

## BSc GEOPHYSICS

This schedule is suggested as a guide. It recommends 30 cu in each year and distributes the required arts classes over the four years. If you deviate from the recommended schedule check class prerequisites carefully so that you can still graduate in four years. Any class listed below by name and number is required, unless it is specifically identified as an open elective, or a recommended elective, in which case students are advised to take it. Please note that to meet the requirements for registration as a professional geophysicist some restrictions in the choice of electives may apply. Please consult (with Prof. Merriam) if you are unsure. Consult the University Calendar for further details on approved Arts electives.

### YEAR 1

#### MAJORS

#### HONOURS

Geology 121.3 Physical Geology	Geology 121.3 Physical Geology
Mathematics 110.3 Introduction to Calculus	Mathematics 110.3 Introduction to Calculus
Mathematics 116.3 Calculus with Applications	Mathematics 116.3 Calculus with Applications
Physics 121.6 General Physics	Physics 121.6 General Physics
Computers 116.3 Computing I (recommended) or 111.3 Computer Programming and Algorithmic Analysis or 112.3 Design and Analysis of Computer Programs	Computers 116.3 Computing I (recommended) or 111.3 Computer Programming and Algorithmic Analysis or 112.3 Design and Analysis of Computer Programs
Chemistry 112.3 General Chemistry I	Chemistry 112.3 General Chemistry I
6 cu elective from approved Arts. (See below) Science majors must do 18 cu of arts (humanities, social science, fine arts) with some limitations on what you may select. Consult the calendar under program type C. As a suggestion, you could choose 6 cu of arts and 3 cu science elective.	6 cu elective from approved Arts. (See below) Science majors must do 18 cu of arts (humanities, social science, fine arts) with some limitations on what you may select. Consult the calendar under program type C. As a suggestion, you could choose 6 cu of arts and 3 cu science elective.
3 cu ELECTIVE. You could do another of your arts electives here, or a science elective.	3 cu ELECTIVE. You could do another of your arts electives here, or a science elective.

Geophysics is a global business. Many of our graduates spend some time in foreign countries where they may have to interact with people who do not speak english. A language class would be very useful as one of your arts electives. There is considerable activity in geophysics in South America, so spanish might be a good choice. Some knowledge of economics is also recommended.

## YEAR 2

### MAJORS

### HONOURS

Geology 224.3 Mineralogy and Petrology	Geology 224.3 Mineralogy and Petrology
Geology 282.3 Earth Physics	Geology 282.3 Earth Physics
Mathematics 225.3 Intermediate Calculus I	Mathematics 276.3 Vector Calculus I
Mathematics 226.3 Intermediate Calculus II	Mathematics 238.3 Introduction to Differential Equations and Series
Mathematics 266.3 Linear Algebra I	Mathematics 266.3 Linear Algebra I
Physics 229.3 Introductory Electromagnetism and AC Circuits	Physics 229.3 Introductory Electromagnetism and AC Circuits
Engineering Physics 225.3 Waves Fields and Optics	Engineering Physics 225.3 Waves Fields and Optics
Engineering Physics 228.3 Computer tools for Engineering Physics	Engineering Physics 228.3 Computer tools for Engineering Physics
6 cu elective from approved Arts. Keep track of how many of the 18 cu arts you have done and have left to do.	6 cu elective from approved Arts. Keep track of how many of the 18 cu arts you have done and have left to do.

## YEAR 3

### MAJORS

### HONOURS

Geology 334.3 Gravity, magnetics, electromagnetics and radiation	Geology 334.3 Gravity, magnetics, electromagnetic and radiation
Geology 335.3 Seismology and ground penetrating radar	Geology 335.3 Seismology and ground penetrating radar
Geology 245.3 Introduction to Sedimentary Rocks	Geology 245.3 Introduction to Sedimentary Rocks
Geology 258.3 Structural Geology	Geology 258.3 Structural Geology
Engineering Physics 320.3 Discrete Linear Systems and Applied Information Theory	Engineering Physics 320.3 Discrete Linear Systems and Applied Information Theory
Physics 356.3 Intermediate Electromagnetism [MAJORS MAY BE ABLE TO SUBSTITUTE EE301.3 PLEASE CONSULT MERRIAM]	Physics 356.3 Intermediate Electromagnetism
6 cu SENIOR SCIENCE ELECTIVE (Mathematics 338.6 is advised)	Mathematics 338.6 Differential Equations II
6 cu approved arts elective.	6 cu approved arts elective.

## YEAR 4

### MAJORS

### HONOURS

Geology 481.3 Potential Field Methods	Geology 481.3 Potential Field Methods
Geology 482.3 Electrical Methods in Geophysical Prospecting	Geology 482.3 Electrical Methods in Geophysical Prospecting
Geology 483.3 Seismology	Geology 483.3 Seismology
Geology 485.6 Geophysics Field Camp	Geology 485.6 Geophysics Field Camp
15 cu ELECTIVE	15 cu ELECTIVE

Majors must have an overall average of 60% and an average within the major of 62.5% to graduate. Honours must have an overall average of 70% and an average within the major of 70% to graduate. The following classes are used to calculate the average within the major.

GEOL 224.3, 245.3, 258.3, 282.3, 334.3, 335.3, 481.3, 482.3, 483.3, 485.6, MATH 225.3 or 276.3\*, 226.3, or 238.3\*, PHYS 229.3, 216.3(or EP225.3), EP 225.3, 228.3.

\* Required for honours only

### SOME ADVICE ON ELECTIVES

There are 18 cu of electives that could be used to select senior science classes that would better prepare you for one of the major areas of geophysics, petroleum exploration, mineral exploration, environmental geophysics, or graduate school. Here are some suggestions. Also note that to meet the requirements of professional registration you may need be selective about your electives.

#### PETROLEUM

Geol 463.3 Petroleum geology.

#### MINERAL EXPLORATION

GEOL 226.3 Petrology, GEOL 465.3 Mineral deposits, STAT 241.3 Probability theory, STAT 242.3 Statistical theory and methodology, STAT 245.3 Introduction to statistical methods.

#### ENVIRONMENTAL GEOPHYSICS

CHEM 115.3 General chemistry II, CHEM 375.3 Pollution, waste disposal and environment, GEOE 319.3 Hydrology and hydrogeology, GEOL 413.3 Aqueous geochemistry.

#### GRADUATE SCHOOL

STAT 241.3 Probability theory, STAT 242.3 Statistical theory and methodology, STAT 245.3 Introduction to statistical methods, MATH 211.3 Numerical analysis, MATH 313.3 Numerical analysis II.