



The Association of Professional
Engineers and Geoscientists of Alberta

GEOLOGY & ENVIRONMENTAL GEOSCIENCE

COURSE EQUIVALENTS

2020 Syllabus Edition (Updated September 2025)

University of Alberta		University of Calgary		Mount Royal University	
20-GFUND-1a Elementary Calculus I					
MATH 117	Honours Calculus I	MATH 249	Introductory Calculus	MATH 1200	Calculus for Scientists I
OR		OR			
MATH 144	Calculus for the Physical Sciences I	MATH 265	University Calculus I		
		OR			
		MATH 275	Calculus for Engineers and Scientists		
20-GFUND-1b Elementary Calculus II					
MATH 118	Honours Calculus II	MATH 267	University Calculus II	MATH 2200	Calculus for Scientists II
OR		OR			
MATH 146	Calculus for the Physical Sciences II	MATH 277	Multivariate Calculus for Engs and Scientists		
20-GFUND-2a General Physics I					
PHYS 124	Particles and Waves	PHYS 211	Mechanics	PHYS 1201	Classical Physics I
OR		OR			
PHYS 144	Newtonian Mechanics and Relativity	PHYS 221	Mechanics		
20-GFUND-2b General Physics II					
PHYS 126	Fluids, Fields, Radiation	PHYS 223	Intro to Electromagnetism & Thermal Physics	PHYS 1202	Classical Physics II
OR					
PHYS 146	Fluids and Waves				
20-GFUND-3a General Chemistry I					
CHEM 101	Intro University Chemistry I	CHEM 201	General Chemistry: Structure & Bonding	CHEM 1201	General Chemistry - Structure and Bonding
		OR			
		CHEM 211	Foundations of Chem: Structure & Bonding		
20-GFUND-3b General Chemistry II					
CHEM 102	Intro University Chemistry I	CHEM 203	General Chemistry: Change & Equilibrium	CHEM 1202	General Chemistry: Introduction to Quantitative Chemistry
		OR			
		CHEM 213	Foundations of Chem: Change & Equilibrium		
20-GFUND-4 Differential Equations & Transform Methods					
MATH 201	Differential Equations	MATH 375	Differential Equations for Engineers & Scientists	MATH 2307	Differential Equations I
20-GFUND-5 Linear Algebra and Vector Analysis					
MATH 125	Linear Algebra I	MATH 211	Linear Methods I	MATH 1203	Linear Algebra for Scientists and Engineers
OR		OR			
MATH 127	Honours Linear Algebra I	MATH 213	Linear Algebra I		
20-GFUND-6 Computing Science					
CMPUT 101	Introduction to Computing	CPSC 217	Introduction to Computing Science I	COMP 2001	Computer - Based Problem Solving for the Sciences
OR		OR			
CMPUT 201	Practical Programming Methodology	DATA 211	Programming with Data		

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20-GFUND-7	Thermodynamics				
PHYS 261	Physics of Energy	ENGG 311	Engineering Thermodynamics	PHYS 3601	Thermodynamics
OR		OR		OR	
CHEM 371	Energetics of Chemical Reactions	CHEM 371	Physical Chemistry: Thermodynamics	CHEM 3601	Thermodynamics
20-GFUND-8	Biology				
BIOL 107	Introduction to Cell Biology	BIOL 205	Organization and Diversity of Life	BIOL 1202	Introduction to Cell Biology
OR		OR			
BIOL 108	Introduction to Biological Diversity	BIOL 211	Biomolecules & Cellular Systems	BIOL 1205	The Organization and Diversity of Life
20-GFUND-9	Physical Chemistry				
CHEM 373	Systems	CHEM 373	Physical Chemistry: Quantum Chemistry	CHEM 2601	Introduction to Physical Chemistry
20-GFUND-10	Organic Chemistry				
CHEM 261	Organic Chemistry I	CHEM 351	Organic Chemistry I	CHEM 2101	Organic Chemistry I
		OR		OR	
		CHEM 353	Organic Chemistry II	CHEM 2102	Organic Chemistry II
				OR	
				CHEM 2157	Industrial Organic Chemistry
20-GFUND-11	Inorganic Chemistry				
CHEM 241	Introduction to Inorganic Chemistry	CHEM 431	Inorganic: Group Elements	CHEM 2401	Inorganic Chemistry
OR		OR			
CHEM 333	Inorganic Materials Chemistry	CHEM 433	Inorganic: Transition Metals		
20-GFUND-12	Statistics				
STAT 151	Introduction to Applied Statistics I	STAT 205	Introduction to Statistical Inquiry	MATH 2235	Statistics with Applications in Geology
OR		OR			(can only be used once, for Gfund-12 or GLGY-26)
AUSTA 215 - Statistical Methods for the Natural Sciences		STAT 213	Introduction to Statistics I		
		OR			
		STAT 321	Introduction to Probability		
		OR			
		STAT 327	Statistics for Physical & Environmental Sciences		
20-GLGY-1	Mineralogy & Crystallography				
EAS 224	Mineralogy I	GLGY 313	Mineralogy	GEOL 2103	Minerals and Rocks
		OR			
		ERTH 310	Minerals & Rocks		
20-GLGY-2	Principles of Stratigraphy and Sedimentation				
EAS 222	Stratigraphy and Sedimentation	GLGY 381	Sedimentary Rocks & Processes	GEOL 2109	Stratigraphy and Sedimentation
20-GLGY-3	Igneous Petrology				
EAS 331	Igneous Petrology	GLGY 333	Igneous & Metamorphic Rocks & Processes	GEOL 3103	Igneous Petrology
		OR			
		GLGY 431	Igneous Petrology		
20-GLGY-4	Sedimentary Petrology				
EAS 336	Sedimentary Systems	GLGY 579	Basin Analysis	GEOL 3109	Sedimentary Petrology
20-GLGY-5	Metamorphic Petrology				
EAS 332	Metamorphic Petrology	GLGY 433	Metamorphic Petrology	GEOL 3111	Metamorphic Petrology
20-GLGY-6	Structural Geology				
EAS 233	Geologic Structures	GLGY 343	3D Geologic Structures & Methods	GEOL 2105	Structural Geology
		OR			
		ERTH 340	Rock Deformation & Structure		

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20-GLGY-7	General Geochemistry				
EAS 320	Geochemistry I	GLGY 323	Geochemical Processes	GEOL 3113	Geochemistry
		OR			
		GLGY 403	Aqueous Geochemistry		
20-GLGY-8	Global Geophysics				
GEOPH 210	Structure, Dynamics & Evolution of Earth	GOPH 351	Introduction to Geophysics	No Course Equivalent	
		OR			
		ERTH 360	Global Geophysics & Planetary Geoscience		
20-GLGY-9	Geomorphology				
EAS 225	Earth Surface Processes and Landforms	GLGY 353	Surficial Systems	GEOL 3107	Geomorphology
		OR			
		ERTH 320	Earth Surface Processes & Environments		
20-GLGY-10	Glacial and Quaternary Geology				
EAS 458	Cold Regions Geoscience	No Course Equivalent		No Course Equivalent	
20-GLGY-11	Hydrogeology				
EAS 323	Introduction to Hydrogeology	GLGY 401	Physical Hydrogeology	GEOL 4105	Hydrogeology
		OR			
		ERTH 330	Water & Earth		
20-GLGY-12	Paleontology				
EAS 230	Introduction to Invertebrate Paleontology	GLGY 493	Evolution of Earth through Life and Time	GEOL 2107	Paleontology
OR					
PALEO 414	Paleontology				
20-GLGY-13	Petroleum & Natural Gas				
EAS 364	Basin Resources and Subsurface Methods	GLGY 581	Advanced Petroleum Geology	GEOL 4109	Petroleum Geology
20-GLGY-14	Economic Geology				
No Course Equivalent		No Course Equivalent		No Course Equivalent	
20-GLGY-15	Metallic Mineral Deposits				
EAS 368	Ore Deposits Geology	GLGY 527	Ore Deposits	GEOL 4111	Ore Deposits and Economic Geology
20-GLGY-16	Stratigraphy of Western North America				
No Course Equivalent		No Course Equivalent		GEOL 4107	Geological History of Western Canada
				OR	
				GEOL 4607	Geology of the Canadian Cordillera
20-GLGY-17	Geotectonics & Global Geology				
No Course Equivalent		GLGY 555	Global Tectonics	GEOL 4601	Plate Tectonic Regimes
20-GLGY-18	Exploration Geophysics				
GEOPH 223	Environmental Geophysics	GOPH 355	Exploration & Environmental Geophysics	GEOL 3115	Exploration Geophysics
OR					
GEOPH 224	Geophysics Exploration Techniques				
20-GLGY-19	Optical and Advanced Mineralogy				
EAS 232	Mineralogy II	GLGY 523	Advanced Mineralogy	GEOL 2111	Crystallography and Optical Mineralogy

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20-GLGY-20	Advanced Sedimentology				
EAS 465	Sedimentology	GLGY 463	Siliciclastic Sedimentology	GEOL 4101	Advanced Topics in Sedimentary Geology
		OR		OR	
		GLGY 483	Carbonate Sedimentology	GEOL 4515	Sedimentary Basin Analysis
20-GLGY-21	Advanced Igneous and/or Metamorphic Petrology				
EAS 466	Petrogenesis	No Course Equivalent		GEOL 4103	Advanced Topics in Igneous and Metamorphic Geology
20-GLGY-22	Advanced Geochemistry				
EAS 468	Geochemical Processes	GLGY 602	Advanced Aqueous Geochemistry	No Course Equivalent	
20-GLGY-23	Principles of Geotechnics				
CIV E 381	Soil Mechanics	GLGY 571	Engineering Geology	No Course Equivalent	
OR					
MIN E 323	Rock Mechanics				
20-GLGY-24	Advanced Paleontology				
PALEO 513	Advanced Paleontology	GLGY 587	Invertebrate Paleobiology	No Course Equivalent	
OR					
PALEO 418	Paleobiology of the Vertebrates I				
OR					
PALEO 419	Paleobiology of the Vertebrates II				
20-GLGY-25	Advanced Structural Geology				
EAS 421	Structural Geology & Tectonics	GLGY 445	Structural Geology	No Course Equivalent	
		OR			
		GLGY 541	Advanced Structural Geology		
20-GLGY-26	Geostatistics				
No Course Equivalent		GLGY 597	Geostatistics	MATH 2235	Statistics with Applications in Geology (can only be used once, for Gfund-12 or GLGY-26)
20-GLGY-27	Advanced Hydrogeology				
EAS 425	Contaminant Hydrology	GLGY 505	Contaminant Hydrogeology	No Course Equivalent	
20-GLGY-28	Reservoir Geology				
No Course Equivalent		GLGY 698	Reservoir Characterization	No Course Equivalent	
20-GLGY-29	Advanced Ore Deposits				
No Course Equivalent		No Course Equivalent		No Course Equivalent	
20-GLGY-30	Photogeology and Remote Sensing				
EAS 221	Introduction to GIS & Remote Sensing	GEOG 380	Geospatial Communication	GEOG 1105	Introduction to Mapping, GIS and Remote Sensing
OR		OR		OR	
EAS 451	Digital Remote Sensing	GEOG 484	Remote Sensing Essentials	GEOG 3553	Spatial Analysis and GIS
		OR			
		GEOG 584	Advanced Remote Sensing		
20-GLGY-31	Precambrian Geology				
EAS 432	Precambrian Geology	GLGY 535	Early Earth Evolution	No Course Equivalent	

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