HONOURS BSC IN GEOLOGY-PHYSICS

The Department of Earth and Environmental Sciences offers programs in geology and, in co-operation with the Department of Physics, also offers a program in geology-physics. The Department is part of the Ottawa-Carleton Geoscience Centre, and its research areas include precambrian studies, tectonics, resource geology, northern studies, environmental geoscience and geochemistry.

Geology studies the composition and evolution of Earth and of other planetary bodies. The discipline extends into many areas: mineralogy, petrology, palaeontology, sedimentology, environmental geology, economic geology, geochemistry, structural geology, and geophysics.

Thus, geologists study matter and geological processes in all their diversity, from atoms and crystals to mountain ranges and the dynamics of the entire planet. The scientific methods used are equally diverse (field studies, instruments to probe the Earth’s depths, microscope examination of minerals and fossils, elemental and isotopic analysis, experimental study of geochemical systems, and computer simulation of geological processes).

Although many program options are offered, students are encouraged to take the Honours B.Sc. in Geology or Geology-Physics, which allows them to meet the accreditation requirements of professional bodies and practice as geoscientists.

In first year, students increase their knowledge of mathematics, physics, chemistry, and biology. Later, they complete several geology courses, which consist of lectures, problem-solving assignments, laboratory work and field excursions.

This program is offered in English and in French.

Program Requirements

Co-operative education is available with this program.

The extended French stream is available with this program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>BIO 1130</td>
<td>Introduction to Organismal Biology</td>
<td>3</td>
</tr>
<tr>
<td>CHM 1311</td>
<td>Principles of Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>GEO 1111</td>
<td>Introduction to Earth Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEO 1115</td>
<td>Introduction to Earth Materials</td>
<td>3</td>
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<tr>
<td>ITI 1120</td>
<td>Introduction to Computing I</td>
<td>3</td>
</tr>
<tr>
<td>MAT 1320</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MAT 1322</td>
<td>Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MAT 1341</td>
<td>Introduction to Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>PHY 1121</td>
<td>Fundamentals of Physics I</td>
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<tr>
<td>PHY 1122</td>
<td>Fundamentals of Physics II</td>
<td>3</td>
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<tr>
<td>3 course units from:</td>
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<tr>
<td>CHM 2330</td>
<td>Physical Chemistry: Introduction to the Molecular Properties of Matter</td>
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<tr>
<td>CHM 2353</td>
<td>Descriptive Inorganic Chemistry</td>
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<td>GEO 2020</td>
<td>Field Studies I</td>
<td>3</td>
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<tr>
<td>GEO 2163</td>
<td>Introduction to Mineralogy</td>
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<tr>
<td>GEO 2164</td>
<td>Analytical Methods in Mineralogy</td>
<td>3</td>
</tr>
<tr>
<td>GEO 2165</td>
<td>Stratigraphy and Sedimentation</td>
<td>3</td>
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<tr>
<td>GEO 2321</td>
<td>Structural Geology and Tectonics</td>
<td>3</td>
</tr>
<tr>
<td>MAT 2322</td>
<td>Calculus III for Engineers</td>
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<tr>
<td>MAT 2384</td>
<td>Ordinary Differential Equations and Numerical Methods</td>
<td>3</td>
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<tr>
<td>PHY 2311</td>
<td>Waves and Optics</td>
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<tr>
<td>PHY 2361</td>
<td>Modern Physics</td>
<td>3</td>
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<tr>
<td>6 optional course units from:</td>
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<tr>
<td>PHY 2104</td>
<td>Introduction to Circuit Theory and Electronics</td>
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</tr>
<tr>
<td>PHY 2323</td>
<td>Electricity and Magnetism</td>
<td>3</td>
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<tr>
<td>PHY 2333</td>
<td>Mechanics</td>
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<td>GEO 3191</td>
<td>Applied Geophysics</td>
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<tr>
<td>GEO 3382</td>
<td>Geochemistry</td>
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<tr>
<td>PHY 3380</td>
<td>Physics of the Earth</td>
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<td>GEO 4010</td>
<td>Honours Project</td>
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<tr>
<td>6 optional course units in geology (GEO) at the 3000 or 4000 level</td>
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<tr>
<td>6 optional course units in physics (PHY) at the 3000 or 4000 level</td>
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<tr>
<td>12 elective course units from the Faculty of Arts, the Faculty of Education, the Faculty of Law, the Faculty of Social Sciences or the Telfer School of Management</td>
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<td>15 elective course units</td>
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<td>Total:</td>
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<td>120</td>
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</tbody>
</table>

Note(s)

1. A language course at the 1000 or 2000 level is strongly recommended.

Students who take the Geology-Physics Program and wish to become registered members of the Association of Professional Geoscientists of Ontario must take 21 units in Earth Sciences from among the optional courses in order to satisfy the requirements of the professional association.

This message is intended for students registered in the Faculty of Science. If the components of your program of study require common compulsory courses, you will have to replace the units as follows:

1. 1000-level courses must be replaced with elective course units;
2. 2000-level courses and above must be replaced with optional course units from either discipline at the same level or above.

Please note that all programs in the Faculty of Science require a minimum of 12 elective course units offered by the Faculty of Arts, the Faculty of Education, the Faculty of Law, the Faculty of Social Sciences or the Telfer School of Management. Once you have decided on the replacement courses, please inform the Office of Undergraduate Programs of the Faculty of Science by email at infosci@uOttawa.ca so that we may amend your Academic Advisement accordingly.