

MAJOR IN PHYSICAL GEOGRAPHY AND GEOMATICS

Physical Geography is the scientific study of processes and patterns at the Earth's surface. It uses field and laboratory measurements and spatial data to evaluate our world's changing climates, water, land, plants and animals. Physical geographers are trained to synthesize environmental knowledge and apply it to real-world problems such as coastal erosion or loss of habitat. Solving these problems also requires the collection, management and computer analysis of the vast amounts of spatial data now available, which is the domain of Geomatics.

Students in the Major in Physical Geography and Geomatics at the University of Ottawa learn to use the full range of geospatial technologies (drones/UAVs, global positioning systems, geographic information systems, satellite imaging, spatial analysis) to study environments ranging from the mountains of the Yukon to the coral reefs of Zanzibar. Graduates from the program will have the scientific knowledge and the technical skills to become leaders in these growing fields.

The program is offered in English and in French.

Learn more about this program (<https://www.uottawa.ca/faculty-arts/geography-environment-geomatics/undergraduate/physical-geography-geomatics-ba-bsc/>)

Program Requirements

The table below includes only the discipline-specific courses. Please refer to the Academic Regulations for information on the Honours bachelor's with double major and the Honours bachelor's with major and minor.

Co-operative education is available when taken as part of an honours degree.

The French immersion stream is available when taken as part of an honours degree.

This program cannot be combined with the Minor in Geomatics.

This program partially satisfies the academic requirements of the Association of Professional Geoscientists of Ontario.

Requirements for this program have been modified. Please consult the 2025-2026 calendar (<http://catalogue.uottawa.ca/en/archives/>) for the previous requirements.

Compulsory courses at the 1000 level

GEG 1301	The Physical Environment	3 Units
ITI 1120	Introduction to Computing I	3 Units

Compulsory courses at the 2000 level

GEG 2301	Earth Surface Processes and Landforms	3 Units
GEG 2304	Climatology	3 Units
GEG 2320	GIS and the Digital Earth	3 Units
GEG 2918	Introduction to Field Research	3 Units

Compulsory courses at the 3000 level

GEG 3105	Earth Observation	3 Units
GEG 3312	Digital Earth Analysis Modeling	3 Units

Compulsory courses at the 4000 level

GEG 4301	Coding the Digital Earth	3 Units
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Optional courses

9 optional course units from: 9 Units

BIO 1131 Introduction to Organismal Biology

CHM 1311 Principles of Chemistry

GEO 1111 Introduction to Earth Systems

GEO 1115 Introduction to Earth Materials

PHY 1321 Principles of Physics I

6 optional course units from one of the following options: 6 Units

Option 1

MAT 1320 Calculus I

MAT 1322 Calculus II

Option 2

MAT 1330 Calculus for the Life Sciences I

MAT 1332 Calculus for the Life Sciences II

3 optional course units from: ¹ 3 Units

GEG 4000 Tropical Field Research

GEG 4001 Northern Field Research

GEG 4100 Glaciology Field Research

GEG 4921 Physical Geography Field Research

15 optional course units from: 15 Units

GEG 3101 Advanced Geomorphology

GEG 3102 Hydrology

GEG 3114 Biogeography

GEG 3300 Selected Topics in Physical Geography

GEG 3306 Quaternary Paleogeography

GEG 3524 Histoire de la géographie

GEG 4000 Tropical Field Research

GEG 4001 Northern Field Research

GEG 4101 Permafrost Environments

GEG 4120 Spatial Data Science

GEG 4121 Applications of Remote Sensing in the Polar Regions

GEG 4126 Seminar in Physical Geography

GEG 4129 Global Climate Change

Total: 60 Units

¹ GEG 4000 and GEG 4001 are 6 unit courses. The extra 3 units will count towards optional 3000 or 4000 level course units.