

# GEOL 5606 Exploration for Magmatic Ore Deposits

Mineral Exploration Research Centre - Harquail School of Earth Sciences  
Laurentian University

## Schedule - April 2026

Day	Date	Start	End	Topic	Presenter	
<b>Day 1 Wed 08 Apr 2026</b>						
D1 L0		09:00	09:05	0:05	Course Logistics	Pedro Jugo
D1 L1		09:05	10:30	1:25	Magmatic Ore Deposits: Introduction and classification	Pedro Jugo*
		10:30	11:00	0:30	Break	
D1 L2		11:00	12:30	1:30	Magmatic systems 1: Metal partitioning	Pedro Jugo
		12:30	13:30	1:00	Lunch	
D1 L3		13:30	15:00	1:30	Magmatic systems 2: Partial melting, sulfide and oxide saturation	Pedro Jugo
		15:00	15:30	0:30	Break	
D1 L4		15:30	17:00	1:30	Stable/radiogenic isotopes and S/Se ratios	Pedro Jugo*
<b>Day 2 Thu 09 Apr 2026</b>						
D2 L1		09:00	10:30	1:30	Mineralogy and phase equilibria in the Fe-Ni-Cu-S-O system	Pedro Jugo*
		10:30	11:00	0:30	Break	
D2 L2		11:00	11:45	0:45	Mineralogy and phase equilibria in the PGE-S-As-Sb-Bi-Te-Se system	Pedro Jugo*
D2 L3		11:45	12:30	0:45	Mineralogy and phase equilibria in the Cr-Fe-O and Fe-Ti-V-O systems	Pedro Jugo*
		12:30	13:30	1:00	Lunch	
D2 L4		13:30	15:00	1:30	Sulfide and oxide textures - 100% sulfide recalculation	Pedro Jugo*
		15:00	15:30	0:30	Break	
Lab 1		15:30	17:00	1:30	100% sulfide recalculation	Pedro Jugo
<b>Day 3 Fri 10 Apr 2026</b>						
D3 L1		09:00	10:30	1:30	Host rock petrology	Pedro Jugo*
		10:30	11:00	0:30	Break	
D3 L2		11:00	12:30	1:30	Sulfide and oxide indicator minerals	Pedro Jugo
		12:30	13:30	1:00	Lunch	
D3 L3		13:30	15:00	1:30	Mass balances and exploration implications in sulfide and oxide systems	Pedro Jugo*
		15:00	15:30	0:30	Break	
Lab 2		15:30	17:00	1:30	R-factor modeling	Pedro Jugo
<b>Day 4 Sat 11 Apr 2026</b>						
D4 L1		09:00	10:30	1:30	Models and exploration methods for PGE deposits	Pedro Jugo*
		10:30	11:00	0:30	Break	
D4 L2		11:00	12:30	1:30	Stratiform PGE deposits (Bushveld Igneous Complex)	Pedro Jugo
		12:30	13:30	1:00	Lunch	
D4 L3		13:30	15:00	1:30	Other types of PGE-deposits (including Platreef and Lac des Iles)	Pedro Jugo
		15:00	15:30	0:30	Break	
Lab 3		15:30	17:00	1:30	Bushveld and Stillwater PGE and chromite ores	Pedro Jugo
<b>Day 5 Sun 12 Apr 2026</b>						
D5 L1		09:00	10:30	1:30	Introduction to Cr deposits	Michael Leshar
		10:30	11:00	0:30	Break	
D5 L2		11:00	12:30	1:30	Stratiform chromite deposits in the Bushveld and Stillwater Complexes	Pedro Jugo*
		12:30	13:30	1:00	Lunch	
D5 L3		13:30	15:00	1:30	Conduit-hosted chromite deposits (focussing on Black Thor)	Pedro Jugo*
		15:00	15:30	0:30	Break	
Lab 4		15:30	17:00	1:30	Black Thor chromite ores	Pedro Jugo
<b>Day 6 Mon 13 Apr 2026</b>						
D6 L1		09:00	10:30	1:30	Introduction to Ni-Cu-PGE deposits	Michael Leshar
		10:30	11:00	0:30	Break	
D6 L2		11:00	12:30	1:30	Ni-Cu-PGE deposits in Canada	Michel Houlié
		12:30	13:30	1:00	Lunch	
D6 L3		13:30	15:00	1:30	Sudbury Ni-Cu-PGE deposits	Michael Leshar
		15:00	15:30	0:30	Break	
Lab 5		15:30	17:00	1:30	Sudbury and Ni-Cu-PGE ores	Pedro Jugo
<b>Day 7 Tue 14 Apr 2026</b>						
D7 L1		09:00	10:30	1:30	Thompson Ni-Cu-PGE deposits	Michael Leshar
		10:30	11:00	0:30	Break	
D7 L2		11:00	12:30	1:30	PGE-(Cu)(Ni) mineralization in Alaskan-Uralian Complexes	Dejan Milidragovic
		12:30	13:30	1:00	Lunch	
D7 L3		13:30	15:00	1:30	Raglan Ni-Cu-PGE deposits	Michael Leshar
		15:00	15:30	0:30	Break	
Lab 6		15:30	17:00	1:30	Raglan Ni-Cu-PGE ores	Pedro Jugo
<b>Day 8 Wed 15 Apr 2026</b>						
D8 L1		09:00	10:30	1:30	Serpentinization and awaruite-type deposits	Pedro Jugo
		10:30	11:00	0:30	Break	
D8 L2		11:00	12:30	1:30	Noril'sk Ni-Cu-PGE deposits	Michael Leshar
		12:30	13:30	1:00	Lunch	
D8 L3		13:30	15:00	1:30	Voisey's Bay Ni-Co-(Cu)-(PGE) deposits	Michael Leshar
		15:00	15:30	0:30	Break	
Lab 7		15:30	17:00	1:30	Voisey's Bay Ni-Cu-(PGE) ores	Pedro Jugo
<b>Day 9 Thu 16 Apr 2026</b>						
D9 L1		09:00	10:30	1:30	Ni-Cu-PGE Exploration Targeting - Application of Concepts	Rebecca Sproule
		10:30	11:00	0:30	Break	
D9 L2		11:00	12:30	1:30	Exploration targeting for Ni-Cu-PGE - examples from the deposits along the Circum-superior	Danielle Giovenazzo
		12:30	13:30	1:00	Lunch	
D9 L3		13:30	15:00	1:30	Geophysical exploration for magmatic Ni-Cu-PGE deposits	Alan King
		15:00	15:30	0:30	Break	
D10 L4		15:30	17:00	1:30	Magmatic oddities: kimberlites and carbonatites	Pedro Jugo
<b>Day 10 Fri 17 Apr 2026</b>						
D10 L1		09:00	10:30	1:30	Pegmatites Workshop	
		10:30	11:00	0:30	Introduction to pegmatites	Dan Kontak
		11:00	11:00	0:30	Break	
D10 L2		11:00	12:30	1:30	Pegmatite deposit types/elemental associations	Dan Kontak
		12:30	13:30	1:00	Lunch	
D10 L3		13:30	15:00	1:30	Exploration for pegmatites	Dan Kontak
		15:00	15:30	0:30	Break	
Lab 8		15:30	17:00	1:30	Pegmatites - Lab exercise	Dan Kontak

\*Jugo: based on lecture material authored by Mike Leshar