

GEOL 5806 - Modular Graduate Course in Exploration Geochemistry

Mineral Exploration Research Centre, Harquail School of Earth Sciences, and Goodman School of Mines

All Lectures and Labs will be delivered live via Zoom

DAY	START	END	TOPIC	SPEAKER
0 Tue 08 Dec 2020 Optional ioGAS Tutorial	0900	1030	Introduction to ioGAS	Michael Lesher (HES/MERC)
	1030	1100	Break	
	1100	1200	Working with ioGAS	Michael Lesher (HES/MERC)
	1200	1300	Break	
	1300	1430	Practical Exercise: Analysis of a Silicate Litho geochemistry Database	Michael Lesher (HES/MERC)
	1430	1530	Break	
1 Wed 09 Dec 2020	1530	1700	Practical Exercise: Analysis of a Sulfide Geochemistry Database	Michael Lesher (HES/MERC)
	0900	1030	Introduction, Analytical methods	Marcus Burnham (Geo Labs)
	1030	1100	Break	
	1100	1230	QCQA (Standards, Reference Materials, Precision/Accuracy, Failure Monitoring)	Jennifer Hargreaves (Geo Labs)
	1230	1330	Break	
	1330	1500	Lab 1 - QAQC	Burnham and Hargreaves (Geo Labs)
2 Thu 10 Dec 2020	1500	1530	Break	
	1530	1700	Lab 1 - QAQC	Burnham and Hargreaves (Geo Labs)
	0900	1030	Geochemical basics	Michael Lesher (HES/MERC)
	1030	1100	Break	
	1100	1230	Geochemical basics	Michael Lesher (HES/MERC)
	1230	1330	Break	
3 Fri 11 Dec 2020	1330	1500	Alteration mass balance	Michael Lesher (HES/MERC)
	1500	1530	Break	
	1530	1700	Lab 2 - Alteration mass balance	Michael Lesher (HES/MERC)
	0900	1030	Stable isotopes	Michael Lesher (HES/MERC)
	1030	1100	Break	
	1100	1230	Lab 3 - Stable isotopes	Michael Lesher (HES/MERC)
4 Sat 12 Dec 2020	1230	1330	Break	
	1330	1500	Radiogenic isotopes	Michael Lesher (HES/MERC)
	1500	1530	Break	
	1530	1700	Lab 4 - Radiogenic isotopes	Michael Lesher (HES/MERC)
	0900	1030	Data processing, major element litho geochemistry	Cliff Stanley (Acadia)
	1030	1100	Break	
5 Sun 13 Dec 2020	1100	1230	Trace element geochemistry	Cliff Stanley (Acadia)
	1230	1330	Break	
	1330	1500	Multi-element normalized diagrams, discrimination plots	Cliff Stanley (Acadia)
	1500	1530	Break	
	1530	1700	Lab 5 - Litho geochemistry	Cliff Stanley (Acadia)
	6 Mon 14 Dec 2020	0900	1030	Basic geostatistics, exploratory data analysis, data transformations
1030		1100	Break	
1100		1230	Closure (major and trace elements), PER/GER analysis, change of basis	Cliff Stanley (Acadia)
1230		1330	Break	
1330		1500	Lab 6 - Pearce element ratio analysis and general element ratio analysis	Cliff Stanley (Acadia)
1500		1530	Break	
7 Tue 15 Dec 2020	1530	1700	Lab 6 - Pearce element ratio analysis and general element ratio analysis	Cliff Stanley (Acadia)
	0900	1030	Till geochemistry & indicator minerals	Beth McClenaghan (GSC)
	1030	1100	Break	
	1100	1230	Transport through cover, stream sediments, and lake sediments	Matt Leybourne (Queen's)
	1230	1330	Break	
	1330	1500	Aqueous geochemistry	James Kidder (Queen's)
8 Wed 16 Dec 2020	1500	1530	Break	
	1530	1700	Lab 7 - Surficial geochemistry	Matt Leybourne and Beth McClenaghan
	0900	1030	Case study: Exploration geochemistry of orogenic Au deposits	Stephane Perrouty (HES/MERC)
	1030	1100	Break	
	1100	1230	Lab 8 - Orogenic Au deposits	Stephane Perrouty (HES/MERC)
	1230	1330	Break	
9 Thu 17 Dec 2020	1330	1500	Case study: Exploration geochemistry of porphyry Cu deposits	Robert Lee (MDRU/UBC)
	1500	1530	Break	
	1530	1700	Lab 9 - Porphyry Cu deposits	Robert Lee (MDRU/UBC)
	0900	1030	Case study: Exploration geochemistry of unconformity U deposits	Steve Beyer (Queen's)
	1030	1100	Break	
	1100	1230	Lab 10 - Uranium	Steve Beyer (Queen's)
10 Fri 18 Dec 2020	1230	1330	Break	
	1330	1530	Case study: Machine learning	John McGaughey (MIRA)
	1530	1600	Break	
	1600	1700	Lab 11: Machine learning	John McGaughey (MIRA)
	0900	1030	Design and implementation of effective geochemical exploration programs	Ross Sherlock (HES/MERC)
	1030	1100	Break	
11 Sat 19 Dec 2020	1100	1230	Gold exploration case histories	Tom Morris (Northern Superior Resources)
	1230	1330	Break	
	1330	1500	Geochemical exploration for VMS deposits	Steve Piercey (Memorial)
	1500	1530	Break	
	1530	1630	Hydrothermal sediment geochemistry/isotopes	Steve Piercey (Memorial)
	1630	1700	New advances in mineral-scale research	Steve Piercey (Memorial)
12 Sun 20 Dec 2020	0900	1030	Diamond exploration geochemistry	Dave Crabtree (Geo Labs) and Bruce Jago
	1030	1100	Break	
	1100	1230	Fertile vs barren kimberlites in the Arctic	Dave Crabtree (Geo Labs) and Bruce Jago