12 credit hours
Writing: Minimum 3 credit hours of Academic Writing.
Indigenous: 3 credit hours in designated Indigenous requirement courses
Maximum Introductory Courses: Students may use a maximum of 42 credit hours at the 1000 level. Of these, a maximum of 6 credit hours may be below the 1000 level. As a result, students must take a minimum of 78 credit hours at the 2000-level or above in order to not exceed the maximum number of introductory courses.
Distribution: Minimum three (3) credit hours from each of five (5) different subjects.

MAJOR REQUIREMENT

Single Major: Minimum 57 credit hours/Maximum 78 credit hours.
Double Major: Minimum 57 credit hours in Geography and a specified number of courses in another Major.

Required Courses:

Common Geography Requirement (9 credit hours)

GEOG-1105(3) Challenges of a Changing World: An Introduction to Human Geography
GEOG-1205(3) Science in a Dynamic World: An Introduction to Physical Geography
GEOG-1305(3) Mapping in a Global World: An Introduction to Geomatics

Regional Geography Requirement (3 credit hours)

GEOG-3509(3) Regional Geography of Canada

Physical Geography/Geomatics Requirement (27 credit hours)

GEOG-2304(3) Introduction to Cartography
GEOG-2306(3) Introduction to Geographic Information Systems
GEOG-2309(3) Statistical Techniques in Environmental Analysis or STAT-1301(3) Statistical Analysis or the former STAT-1201(6) Introduction to Statistical Analysis
GEOG-2316(3) Remote Sensing
GEOG-3330(3) Research Methods in Geography

12 credit hours from among

GEOG-2207(3) Climatology
GEOG-2210(3) Meteorology
GEOG-2213(3) Introductory Soil Science
GEOG-2214(3) Soil-Vegetation Systems
GEOG-2215(3) Mineralogy and Petrology
GEOG-2216(3) Physical Geology
GEOG-2220(3) Geomorphology
GEOG-3210(3) Hydrology

Additional Requirements (18 credit hours)

Minimum of 6 additional credit hours from the Physical or Geomatics groups.
Minimum of 6 credit hours from the Systematic Human group at the 3000 level
Minimum of 6 credit hours at the 4000 level also from the Systematic Human Group.

External Science Requirement (24 credit hours)

Minimum of 24 credit hours selected from at least two (2) of the Departments of Biology, Applied Computer Science, Chemistry, Mathematics, Physics, and Statistics.

The following courses do *not* qualify:

ACS-1453(3) Introduction to Computers
ACS-1803(3) Introduction to Computer-based Systems
BIOL-1005(6) Concepts in Science
BIOL-1102(6) Biology and Human Concerns
BIOL-1103(6) Human Biology
BIOL-1106(3) Environmental Biology
CHEM-0100(3) Foundations of Chemistry
CHEM-1801(3) Headline Chemistry
CHEM-2801(3) Chemistry and Society
MATH/PHIL-2305(3) Philosophy and Mathematics
MATH-2901(3) History of Calculus
MATH-2902(3) Mathematics Prior to 1640
MATH-2903(3) Mathematics for Early/Middle Years Teachers I
MULT-1005(6) Concepts in Science
PHYS-1005(6) Concepts in Science
PHYS-1501(6) Modern Technology
PHYS-1701(6) Astronomy
PHYS-2705(6) Cosmology: Science Fact to Science Fiction
PHYS-2812(3) The Physics of Music

Combined Major: Minimum 60 credit hours from 2 different Majors with not less than 24 credit hours from each major subject.
Prescribed Courses:

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics
- GEOG-3509(3)** Regional Geography of Canada

6 additional credit hours from the Physical Geography Group

REQUIREMENTS FOR THE 4-YEAR BSc IN GEOGRAPHY WITH A BUSINESS STREAM

Students must complete the requirements of the 4-year BSc in Geography degree (see previous section) and the set of core courses indicated in the "Science with a Business Stream" section of the Calendar.

REQUIREMENTS FOR AN HONOURS BA IN GEOGRAPHY

ADMISSION REQUIREMENT

Students must have completed a minimum of 30 credit hours to qualify for entry into the Honours program.

Entry, continuing and graduation minimum GPA is 3.0 (B) in Honours Subject courses and 2.5 (C+) in Non-Honours Subject courses.

The minimum 3.0 GPA (B) will be based on all attempts (including course repeats and failures) in Honours Subject courses.

The minimum 2.5 GPA (C+) in all Non-Honours Subject courses will be calculated as for the general degree (i.e., Fs are not included, and in the case of repeated courses, only the highest grade will be used).

GRADUATION REQUIREMENT Minimum 120 credit hours

RESIDENCE REQUIREMENT
Degree: Minimum 60 credit hours

GENERAL DEGREE REQUIREMENT

Humanities: 12 credit hours in Humanities
Science: 6 credit hours in Science
Writing: Minimum 3 credit hours of Academic Writing.
Indigenous: 3 credit hours in designated Indigenous requirement courses

Maximum Introductory Courses: Students may use a maximum of 42 credit hours at the 1000 level. Of these, a maximum of 6 credit hours may be below the 1000 level. As a result, students must take a minimum of 78 credit hours at the 2000-level or above in order to not exceed the maximum number of introductory courses.

Distribution: Minimum three (3) credit hours from each of five (5) different subjects.

HONOURS REQUIREMENT

Single Honours: Minimum 54 credit hours/Maximum 78 credit hours
Minimum 21 credit hours in upper level (3000 and 4000) Honours subject courses of which a minimum of 15 credit hours must be at the 4000 level (including Thesis).

Double Honours: Student must satisfy the requirements for both the Honours BA in Geography and the requirements for the Honours BA in the second Honours department in consultation with the Geography Department Chair.

Required Courses:

Common Geography Requirement (12 credit hours)

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics

Regional Geography Requirement (6 credit hours)

- GEOG-3509(3)** Regional Geography of Canada

Three (3) credit hours from among the following:

- GEOG-2503(3)** Manitoba's Physical and Human Environments
- GEOG-3216(3)** Arctic Environments
- GEOG-3508(3)** Geographical Issues in the Developing World
- GEOG-3510(3)** Prairie Landscapes
- GEOG-3511(3)** Topical Regions in Geography
- GEOG-3512(3)** The Human Geography of Northern Canada (fulfils the Indigenous Requirement)

Systematic Human Geography Requirement (6 credit hours)
Minimum of 6 credit hours in Human Geography

Geomatics Requirement (12 credit hours)

- GEOG-2304(3)** Introduction to Cartography
- GEOG-2306(3)** Introduction to Geographic Information Systems
- GEOG-2309(3)** Statistical Techniques in Environmental Analysis or STAT-1301(3) Statistical Analysis or the former STAT-1201(6) Introduction to Statistical Analysis
- GEOG-3330(3)** Research Methods in Geography

Thesis Requirement (6 credit hours)

GEOG-4901(6) Honours Geography Thesis - 6 credit hours with a prerequisite of **GEOG-3330(3)** (Research Methods in Geography), 36 credit hours completed in Geography, and a Geography GPA of 3.0.

Other Requirements

Students must complete 54 credit hours in Geography for the major.

Minimum 21 credit hours in upper level (3000 and 4000) Honours subject courses of which a minimum of 15 credit hours (including the thesis) must be at the 4000 level.

Average of 2.5 GPA in non-Geography courses and 3.00 GPA on all attempts in Geography courses (exit requirement).

REQUIREMENTS FOR AN HONOURS BSc IN GEOGRAPHY

ADMISSION REQUIREMENT

Students must have completed a minimum of 30 credit hours to qualify for entry into the Honours program.

Entry, continuing and graduation minimum GPA is 3.0 (B) in Honours Subject courses and 2.75 in Non-Honours Subject courses.

The minimum 3.0 GPA (B) will be based on all attempts (including course repeats and failures) in Honours Subject courses.

The minimum 2.75 GPA in all Non-Honours Subject courses will be calculated as for the general degree (i.e., Fs are not included, and in the case of repeated courses, only the highest grade will be used).

GRADUATION REQUIREMENT

Minimum 120 credit hours

RESIDENCE REQUIREMENT

Degree: Minimum 60 credit hours

GENERAL DEGREE REQUIREMENT

Humanities: 12 credit hours in Humanities

Writing: Minimum 3 credit hours of Academic Writing.

Indigenous: 3 credit hours in designated Indigenous requirement courses

Maximum Introductory Courses: Students may use a maximum of 42 credit hours at the 1000 level. Of these, a maximum of 6 credit hours may be below the 1000 level. As a result, students must take a minimum of 78 credit hours at the 2000-level or above in order to not exceed the maximum number of introductory courses.

Distribution: Minimum three (3) credit hours from each of five (5) different subjects.

HONOURS REQUIREMENT

Single Honours: Minimum 63 credit hours/Maximum 78 credit hours
Minimum 30 credit hours in upper level (3000 and 4000) Honours Subject courses of which a minimum of 15 credit hours must be at the 4000 level (including Thesis).

Double Honours: Students must satisfy the requirements for both the Honours BSc in Geography and the requirements for the Honours BSc in the second Honours department, in consultation with the Geography Department Chair.

Required Courses

Common Geography Requirement (12 credit hours)

- GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography
- GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography
- GEOG-1305(3)** Mapping in a Global World: An Introduction to Geomatics

Regional Geography Requirement (3 credit hours)

- GEOG-3509(3)** Regional Geography of Canada

Physical Geography/Geomatics Requirements (45 credit hours)

- GEOG-2304(3)** Introduction to Cartography
- GEOG-2306(3)** Introduction to Geographic Information Systems
- GEOG-2309(3)** Statistical Techniques in Environmental Analysis or STAT-1301(3) Statistical Analysis or the former STAT-1201(6) Introduction to Statistical Analysis
- GEOG-2316(3)** Remote Sensing
- GEOG-3330(3)** Research Methods in Geography

15 credit hours from the following:

GEOG-2207(3) Climatology
GEOG-2210(3) Meteorology
GEOG-2213(3) Introductory Soil Science
GEOG-2214(3) Soil-Vegetation Systems
GEOG-2215(3) Mineralogy and Petrology
GEOG-2216(3) Physical Geology
GEOG-2220(3) Geomorphology
GEOG-3210(3) Hydrology

Minimum of 15 additional credit hours of upper level (3000 and 4000) Physical Geography or Geomatics courses (excluding Thesis) with a minimum of 9 credit hours at the 4000 level (excluding Thesis).

Thesis Requirement (6 credit hours)

GEOG-4901(6) Honours Geography Thesis - 6 credit hours with a prerequisite of **GEOG-3330 (3)** (Research Methods in Geography), 36 credit hours completed in Geography, and a Geography GPA of 3.0

External Science Courses (24 credit hours)

Minimum of 24 credit hours selected from at least two (2) of the Departments of Biology, Applied Computer Science, Chemistry, Mathematics, Physics, and Statistics, of which 12 credit hours must be at or above the 2000-level.

The following courses do *not* qualify:

ACS-1453(3)	Introduction to Computers
ACS-1803(3)	Introduction to Computer-based Systems
BIOL-1005(6)	Concepts in Science
BIOL-1102(6)	Biology and Human Concerns
BIOL-1103(6)	Human Biology
BIOL-1106(3)	Environmental Biology
CHEM-0100(3)	Foundations of Chemistry
CHEM-1801(3)	Headline Chemistry
CHEM-2801(3)	Chemistry and Society
MATH/PHIL-2305(3)	Philosophy and Mathematics
MATH-2903(3)	Mathematics for Early/Middle Years Teachers I
MULT-1005(6)	Concepts in Science
PHYS-1005(6)	Concepts in Science
PHYS-1501(6)	Modern Technology
PHYS-1701(6)	Astronomy
PHYS-2705(6)	Cosmology: Science Fact to Science Fiction
PHYS-2812(3)	The Physics of Music

Grade Point Requirement

GPA of 2.75 in non-Geography courses and 3.00 on all attempts in Geography courses (exit requirement).

Suggested Pattern:

Year 1: **GEOG-1105(3)** Challenges of a Changing World; **GEOG-1205(3)** Science in a Dynamic World; **GEOG-1305(3)** Mapping in a Global World

Year 2: 12-18 credit hours in Geography. Recommended: **GEOG-2309(3)** Statistical Techniques in Environmental Analysis **and** **GEOG-2304(3)** Introduction to Cartography
Prerequisite course(s) for planned Honours courses.

Year 3: 3-6 credit hours at the 4000 level in Geography.

Year 4: 9-12 credit hours at the 4000 level in Geography, including the Thesis.

4000-level courses from other Departments may be credited toward the Geography Honours Major with ADVANCE WRITTEN APPROVAL from the Department Chair.

Students must consult with the Department Chair to determine whether they fulfill the general regulations for the Honours program.

Students must complete the Honours application form before EACH registration in a 4000-level course.

Students planning to complete a Double Honours degree in Geography must consult with the Department Chair for further details.

REQUIREMENTS FOR A MINOR IN GEOGRAPHY

Degree: Students completing any undergraduate degree program are eligible to complete the Minor.
Minor: 18 credit hours in the Minor subject, with a minimum of 12 credit hours above the 1000-level
Residence Requirement: Minimum 12 credit hours in the Minor subject

Required courses for Human Geography Minor:**GEOG-1105(3)** Challenges of a Changing World: An Introduction to Human Geography**GEOG-2304(3)** Introduction to Cartography**Elective:**

Any six (6) credit hours at the 2000 level in Human Geography, Regional, or Geomatics

Any six (6) credit hours at the 3000 level or higher in Human Geography, Regional or Geomatics

Required courses for Physical Geography Minor:**GEOG-1205(3)** Science in a Dynamic World: An Introduction to Physical Geography**GEOG-2304(3)** Introduction to Cartography**Elective**

Any six (6) credit hours at the 2000 level in Physical Geography or Geomatics

Any six (6) credit hours at the 3000 level or higher in Physical Geography or Geomatics

GENERAL INFORMATION**Geography Courses Which Satisfy the Science Requirement**

The Science requirement for BA, BBA and BKin degrees will be satisfied by 6 credit hours from the following courses:

GEOG-1201(3)	Introductory Atmospheric Science	GEOG-2306(3)	Introduction to Geographic Information System
GEOG-1202(3)	Introductory Earth Science		
GEOG-1205(3)	Science in a Dynamic World: An Introduction to Physical Geography	GEOG-2316(3)	Introduction to Remote Sensing
		GEOG-3306(3)	Advanced Geographic Information System
GEOG-2220(3)	Geomorphology		
GEOG-2207(3)	Climatology		
GEOG-2210(3)	Meteorology	GEOG-3319(3)	Advanced Remote Sensing
GEOG-2213(3)	Introductory Soil Science	GEOG-4203(3)	Topics in Climatology
GEOG-2214(3)	Soil-Vegetation Systems	GEOG-4212(3)	Topics in Earth Sciences
GEOG-2215(3)	Mineralogy and Petrology	GEOG-4320(3)	Projects in Geomatics
GEOG-2216(3)	Physical Geology	GEOG-4321(3)	Topics in Geomatics I
GEOG-3210(3)	Hydrology	GEOG-4322(3)	Topics in Geomatics II
GEOG-2304(3)	Introduction to Cartography		

Geography Courses Which Satisfy the Social Science Requirement for 4-year BA, BBA and BKin degrees

The Social Science requirement will be satisfied by 12 credit hours from courses in Systematic Human and/or Regional Geography (i.e. courses for which the second digit of the course number is a 4 or 5).

4000-Level Courses: Minimum 3.0 GPA (B) in major courses (students lacking the requisite 3.0 GPA should consult the department concerned regarding eligibility to take 4000-level courses). Permission of the department is required for each 4000-level course.**COURSE LISTINGS**

Geography courses are categorized into five major groups: General, Physical, Geomatics, Human, and Regional. Courses are distinguished by the use of the second digit in the course number as follows:

General	Second digit is 1 (e.g. 1105(3) Challenges of a Changing World: An Introduction to Human Geography)
Physical	Second digit is 2 (e.g. 1205(3) Science in a Dynamic World: An Introduction to Physical Geography)
Geomatics	Second digit is 3 (e.g. 2309(3) Statistical Techniques in Environmental Analysis)
Human	Second digit is 4 (e.g. 2401(3) Agricultural Geography)
Regional	Second digit is 5 (e.g. 2503(3) Manitoba's Physical and Human Environments)

Beyond the minimum requirements for each degree, students may choose courses which provide a coherent specialization within the discipline. Students are encouraged to consult with the Department Chair on guidelines for course selections.

INTRODUCTORY AND GENERAL COURSES		GEOG-3204(3)	Climate Change and Variability
GEOG-1105(3)	Challenges of a Changing World: An Introduction to Human Geography	GEOG-3210(3)	Hydrology
GEOG-1205(3)	Science in a Dynamic World: An Introduction to Physical Geography	GEOG-3216(3)	Arctic Environments
		GEOG-3218(3)	Global Biogeochemical Cycles
		GEOG-3219(3)	Quaternary Environments
		GEOG-4203(3)	Topics in Climatology
		GEOG-4212(3)	Topics in Earth Sciences
		GEOG-4219(3)	Physical Geography Seminar
		GEOG-4702(3)	Directed Readings in Physical Geography
PHYSICAL GEOGRAPHY COURSES		GEOMATICS COURSES	
GEOG-2204(3)	Human Impact on the Environment	GEOG-1305(3)	Mapping in a Global World: An Introduction to Geomatics
GEOG-2207(3)	Climatology	GEOG-2304(3)	Introduction to Cartography
GEOG-2210(3)	Meteorology		
GEOG-2212(3)	Natural Hazards		
GEOG-2213(3)	Introductory Soil Science		
GEOG-2214(3)	Soil-Vegetation Systems		
GEOG-2215(3)	Mineralogy and Petrology		
GEOG-2216(3)	Physical Geology		
GEOG 2220(3)	Geomorphology		

GEOG-2306(3)	Introduction to Geographic Information Systems	GEOG-2431(3)	Population Geography
GEOG-2309(3)	Statistical Techniques in Environmental Analysis	GEOG-2440 (3)	Environment and Culture
GEOG-2316(3)	Remote Sensing	GEOG-3402(3)	Urbanization in the Developing World
GEOG-3306(3)	Advanced Geographic Information Systems	GEOG-3408(3)	Water Resources
GEOG-3319(3)	Advanced Remote Sensing	GEOG-3411(3)	Landscapes of Authenticity: Heritage, Tourism, and Conservation
GEOG-3330(3)	Research Methods in Geography	GEOG-3413(3)	Urban Revitalization: Rebuilding of Decaying Cities
GEOG-4320(3)	Projects in Geomatics	GEOG-3415(3)	Contested Spaces
GEOG-4321(3)	Topics in Geomatics I	GEOG-3430(3)	Housing and the Neighbourhood
GEOG-4322(3)	Topics in Geomatics II	GEOG-3431(3)	Healthy Community and Cities
GEOG-4703(3)	Directed Readings in Geomatics	GEOG-3432(3)	Urban and Community Planning
		GEOG-3435 (3)	Urban Political Ecology
		GEOG-3443(3)	Advanced Tourism
		GEOG-3445(3)	Power, Knowledge, Geography
		GEOG-4403(3)	Urban Land Use: Developmental Processes
		GEOG-4404(3)	Field Research in Urban Geography
		GEOG-4409(3)	Architecture and City Planning
		GEOG-4441(3)	Advanced Studies in Environmental Perception
		GEOG-4443(3)	Advanced Tourism
		GEOG-4445(3)	Power, Knowledge, Geography
		GEOG-4450(3)	Environment and Sustainability I
		GEOG-4701(3)	Directed Readings in Human Geography
SYSTEMATIC HUMAN GEOGRAPHY COURSES			
GEOG-2401(3)	Agricultural Geography		
GEOG-2408(3)	Environmental Perception and Communication		
GEOG-2411(3)	Geography of Globalization		
GEOG-2412(3)	A Geographical Perspective on Tourism		
GEOG-2414(3)	The Urban Environment		
GEOG-2415(3)	An Introduction to Urban Development		
GEOG-2416(3)	Sex, Gender, Space and Place		
GEOG-2417(3)	An Introduction to Economic Geography		
GEOG-2419(3)	Sustainability: Resources, Policy and Activism in Canada		
GEOG-2425(3)	Practice and Method in Human Geography		

REGIONAL GEOGRAPHY COURSES

Students are reminded that Geography 1105(3), 1205(3), and 1305(3) provide appropriate background for all regional courses. Students lacking first year geography and wishing to take a regional course should consult the instructor concerned.

GEOG-2503(3)	Manitoba's Physical and Human Environments
GEOG-3508(3)	Geographical Issues in the Developing World
GEOG-3509(3)	Regional Geography of Canada (Required for all Geography degrees, except the GIS Joint programs)
GEOG-3510(3)	Prairie Landscapes
GEOG-3511(3)	Topical Regions in Geography
GEOG-3512(3)	The Human Geography of Northern Canada

EXPERIENTIAL LEARNING GEOGRAPHY COURSES

GEOG-4801(3)	Geography Field Seminar
GEOG-4901(6)	Honours Geography Thesis

EXPERIMENTAL COURSE

GEOG-3212(3)	Climate Change as Hazard: Causes, Consequences, Responses
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COURSE DESCRIPTIONS

All course descriptions for all undergraduate programs can now be found in one large PDF called "All course descriptions" in the "Academic Calendar" section of the University website:

<http://uwinnipeg.ca/academics/calendar/index.html>