Yukon University

Centre for Northern Innovation in Mining

Continuing Studies

Centre for Northern Innovation in Mining

CNIM update

November 2024

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At a glance

- *Heavy Equipment Technician*
- *Heavy Equipment Rural Operator Training*
- *Class 1, 3 and Air Brakes*
- *Earth Sciences*
- *Environmental Monitoring Certificate*
- *Applied research: Northern Mine Remediation*

CNIM update - August 2024

Heavy Equipment Technician

The 2024-25 HET Pre-apprentice program commenced October 1st with 10 students, of which 3 identify as indigenous. Two of the indigenous students are female citizens of Kwanlin Dün First Nation. The third, from the Mackenzie Delta, regrettably had to withdraw due to housing issues. Two other students are dual credit students from local high schools.

The pre-app students were joined by four Level 1 apprentices on October 15, 3 male & 1 female, none have identified as indigenous. Interestingly, of the 13 remaining students, 10 of them are under the age of 20. They are all progressing satisfactorily with their studies.

Heavy Equipment Rural Operator (H.E.R.O) Training

CNIM began conversations with Selkirk Development Corporation, Selkirk First Nation Mining Department, and Cobalt Construction regarding a collaborative delivery of Heavy Equipment Operator Training at the Minto Mine. Discussions were had about a potential opportunity to complete training in Pelly Crossing in 2025, as well. Little Salmon Carmack's First Nation have also approached CNIM about potential HEO training in the new year.

Class 3, Class 1 and Air Brakes

CNIM staff began collaborating with Dawson City campus to run an Air Brake course and Class 3 courses in late September through the fall. Dawson City instructor, John McDonald, had a cohort of students for the full suite of training, from Air Brake to in-cab. Our logistics staff at CNIM mobilized the commercial driving simulator in Dawson in mid September, where it stayed on campus until mid October. It was then brought back to the Whitehorse campus for further training.

Class 3, Class 1 and Air Brakes cont'd...

Dawson campus had 12 students pass their Class 3 Theory course. A total of 7 students moved onto simulator training, and each completed their nine hours of training.

Whitehorse local commercial driving instructor, Trevor Sinclair is currently assisting John McDonald with training in Dawson. The two instructors are training 7 students in-cab to prepare them for their Class 3 road tests near the end of November.

Whitehorse course successes:

Air Brake: 23 students passed their ABE exams.

Class 3 Theory: 20 students completed their Class 3 written exam.

Class 3 Simulator Training: 13 students completed nine hours of simulator training.

Class 3 In-Cab: 12 students are currently training in-cab in preparation for their road tests.

Class 1 Theory: 2 students have completed their written exams.

Class 1 Simulator Training: 2 students have completed fourteen hours of simulator training.

Class 1 In-Cab Training: 3 of 6 students passed their road tests in October, and the remaining 3 students are in-cab and preparing for upcoming road tests.

Fall courses continue to run smoothly in the Earth Sciences Department. Student retention has been good throughout the semester; there has been no attrition of Earth Sciences majors (15 total).

Fall courses that are currently being offered include:

- Geological Field Methods and Mapping I (GEOL 207); taught by M. Samolczyk (course completed Sept. 01)
- Physical Geology (GEOL 105); taught by Dr. J. Cubley (lecture) and Dr. C. Morgan (lab)
- Mineralogy (GEOL 200); taught by Dr. J. Cubley (lecture) and Dr. C. Morgan (lab)
- Sedimentology and Stratigraphy (GEOL 206); taught by Dr. C. Morgan (lecture and lab)
- Structural Geology (GEOL 208); taught by Dr. J. Cubley (lecture and lab)
- Introduction to Soil Sciences and Resources (RENR/SOIL 210); taught by M. Samolczyk (lecture and lab)

Virtual Geology Project content collection takes place in front of the Lowell Glacier's proglacial lake, in Kluane National Park and Reserve.

Second-year Earth Sciences student, Jakob Miller, proudly displays an ammonoid fossil found in float near Carmacks, Yukon.

Earth Sciences students examine rocks and measure stratigraphic sections of the Ricthofen Formation on the shore of Lake Laberge.

Earth Sciences cont'd...

Faculty continue to conduct research and participate in geoscience outreach activities. Some highlights include:

Earth Sciences faculty member, Dr. Chad Morgan, received funding to purchase three raspberry shake seismometers. These will be deployed throughout Yukon in community campuses and schools and be used to collect seismic data relating to earthquake and mass movement events. This data, in collaboration with the SchoolShake Program, will be used in educational outreach activities, as well as in the lecture and lab assignments in the Earth Sciences program.

Experiential learning continues to be a large focus and strength of our programming. Students have been in the field for eleven different experiential activities since the start of the Fall semester, both close to campus and further afield (Miles Canyon, Whitehorse Copper Belt, Lake Laberge, Ibex Valley, etc.).

Earth Sciences faculty and students will present three posters at the Yukon Geoscience Forum in November. Poster topics include Cambrian trilobite biostratigraphy of the Sekwi Formation in the Mackenzie Mountains, newly-released Virtual Geology Project field experiences, and a summary of results from an ongoing investigation into metal and metal(loid) contamination in the greater Whitehorse area.

Earth Sciences students measuring stratigraphic sections near Carmacks, Yukon.

Structural Geology (GEOL 208) students in the Ibex Valley for fieldwork focusing on the characterization of geologic structures (faults, folds, etc.).

Environmental Monitoring Certificate

The Environmental Monitoring Certificate Program has started a full cohort of 12 new students in October 2024, including students enrolled in partnership with some First Nations Lands and Resources Departments. The first course took place in Dawson City, at the Land of Plenty Camp. The 2023 cohort currently has 4 students on track for graduation in the spring of 2025.

Fall course schedule:

- October 2024 - ENVM090 Intro I, Dawson City
- November 2024 - ENVM091 Environmental Monitoring I, Carcross/Tagish First Nation

Drone footage of students preparing for field work by Darren Bullen

Photo of the aurora at the Land of Plenty Camp taken by student Chase Everritt

Students immersed in their first course of the semester

Research

Northern Mine Remediation

The Northern Mine Remediation course for communities 2024-2025 is presented in Faro. Vladimir Kabanov, NMR instructor, is presenting the NMR course for the community of Faro this year (this course was presented in Mayo and Pelly, last year). This 9-module course will be presented in person and will involve a full Yukon University tour, lab tour, Faro mine tour and many guest speakers.

The NMR team that will be attending Geoscience this week include Dr. Morgane Desmau and two Masters students, Taylor Belansky and Ben Budzey. They will present 3 talks and 1 poster the morning of November 20th.

NMR student successes: Ben Budzey, Masters candidate at University of Saskatchewan and NMR is currently writing his thesis and will graduate in May 2025. Taylor Belansky, Masters candidate, graduated from INRS in May 2024. A peer reviewed paper about her research is being drafted.

Ross River students in the Faro NMR course

Taylor Belansky's graduation ceremony

Student's lab work in Faro

General Updates

- CNIM offered their first 'short course' of the fall. In October, Trevor Sinclair developed and taught a cargo securement course. Students got hands on experience, where they worked together to demonstrate their skills of tie downs and strapping. Students were also taught basic theory based on the national safety code for commercial drivers. All 7 students passed the course.

- CNIM's CanNor funding application was officially approved in October. CNIM staff will be ordering a new simulator that will include training on snow plow, school bus, waste and recycling, fire truck & emergency vehicles along with defensive driving. This is a great opportunity to keep our training local and available to our community members.

- Guillaume Neilsen, IRC in Northern Mine Remediation is currently applying to grants. He is working remotely at 40%. Several peer reviewed papers have been submitted and/or accepted;

- The first peer reviewed paper titled: Metal(loid)s Removal Response to the Seasonal Freeze–Thaw Cycle in Semi-passive Pilot Scale Bioreactors from the NMR research program was accepted in Mine Water & the Environment in August 2024.

- Peer reviewed paper submitted: Paper titled Multi-contaminant removal from synthetic mine-impacted water by permeable reactive barriers under cold conditions was submitted to Journal of Hazardous Materials.

- Master's in Semi-passive water treatment to remove Nitrate from Minto mine.

- NSERC Applied and Research Development submitted in partnership with Newmont, Casino, Snowline and Hecla.

General Updates continued...

- NSERC Alliance will be written in partnership with U of S. This grant application will focus on mine revegetation.
- ArcticNet grant will be written.
- Partnership with Yukon Government is currently under discussion.
- The NMR team will be at the Geoscience Forum in November 2024, where they will present 3 talks and 1 poster.

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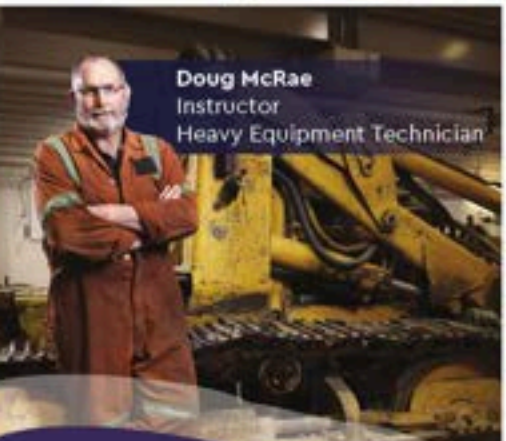

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