McGill

unlike its previoius name *Earth Sciences*

Program/Major or Minor/Concentration Revision Form

(2013)

1.0 Degree Title
Specify the two degrees for concurrent degree programs

Bachelor of Science

1.1 Major (Legacy= Subject) (30-char. max.)

Geology

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

1.3 Minor (with Concentration, if applicable)
(30 char. max.)

1.4 Category

- ☐ Faculty Program (FP)
- ☐ Major
- ☐ Joint Major
- ☐ Major Concentration (CON)
- ☐ Minor
- ☐ Minor Concentration (CON)
- ☐ Honours (HON)
- ☐ Joint Honours Component (HC)
- ☐ Internship/Co-op
- ☐ Thesis (T)
- ☐ Non-Thesis (N)
- ☐ Other

Please specify

1.5 Complete Program Title

B.Sc. Honours in Geology

2.0 Administering Faculty/Unit

Science

Offering Faculty/Department

Earth and Planetary Sciences

3.0 Effective Term of revision or retirement
Please give reasons in 5.0"Rationale" in the case of retirement
(Ex. Sept. 2004 = 200409) ☐ Retirement

Term: 201509

4.0 Existing Credit Weight: 75

Proposed Credit Weight: 75

5.0 Rationale for revised program

The *name change* of the program, known previously as **B.Sc.Honours in Earth Sciences**,. to **B.Sc. Honours in Geology** stresses its relevance to the academic training of professional geologists. The *course EPSC 240 is added* in U1 (fall semester) to give students map reading skills and a first experience of describing rock textures and structures in the field. This provides context for concepts seen in EPSC 233, and better preparation for field-based exercises throughout the Major. *The retirement of EPSC 312* maintains the number of credits equired in U1.

The re-structured lists of required and complementary courses in U2 and U3 make clearer the breadth of academic knowledge required for the professional practice of geology in Canada.

6.0 Revised Program Description (Maximum 150 words)

New Program Revision

The program curriculum is designed to provide a rigorous foundation in the fundamental earth science disciplines and in the advanced subjects relevant to fundamental and applied research in exploration for energy resources or industrial and ore minerals, and in environmental geosciences. The program meets the academic requirements shared by the professional orders for geologists and environmental geoscientists in most Canadian provinces. It is intended to provide an excellent preparation for graduate work in the earth sciences but offers enough flexibility to prepare for a wide range of careers in industry and teaching.

Existing Program Revision

The program curriculum is designed to provide a rigorous foundation in physical sciences and the flexibility to create an individualized program in preparation for careers in industry, teaching, and research. It is intended to provide an excellent preparation for graduate work in the earth sciences. The program is accepted for professional qualification in most Canadian provinces.

Note: Honours students must maintain a CGPA equal to or greater than 3.20

7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)	Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)
U1 Required Courses (24 credits) EPSC 203 Structural Geology (3 credits) EPSC 210 Introductory Mineralogy (3 credits) EPSC 212 Introductory Petrology (3 credits) EPSC 220 Principles of Geochemistry (3 credits) EPSC 231 Field School 1 (3 credits) EPSC 233 Earth & Life History (3 credits) EPSC 312 Spectroscopy of Minerals (3 credits) MATH 222 Calculus 3 (3 credits) U2 and/or U3 Required Courses (33 credits) EPSC 320 Elementary Earth Physics (3 credits) EPSC 340 Earth and Planetary Inference (3 credits) EPSC 350 Tectonics (3 credits) EPSC 355 Sedimentary Geology (3 credits) EPSC 423 Igneous Petrology (3 credits) EPSC 445 Metamorphic Petrology (3 credits) EPSC 452 Mineral Deposits (3 credits) EPSC 480D1 Honours Research Thesis (3 credits) EPSC 480D2 Honours Research Thesis (3 credits) MATH 314 Advanced Calculus (3 credits) MATH 315 Ordinary Differential Equations (3 credits) Complementary Courses (18 credits) 3 credits, one of: EPSC 331 Field School 2 (3 credits) EPSC 341 Field School 3 (3 credits) plus 15 credits (five courses) chosen from the following: EPSC 330 Earthquakes and Earth Structure (3 credits) EPSC 334 Invertebrate Paleontology (3 credits) EPSC 425 Sediments to Sequences (3 credits) EPSC 435 Applied Geophysics (3 credits) EPSC 501 Crystal Chemistry (3 credits) EPSC 510 Geodynamics and Geomagneetism (3 credits) EPSC 519 Isotope Geology (3 credits) EPSC 530 Volcanology (3 credits) EPSC 542 Chemical Oceanography (3 credits) EPSC 547 Modelling Geochemical Processes (3 credits) EPSC 548 Processes of Igneous Petrology (3 credits) EPSC 549 Hydrogeology (3 credits) EPSC 550 Selected Topics 1 (3 credits) EPSC 551 Selected Topics 2 (3 credits) EPSC 552 Selected Topics 3 (3 credits) EPSC 561 Ore-forming Processes (3 credits) EPSC 567 Advanced Volcanology (3 credits) EPSC 570 Cosmochemistry (3 credits) EPSC 580 Aqueous Geochemistry (3 credits) EPSC 590 Applied Geochemistry Seminar (3 credits) Note: Courses at the 300 level or higher in other departments in the Faculties of Science and Engineering may also be used as complementary credits, with the permission of the Director of undergraduate studies.	U1 Required Courses (24 credits) EPSC 203 Structural Geology (3 credits) EPSC 210 Introductory Mineralogy (3 credits) EPSC 212 Introductory Petrology (3 credits) EPSC 220 Principles of Geochemistry (3 credits) EPSC 231 Field School 1 (3 credits) EPSC 233 Earth & Life History (3 credits) EPSC 240 Geology In The Field (3 credits) MATH 222 Calculus 3 (3 credits) U2 and/or U3 Required Courses (18 credits) EPSC 320 Earth Physics (3 credits) EPSC 340 Earth and Planetary Inference (3 credits) EPSC 480D1 Honours Research Thesis (3 credits) EPSC 480D2 Honours Research Thesis (3 credits) MATH 314 Advanced Calculus (3 credits) MATH 315 Ordinary Differential Equations (3 credits) U2 and/or U3 Complementary Courses (33 credits) chosen from the categories below: Advanced earth science: minimum 18 credits (6 courses) EPSC 334 Invertebrate Paleontology (3 credits) EPSC 355 Sedimentary Geology (3 credits) EPSC 423 Igneous Petrology (3 credits) EPSC 425 Sediments to Sequences (3 credits) EPSC 445 Metamorphic Geology (3 credits) EPSC 452 Mineral Deposits (3 credits) EPSC 549 Hydrogeology (3 credits) Field school: minimum 3 credits, one of EPSC 331 Field School 2 (3 credits) EPSC 341 Field School 3 (3 credits) Specialization: maximum 9 credits (3 courses) EPSC 350 Tectonics (winter) EPSC 435 Applied Geophysics (winter) EPSC 501 Crystal Chemistry (3 credits) EPSC 510 Geodynamics and Geomagneetism (3 credits) EPSC 530 Volcanology (3 credits) EPSC 547 Modelling Geochemical Processes (3 credits) EPSC 548 Processes of Igneous Petrology (3 credits) EPSC 550 Selected Topics 1 (3 credits) EPSC 551 Selected Topics 2 (3 credits) EPSC 552 Selected Topics 3 (3 credits) EPSC 567 Advanced Volcanology (3 credits) EPSC 570 Cosmochemistry (3 credits) Applied geochemistry: environmental and ore deposits EPSC 513 Climate and The Carbon Cycle (3 credits) EPSC 519 Isotope Geology (3 credits) EPSC 542 Chemical Oceanography (3 credits) EPSC 561 Ore-Forming Processes (3 credits) EPSC 580 Aqueous Geochemistry (3 credits) EPSC 590 Applied Geochemistry Seminar (3 credits) Courses from other departments may also be used, with permission of the Director of undergraduate studies, when they meet the academic requirements of Canadian professional orders.

Attach extra page(s) as needed

8.0 Consultation with Related Units ☐ Yes ☒ No Financial Consult ☐ Yes ☒ No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department	Alfonso Mucci		November 14, 2014
Curric/Acad Committee			
Faculty 1			
Faculty 2			
Faculty 3			
CGPS			
SCTP			
APC			
Senate			

Submitted by

Name	Jeanne Pquette
Phone	514-398-4402
Email	jeanne.paquette@mcgill.ca
Submission Date	November 17, 2014

To be completed by ARR:

CIP Code

10. FQRSC (Research) Indicator (for GPS): Yes No