

# ENVIRONMENTAL GEOSCIENCE, B.SC. MAJOR

## Degree Requirements<sup>1</sup>

Course	Title	Hours
<b>Year 1</b>		
GEOL 1340	The Dynamic Earth (C+)	3
GEOL 1400	Time-Trekker's Travelog: Our Evolving Earth	3
ENVR 1000	Environmental Science 1 - Concepts (C+)	3
MATH 1500	Introduction to Calculus (C) <sup>2</sup>	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics (C)	3
CHEM 1120	Introduction to Chemistry Techniques <sup>3</sup>	3
PHYS 1020	General Physics 1 <sup>4</sup>	3
STAT 1000	Basic Statistical Analysis 1 <sup>5</sup>	3
6 credit hours from the Faculty of Arts, including a required "W" course		6
<b>Hours</b>		<b>30</b>
<b>Year 2</b>		
GEOL 2390	Environmental Geology	3
GEOL 2440	Structural Geology 1	3
GEOL 2500	Introduction to Mineralogy	3
GEOL 2520	Igneous and Metamorphic Petrology	3
GEOL 2530	Introductory Sedimentary Petrology and Stratigraphy	3
GEOL 2770	Principles of Inorganic Geochemistry	3
GEOL 2800	Optics and Spectroscopy of Minerals	3
GEOL 2060	Introductory Geophysics	3
6 credit hours of electives		6
<b>Hours</b>		<b>30</b>
<b>Year 3</b>		
GEOL 3130	Communication Methods in the Geological Sciences	3
GEOL 3420	Engineering Geology	3
GEOL 3450	Hydrogeology	3
GEOL 3490	Glacial Geology	3
GEOL 3910	Introduction to Field Mapping <sup>6</sup>	3
SOIL 3600	Soils and Landscapes in Our Environment	3
GEOG 3730	Geographic Information Systems (TS)	3
9 credit hours of electives		9
<b>Hours</b>		<b>30</b>
<b>Year 4</b>		
GEOL 3810	Applied Geophysics	3
GEOL 4260	Applied Geophysics Field Course <sup>6</sup>	3
15 credit hours of Earth Science Environmental Geoscience Electives		15
9 credit hours of electives		9
<b>Hours</b>		<b>30</b>
<b>Total Hours</b>		<b>120</b>

<sup>1</sup> The courses required in this program will satisfy the University Mathematics requirement.

<sup>2</sup> MATH 1230, MATH 1510 or the former MATH 1520 may be used in lieu of MATH 1500.

<sup>3</sup> CHEM 1122 and CHEM 1126 may be used in lieu of CHEM 1120.

<sup>4</sup> PHYS 1050 may be used in lieu of PHYS 1020.

<sup>5</sup> STAT 1150 may be used in lieu of STAT 1000.

<sup>6</sup> Students will register for GEOL 3910 and GEOL 4260 in Summer term.

NOTE: Students should be aware that they are expected to contribute to transportation and accommodation costs. See the department office at the beginning of each year for information.

**Important:** The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program. (Letters in brackets indicate the minimum prerequisite standing in a specific course required for entry to the program).

GEOL 1400 is highly recommended to be taken in Year 1, but will not be considered when assessing entrance requirements to the program. If this requirement is not fulfilled in Year 1, it must be completed by the end of Year 2.

### Notes:

- To fulfil prerequisite requirements, a grade of 'C' must be achieved in any course stipulated as prerequisite to a further course in Earth Sciences, unless a higher prerequisite is stipulated in a course description.

- All courses are not offered every year. The course schedule for the current academic term is available from the Class Schedule in Aurora.

- Students registering in certain courses may be required to pay a portion of the costs associated with field trips. For details, contact the Department general office.

- Equivalent courses offered through Université de Saint Boniface may be used in lieu of the specified courses identified in the degree program chart.

### Earth Sciences Environmental Geoscience Electives

#### Course List

Course	Title	Hours
GEOL 3900	Sedimentology	3
GEOL 4270	Advanced Studies in Earth Sciences	3
GEOL 4280	Instrumental Techniques in Geology	3
GEOL 4370	Global Change	3
GEOL 4810	Geophysical Data Analysis	3
ENVR 2180	Introductory Toxicology	3
ENVR 2550	Environmental Chemistry	3
ENVR 3160	Environmental Responsibilities and the Law	3
ENVR 3250	Environmental Assessment	3
ENVR 4180	Ecotoxicological Risk Characterization	3
ENVR 4550	Aquatic Chemistry	3
GEOG 2310	Introduction to Process Hydrology (PS)	3

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GEOG 2930	Introduction to Oceanography	3
GEOG 3200	Introduction to Remote Sensing (TS)	3