

Course Schedule
GEOL 5606 Exploration for Magmatic Ore Deposits
 Mineral Exploration Research Centre - Harquail School of Earth Sciences
 Laurentian University

| Day | Date | Start | End | Topic | Presenter |
|-------------------------------|------|-------|-------|--|--|
| Day 1 Tue 19 Apr 2022 | | | | | |
| D1 L1 | | 09:00 | 10:30 | 1:30 Classifications, host rocks, tectonic settings, genetic processes | Michael Leshner |
| | | 10:30 | 11:00 | 0:30 Break | |
| 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 Break | |
| D1 L4 | | 15:30 | 17:00 | 1:30 Stable isotopes, S/Se ratios, and radiogenic isotopes | Michael Leshner |
| Day 2 Wed 20 Apr 2022 | | | | | |
| D2 L1 | | 09:00 | 10:30 | 1:30 Mineralogy and phase equilibria in the Fe-Ni-Cu-S-O system | Michael Leshner (with Andrew McDonald) |
| | | 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 | Michael Leshner (with Andrew McDonald) |
| D2 L3 | | 11:45 | 12:30 | 0:45 Mineralogy and phase equilibria in the Cr-Fe-O and Fe-Ti-V-O systems | Michael Leshner |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| D2 L4 | | 13:30 | 15:00 | 1:30 LA-ICP-MS and oxide indicator minerals | Sarah Dare |
| | | 15:00 | 15:30 | 0:30 Break | |
| D2 L5 | | 15:30 | 17:00 | 1:30 Sulfide indicator minerals | Eduardo Mansur |
| Day 3 Thu 21 Apr 2022 | | | | | |
| D3 L1 | | 09:00 | 10:30 | 1:30 Analytical methods, data recalculation, and plotting | Michael Leshner |
| | | 10:30 | 11:00 | 0:30 Break | |
| Lab 1 | | 11:00 | 12:30 | 1:30 100% sulfide recalculation | Michael Leshner |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| D3 L2 | | 13:30 | 15:00 | 1:30 Mass balances and exploration implications in sulfide and oxide systems | Michael Leshner |
| | | 15:00 | 15:30 | 0:30 Break | |
| Lab 2 | | 15:30 | 17:00 | 1:30 R-factor modeling | Michael Leshner |
| Day 4 Fri 22 Apr 2022 | | | | | |
| D4 L1 | | 09:00 | 10:30 | 1:30 Introduction to magmatic Cr and Fe-Ti-V Oxide deposits | Michael Leshner |
| | | 10:30 | 11:00 | 0:30 Break | |
| D4 L2 | | 11:00 | 12:30 | 1:30 Stratiform Chromite Deposits in the Bushveld and Stillwater Complexes | Michael Leshner |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| D4 L3 | | 13:30 | 15:00 | 1:30 Chromite Deposits in the Black Thor Igneous Complex | Michael Leshner |
| | | 15:00 | 15:30 | 0:30 Break | |
| Lab 3 | | 15:30 | 17:00 | 1:30 Black Thor chromite ores | Michael Leshner |
| Day 5 Sat 23 Apr 2022 | | | | | |
| D5 L1 | | 09:00 | 10:30 | 1:30 Introduction to Ni-Cu-PGE and Ni-Cu-(PGE) deposits | Michael Leshner |
| | | 10:30 | 11:00 | 0:30 Break | |
| D5 L2 | | 11:00 | 12:30 | 1:30 Komatiite-Associated Ni-Cu-PGE deposits in Western Australia | Michael Leshner |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| D5 L3 | | 13:30 | 15:00 | 1:30 Komatiite-Associated Ni-Cu-PGE deposits in Canada | Michel Houlé |
| | | 15:00 | 15:30 | 0:30 Break | |
| Lab 4 | | 15:30 | 17:00 | 1:30 Kambalda, Raglan, and Thompson Ni-Cu-PGE ores | Michael Leshner |
| Day 6 Sun 24 Apr 2022 | | | | | |
| D6 L1 | | 09:00 | 10:30 | 1:30 Noril'sk Ni-Cu-PGE deposits | Michael Leshner |
| | | 10:30 | 11:00 | 0:30 Break | |
| Lab 5 | | 11:00 | 12:30 | 1:30 Noril'sk Ni-Cu-PGE ores | Michael Leshner |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| D6 L2 | | 13:30 | 15:00 | 1:30 Sudbury Ni-Cu-PGE deposits | Michael Leshner |
| | | 15:00 | 15:30 | 0:30 Break | |
| Lab 6 | | 15:30 | 17:00 | 1:30 Sudbury Ni-Cu-PGE ores | Michael Leshner |
| Day 7 Mon 25 Apr 2022 | | | | | |
| D7 L1 | | 09:00 | 10:30 | 1:30 Stratiform PGE deposits (including Bushveld, Stillwater, and Duluth) | Michael Leshner for Sarah-Jane Barnes |
| | | 10:30 | 11:00 | 0:30 Break | |
| D7 L2 | | 11:00 | 12:30 | 1:30 Models and exploration methods for PGE deposits | Michael Leshner for Sarah-Jane Barnes |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| D7 L3 | | 13:30 | 15:00 | 1:30 Other types of PGE-deposits (including Platreef and Lac des Iles) | Michael Leshner for Sarah-Jane Barnes |
| | | 15:00 | 15:30 | 0:30 Break | |
| Lab 7 | | 15:30 | 17:00 | 1:30 Bushveld and Stillwater PGE and chromite ores | Michael Leshner |
| Day 8 Tue 26 Apr 2022 | | | | | |
| D8 L1 | | 09:00 | 09:45 | 0:45 Exploration Geochemistry of Olivine and Pyroxene | Steve Barnes and Louise Schoneveld |
| D8 L2 | | 09:45 | 10:30 | 0:45 Whole-Rock Geochemistry of Cumulate Rocks | Steve Barnes |
| | | 10:30 | 11:00 | 0:30 Break | |
| D8 L3 | | 11:00 | 12:30 | 1:30 Ni-Cu-PGE and oxide mineralization in the Duluth Complex | Michael Leshner for Ed Ripley |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| Lab 8 | | 13:30 | 15:00 | 1:30 Voisey's Bay Ni-Co-(Cu)-(PGE) deposits | Michael Leshner |
| | | 15:00 | 15:30 | 0:30 Break | |
| D8 L4 | | 15:30 | 17:00 | 1:30 Voisey's Bay Ni-Cu-(PGE) ores | Michael Leshner |
| Day 9 Wed 27 Apr 2022 | | | | | |
| D9 L1 | | 09:00 | 10:30 | 1:30 Mafic Intrusion-Hosted Ni-Cu Deposits (including Savannah and Nova) | Steve Barnes |
| | | 10:30 | 11:00 | 0:30 Break | |
| D9 L2 | | 11:00 | 12:30 | 1:30 Ni-Cu-PGE mineralization in Alaskan-Uralian Complexes | Michael Leshner for Ed Ripley |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| D9 L3 | | 13:30 | 15:00 | 1:30 Ni-Cu-PGE mineralization in magmatic conduits (Eagle, Tamarack, and Chinese deposits) | Michael Leshner and Ed Ripley |
| | | 15:00 | 15:30 | 0:30 Break | |
| Lab 9 | | 15:30 | 17:00 | 1:30 Eagle and Tamarack Ni-Cu-PGE ores | Michael Leshner |
| Day 10 Thu 28 Apr 2022 | | | | | |
| D10 L1 | | 09:00 | 10:30 | 1:30 Geophysical exploration for magmatic Ni-Cu-PGE deposits | Alan King |
| | | 10:30 | 11:00 | 0:30 Break | |
| D10 L2 | | 11:00 | 12:30 | 1:30 Exploration for magmatic Ni-Cu-PGE deposits I | TBA |
| | | 12:30 | 13:30 | 1:00 Lunch | |
| D10 L3 | | 13:30 | 15:00 | 1:30 Exploration for magmatic Ni-Cu-PGE deposits II | TBA |
| | | 15:00 | 15:30 | 0:30 Break | |
| D10 L4 | | 15:30 | 17:00 | 1:30 Exploration for magmatic Ni-Cu-PGE deposits III | TBA |