

## Schedule

**GEOL 5606 Exploration for Magmatic Ore Deposits**

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

**Day 1 Sun 08 April 2018**

D1 L1	09:00	10:30	1:30	Classifications, host rocks, tectonic settings, genetic processes	Michael Lesher
	10:30	11:00	0:30	Coffee	
D1 L2	11:00	12:30	1:30	Magmatic systems: Metal partitioning	Pedro Jugo
	12:30	13:30	1:00	Lunch	
D1 L3	13:30	15:00	1:30	Magmatic systems: Partial melting, sulfide and oxide saturation	Pedro Jugo
	15:00	15:30	0:30	Coffee	
D1 L4	15:30	17:00	1:30	Stable isotopes, S/Se ratios, and radiogenic isotopes	Michael Lesher

**Day 2 Mon 09 April 2018**

D2 L1	09:00	10:30	1:30	Mineralogy and phase equilibria in the Fe-Ni-Cu-S-O system	Michael Lesher
	10:30	11:00	0:30	Coffee	
D2 L2	11:00	11:45	0:45	Mineralogy and phase equilibria in the PGE-S-As-Sb-Bi-Te-Se system	Michael Lesher
D2 L3	11:45	12:30	0:45	Mineralogy and phase equilibria in the Cr-Fe-O and Fe-Ti-V-O systems	Michael Lesher
	12:30	13:30	1:00	Lunch	
D2 L4	13:30	15:00	1:30	Multi-component mass balances, R and R' factors in sulfide and oxide systems	Michael Lesher
	15:00	15:30	0:30	Coffee	
Lab 1	15:30	17:00	1:30	R-factor modeling	Michael Lesher

**Day 3 Tues 10 April 2018**

D3 L1	09:00	10:30	1:30	Analytical methods, data recalculation, and plotting	Michael Lesher
	10:30	11:00	0:30	Coffee	
Lab 2	11:00	12:30	1:30	100% sulfide recalculation	Michael Lesher
	12:30	13:30	1:00	Lunch	
D3 L2	13:30	15:00	1:30	Introduction to Ni-Cu-PGE deposits	Michael Lesher
	15:00	15:30	0:30	Coffee	
D3 L3	15:30	17:00	1:30	Sulfide transport mechanisms	Michael Lesher

**Day 4 Wed 11 April 2018**

D4 L1	09:00	10:30	1:30	Sulfide textures	Steve Barnes
	10:30	11:00	0:30	Coffee	
D4 L3	11:00	12:30	1:30	Intrusion geometries and emplacement mechanisms	Steve Barnes
	12:30	13:30	1:00	Lunch	
D4 L4	13:30	15:00	1:30	Time and length scales and genetic models for intrusion-hosted Ni-Cu-PGE	Steve Barnes
	15:00	15:30	0:30	Coffee	
Lab 3	15:30	17:00	1:30	Scaling and sulfide textures	Steve Barnes and Michael Lesher

**Day 5 Thurs 12 April 2018**

D5 L1a	09:00	10:30	1:30	Kambalda Ni-Cu-PGE	Michael Lesher
	10:30	11:00	0:30	Coffee	
D5 L2	11:00	12:30	1:30	Komatiite-Associated Ni-Cu-PGE deposits in Canada (Abitibi, Raglan, Thompson)	Michel Houlé (GSC/MERC)
	12:30	13:30	1:00	Lunch	
D5 L3	13:30	15:00	1:30	Alexo Ni-Cu-(PGE) deposit, Dundonald Township, Ontario	Michel Houlé (GSC/MERC)
	15:00	15:30	0:30	Coffee	
Lab 4	15:30	17:00	1:30	Kambalda, Raglan, Thompson Ni-Cu-PGE ores	Michel Houlé and Michael Lesher

**Day 6 Fri 13 April 2018**

D6 L1	09:00	10:30	1:30	Voisey's Bay Ni-Co-(Cu)-(PGE) deposits	Peter Lightfoot
	10:30	11:00	0:30	Coffee	
Lab 5	11:00	12:30	1:30	Voisey's Bay Ni-Cu-PGE ores	Peter Lightfoot
	12:30	13:30	1:00	Lunch	
D6 L3	13:30	15:00	1:30	Noril'sk Ni-Cu-PGE deposits	Michael Lesher
	15:00	15:30	0:30	Coffee	
Lab 6	15:30	17:00	1:30	Noril'sk Ni-Cu-PGE ores	Michael Lesher

**Day 7 Sat 14 April 2018**

D7 L1	09:00	10:30	1:30	Ni-Cu-PGE and oxide mineralization in the Duluth Complex	Ed Ripley (Indiana U)
	10:30	11:00	0:30	Coffee	
D7 L2	11:00	12:30	1:30	Ni-Cu-PGE mineralization in Alaskan-Uralian Complexes	Ed Ripley (Indiana U)
	12:30	13:30	1:00	Lunch	
Lab 7	13:30	15:00	1:30	Duluth and Duke Island petrography	Ed Ripley (Indiana U)
	15:00	15:30	0:30	Coffee	
D7 L3	15:30	17:00	1:30	Ni-Cu-PGE mineralization in magmatic conduits (including Eagle and Tamarack)	Ed Ripley (Indiana U)

**Day 8 Sun 15 April 2018**

D8 L1	09:00	10:30	1:30	Overview of stratiform PGE deposits: Merensky, UG-2, J-M, and MSZ	Sarah-Jane Barnes (UQAC)
	10:30	11:00	0:30	Coffee	
D8 L2	11:00	12:30	1:30	Models and exploration methods for PGE deposits	Sarah-Jane Barnes (UQAC)
	12:30	13:30	1:00	Lunch	
D8 L3	13:30	15:00	1:30	Other types of PGE-deposits: Platreef and Lac des Iles	Sarah-Jane Barnes (UQAC)
	15:00	15:30	0:30	Coffee	
Lab 8	15:30	17:00	1:30	Bushveld PGE and chromite	Sarah-Jane Barnes (UQAC)

**Day 9 Mon 16 April 2018**

D9 L1	09:00	10:30	1:30	Ni-Cu-PGE Deposits in China: Geology	Michael Lesher and Yiguan Lu
	10:30	11:00	0:30	Coffee	
D9 L2	11:00	12:30	1:30	Ni-Cu-PGE Deposits in China: Geochemistry	Michael Lesher and Yiguan Lu
	12:30	13:30	1:00	Lunch	
D9 L3	13:30	15:00	1:30	Jinchuan Ni-Cu-PGE Deposit	Michael Lesher
	15:00	15:30	0:30	Coffee	
Lab 9	15:30	17:00	1:30	Jinchuan Ni-Cu-PGE ores	Michael Lesher

**Day 10 Tues 17 April 2018**

D10 L1	09:00	10:30	1:30	Introduction to Magmatic Cr and Fe-Ti-V Oxide Deposits	Michael Lesher
	10:30	11:00	0:30	Coffee	
D10 L2	11:00	12:30	1:30	Stratiform Chromite Deposits in the Bushveld and Stillwater Complexes	Michael Lesher
	12:30	13:30	1:00	Lunch	
D10 L3	13:30	15:00	1:30	Chromite Deposits in the Black Thor Igneous Complex	Michael Lesher and Heather Carson
	15:00	15:30	0:30	Coffee	
Lab 10	15:30	17:00	1:30	Black Thor chromite	Michael Lesher

**Day 11 Wed 18 April 2018**

D11 L1a	09:00	09:30	0:30	Geology of the Sudbury Igneous Complex	Paul Gollightly
D11 L1b	09:30	10:00	0:30	Petrography of the Main Mass of the Sudbury Igneous Complex	Ed Pattison and Michael Lesher
D11 L1c	10:00	10:30	0:30	Ni-Cu-PGE Deposits of the Sudbury Igneous Complex	Paul Gollightly
	10:30	11:00	0:30	Coffee	
D11 L2	11:00	12:30	1:30	3D Modeling and the Sudbury Model	Lisa Gibson (Vale)
	12:30	13:30	1:00	Lunch	
D11 L3	13:30	15:00	1:30	Sudbury Mine Exploration	Dave Richardson (Glencore)
	15:00	15:30	0:30	Coffee	
Lab 11	15:30	17:00	1:30	Sudbury Ni-Cu-PGE ores	Michael Lesher

**Day 12 Thurs 19 April 2018**

	09:00	10:30	1:30	Field trip (weather permitting) or Exploration geochemistry	Michael Lesher
	10:30	11:00	0:30	Coffee	
	11:00	12:30	1:30	Field trip (weather permitting) or Exploration geochemistry	Michael Lesher
	12:30	13:30	1:00	Lunch	
	13:30	15:00	1:30	Field trip (weather permitting) or Exploration geochemistry	Michael Lesher