Bachelor of Mining Engineering Technology Program
Executive Summary

The Robert M. Buchan Department of Mining at Queen's University and Northern College's Haileybury School of Mines (NCHSM) applied to the Ontario Council on Articulation and Transfer (ONCAT) in 2014 for funding to support the development of a diploma-to-degree pathway in mining engineering. ONCAT funded the proposal with a $1,117,005 grant for course development, and the Faculty of Engineering and Applied Science (FEAS) contributed an additional $1,124,816.15 to support program and curriculum development, as well as program coordination and administration, IT infrastructure, and marketing and recruitment initiatives.

The ONCAT and FEAS funds covered an initial three-year pilot of the program (which was extended by one year), with the FEAS funding then used to bridge the pilot program development phase into the program delivery phase until the program was fully developed.

The BTech program is a diploma-to-degree pathway initially designed for the 2-year Mine Engineering Technician program offered at Northern College, but eventually expanded to include graduates of any Engineering Technology program seeking to upgrade their academic credentials. Graduates who maintained a 75% cumulative average in their college program receive block transfer credit for the first two years of study, and start the BTech program enrolling in a customized bridging curriculum designed to close the knowledge gap between college and university. Upon successful completion of the Bridge, students move directly into Year 3, and then Year 4. Each year also includes an on-site field school, an experiential learning module where students complete a series of laboratories necessary to obtain their degree.

The program includes seven bridge courses, twelve Year 3 courses, twelve Year 4 courses, as well as two Field Schools. Course development was achieved through multi-disciplinary course development teams, which included expertise in educational development and instructional design, multimedia technologies, as well as subject matter expertise. The teams broke the development timeline into four phases, designed to break the development cycle into manageable components, starting with scoping the course and identifying learning outcomes, through content development, and finishing with a quality review. Development timelines typically ranged from 8-12 months, with some outliers taking as long as 24 months to complete. The average cost to develop a course was $43k.

Graduates of the program receive a Bachelor's of Mining Engineering Technology (BTech) degree – which is currently unaccredited. Initial discussions with the Professional Engineer's of Ontario (PEO) have highlighted issues with online programming, and additional discussions will be necessary if a pathway to licensure is to be established. While students cannot apply for licensure upon graduation, they are eligible to apply for Master's studies (either in the Masters of Science, or Masters of Engineering programs). However; the issue of accreditation and licensure remains an on-going risk for the program's long-term success.

The BTech program opened enrollment in January 2016. Since that time, we've had 66 applications, made 57 offers of admission, and currently have 34 students active in the program. While this continues to exceed original enrollment forecasts, identifying strategies to improve our retention rate will be an on-going priority as we move from pilot phase into regular operation. Recruitment efforts are driven by a multi-faceted outreach program that includes both targeted digital promotion, and on-campus recruitment visits. Three formal Articulation and Transfer Agreements have been signed with Northern College, Cambrian College, and Saskatchewan Polytechnic – who all have Mining Engineering Technology programs, as well as over a dozen other Engineering Technology programs that can articulate into the BTech program. As the program grows, we hope to add more partnerships with relevant college programs.