

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.

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.

Compulsory courses at the 1000 level

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

Compulsory courses at the 2000 level

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| GEG 2301 | Geomorphology | 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

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

Compulsory courses at the 4000 level

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| GEG 4301 | Coding the Digital Earth | 3 Units |
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Optional courses

9 optional course units from: 9 Units

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| BIO 1130 | 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

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| Option 1 | |
| MAT 1320 | Calculus I |
| MAT 1322 | Calculus II |

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| 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

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| 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

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| 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 |
| GEG 4512 | Paléoenvironnements du quaternaire |

Total: 60 Units

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