

**Course Requirements and Registration Priorities  
School of Mining and Geosciences, Fall 2023**

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
<b>SMG</b>											
<b>Economics, School of Mining and Geosciences</b>											
1	SMG 200/ECON 220	Resource Economics	3	6	MATH 161 Calculus I (118) (C- and above) OR MATH 162 Calculus II (170) (C- and above)			3 year UG SMG, 4 year UG SMG, 4 year UG SMG (pending graduation)	SEDS, SSH		
<b>Mining Engineering</b>											
2	MINE 301	Mine Surveying and Geographic Information Systems	3	6				3 year UG SMG Mining Engineering	3 year UG SMG, 4 year UG SMG		
3	MINE 302	Geomechanics	3	6				3 year UG SMG Mining Engineering	3 year UG SMG, 4 year UG SMG		
4	MINE 401	Mining Geotechnical Engineering	3	6	MINE 302 Geomechanics (5878) (C- and above)			4 year UG SMG Mining Engineering			
5	MINE 402	Coal Mining	3	6				4 year UG SMG Mining Engineering			
6	MINE 489	Research Project I	3	6				4 year UG SMG Mining Engineering			
7	MINE 501	Foundations of Mining	3	6				1 year Gr SMG Mining Engineering			
8	MINE 502	Geology for Mining Engineers	3	6				1 year Gr SMG Mining Engineering			
9	MINE 503	Applied Geostatistics	3	6				1 year Gr SMG Mining Engineering			
10	MINE 504	Mine Geomechanics	3	6				1 year Gr SMG Mining Engineering			
11	MINE 505	Advanced Mine Ventilation	3	6				1 year Gr SMG Mining Engineering			
12	MINE 602	Mine Maintenance and Services	3	6	MINE 502 Geology for Mining Engineers (3691) (C- and above)			2 year Gr SMG Mining Engineering			
13	MINE 605	Mechanized Excavation and Tunnelling	3	6				2 year Gr SMG Mining Engineering			
14	MINE 607	Geometallurgy	3	6				2 year Gr SMG Mining Engineering			
15	MINE 690	Thesis I	6	12				2 year Gr SMG Mining Engineering			

16	MINE 701	Advanced Mine Geomechanics	4	8				1 year PhD SMG Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
17	MINE 801	Advanced Mechanized Excavation and Tunneling	4	8				1 year PhD SMG Mining Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Computer Science, 1 year PhD SEDS Electrical Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering, 1 year PhD SEDS Science, Engineering and Technology		
18	MINE 803	Advanced Geometallurgy	4	8				1 year PhD SMG Mining Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Computer Science, 1 year PhD SEDS Electrical Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering, 1 year PhD SEDS Science, Engineering and Technology		
19	MINE 890-0	Thesis Research	0	0				4 year Gr SMG (pending graduation), Mining Engineering			
<b>Petroleum Engineering</b>											
20	PETE 201	Fluid Mechanics and Thermodynamics	3	6	MATH 161 Calculus I (118) (D and above) OR CHEM 101 General Chemistry I (113) (D and above)			2 year UG SMG	3 year UG SMG		

21	PETE 301	Numerical Methods for Petroleum Engineers	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above) OR ENG 101 Programming for Engineers (4517) (C- and above)			3 year UG SMG Petroleum Engineering	4 year UG SMG Petroleum Engineering		
22	PETE 302	Reservoir Engineering I with Laboratory works	4	8	PETE 204 Reservoir Rock and Fluid Properties with Lab (5487) (C- and above)			3 year UG SMG Petroleum Engineering, 5 year UG SMG	4 year UG SMG Petroleum Engineering		
23	PETE 303	Well Logging and Formation Evaluation	3	6	GEOL 101 Fundamentals of Geology (4774) (C- and above)			3 year UG SMG Petroleum Engineering	4 year UG SMG Petroleum Engineering		
24	PETE 304	Well Completion and Stimulation	3	6	PETE 203 Drilling Engineering with Laboratories (5486) (C- and above)			3 year UG SMG Petroleum Engineering	4 year UG SMG Petroleum Engineering		
25	PETE 400	Capstone Design Project I	3	6	PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above) AND PETE 203 Drilling Engineering with Laboratories (5486) (C- and above)			4 year UG SMG Petroleum Engineering, 5 year UG SMG			
26	PETE 405	Enhanced Oil Recovery	3	6	PETE 204 Reservoir Rock and Fluid Properties with Lab (5487) (D and above)			4 year UG SMG Petroleum Engineering, 5 year UG SMG			
27	PETE 408	Gas Engineering	3	6	PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above) AND PETE 307 Production Engineering (6146) (C- and above)			4 year UG SMG Petroleum Engineering, 5 year UG SMG			
28	PETE 501	Foundations of Petroleum Engineering	3	6				1 year Gr SMG Petroleum Engineering			
29	PETE 502	Petroleum Geology	3	6				1 year Gr SMG Petroleum Engineering			
30	PETE 503	Fluid Flow Through Porous Media	3	6				1 year Gr SMG Petroleum Engineering			
31	PETE 504	Advanced Formation Evaluation	3	6				1 year Gr SMG Petroleum Engineering			
32	PETE 505	Advanced Drilling Engineering	3	6				1 year Gr SMG Petroleum Engineering			

33	PETE 509	Advanced Well Testing and Evaluation	3	6				2 year Gr SMG (pending graduation), 2 year Gr SMG Petroleum Engineering			
34	PETE 600	Thesis I	6	12				2 year Gr SMG Petroleum Engineering			
35	PETE 601	Petroleum Data Analytics	3	6				2 year Gr SMG Petroleum Engineering			
36	PETE 602	Research Seminar	3	6				2 year Gr SMG Petroleum Engineering			
37	PETE 620	Thesis II	12	24				3 year Gr SMG (pending graduation)			
38	PETE 802	Fluid Flow Through Porous Media	4	8				1 year PhD SMG Petroleum Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Computer Science, 1 year PhD SEDS Electrical Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering, 1 year PhD SEDS Science, Engineering and Technology		
39	PETE 805	Special Topics in Petroleum Engineering: Data Analytics	4	8				1 year PhD SMG Petroleum Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Computer Science, 1 year PhD SEDS Electrical Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering, 1 year PhD SEDS Science, Engineering and Technology		
40	PETE 890	Thesis Research	0	0				1 year PhD SMG Petroleum Engineering, 2 year PhD SMG Petroleum Engineering, 3 year PhD SMG Petroleum Engineering, 4 year Gr SMG (pending graduation), 4 year PhD SMG Petroleum Engineering			

41	GEOL 201	Mineralogy	3	6	GEOL 101 Fundamentals of Geology (4774) (C- and above)			2 year UG SMG Geology	Mining Engineering		
42	GEOL 202	Geologic Maps and Cross-Sections	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			2 year UG SMG Geology	Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG		
43	GEOL 203	Geomorphology	3	6	GEOL 101 Fundamentals of Geology (4774) (C- and above) OR GEOL 102 Fundamentals of Geology (4772) (C- and above)			2 year UG SMG Geology			
44	GEOL 301	Sedimentary petrology	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 202 Geologic Maps and Cross-Sections (5123) (D and above)	GEOL 202 Geologic Maps and Cross-Sections (5123) (D and above)		3 year UG SMG Geology	Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG		
45	GEOL 302	Thermodynamics and Geochemistry	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			3 year UG SMG Geology	Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG		
46	GEOL 303	Structural Geology and Tectonics	3	6	(GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)) AND GEOL 202 Geologic Maps and Cross-Sections (5123) (D and above)			3 year UG SMG Geology	Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG	4 year UG SEDS, 4 year UG SEDS (pending graduation)	
47	GEOL 305	Geology of ore deposits	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above) OR GEOL 201 Mineralogy (5122) (D and above)			3 year UG SMG Geology	Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG	4 year UG SEDS, 4 year UG SEDS (pending graduation)	
48	GEOL 308	Environmental Geochemistry	3	6							

49	GEOL 309	Hydrogeology	3	6				3 year UG SMG Geology	4 year UG SMG Mining Engineering, 4 year UG SMG Petroleum Engineering	4 year UG SEDS, 4 year UG SEDS (pending graduation), 4 year UG SSH, 4 year UG SSH (pending graduation)	
50	GEOL 310	Field Geology 2	3	6	GEOL 303 Structural Geology and Tectonics (5874) (D and above) OR GEOL 301 Igneous and metamorphic petrology (5886) (D and above)			3 year UG SMG Geology, 4 year UG SMG Geology	4 year UG SEDS, 4 year UG SEDS (pending graduation)		
51	GEOL 401	Petroleum Geology and Geochemistry	3	6				4 year UG SMG Geology, 4 year UG SMG Petroleum Engineering, 5 year UG SMG	4 year UG SEDS, 4 year UG SEDS (pending graduation)		
52	GEOL 404	Research Project I	3	6				4 year UG SMG Geology			
53	SMG 100	Introduction to Natural Resources Extraction	3	6				1 year UG SMG	SEDS, SSH		
54	SMG 210	Strength of Materials	3	6				2 year UG SMG	3 year UG SMG		
55	SMG 710	Research Methods and Statistics	3	6				1 year PhD SMG Mining Engineering, 1 year PhD SMG Petroleum Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Computer Science, 1 year PhD SEDS Electrical Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering, 1 year PhD SEDS Science, Engineering and Technology, 1 year PhD SSH Eurasian Studies, 1 year PhD SSH Life Sciences, 1 year PhD SSH Mathematics, 1 year PhD SSH Physics		