IMII Workforce Development Challenge Program

New Pathways into High Needs Occupations

Saskatchewan is the world's largest producer of potash and second largest of uranium. Our province is home to more than a dozen world-class potash and uranium operations, and several others are under development and planned. These operations employ several thousand people from across our province in high paying and rewarding occupations, and more opportunities will be created with every new operation.

However, like many sectors in Saskatchewan, the minerals industry faces significant challenges in finding the skilled workforce needed to sustain and expand its operations.

To address this, IMII has worked closely with its industry members to better understand these workforce gaps and explore potential solutions. This collaboration has led to a shift in focus toward workforce development, with two key priorities identified:

- Creating new pathways to engage young people outside of the traditional school system in post-secondary education and careers in the minerals industry.
- Developing pathways to help youth complete post-secondary education and fill high-demand occupations in the sector.

Through its Workforce Development Program, IMII is both advancing and seeking proposals and projects that aim to create innovative, flexible programs to meet these needs.

Next Generation Ready Trades Training

IMII-led with member partners

Traditionally, apprenticeships have focused on helping apprentices gain the necessary competencies to become qualified tradespeople through a combination of on- and off-the-job training, typically completed over several years. However, jurisdictions like Austria, Australia, and the United States have developed models to accelerate this process, enabling individuals to become qualified more quickly. Austria uses modular training, Australia's BHP FutureFit program accelerates entry into the minerals industry, and the U.S. focuses on high-needs trades linked to industry and military requirements.

IMII is taking the lead to pilot a new pathway for accelerated trades training, specifically for high-demand roles such as Industrial Mechanics/Millwrights and Heavy-Duty Equipment Technicians. Once proven successful, this model could be extended beyond the minerals industry and to other high-demand trades across the province. Key to the program's success will be reducing the time required to complete apprenticeship programs (Red Seal certification) by integrating both school and work-based learning in a new learning centre.

IMII Workforce Development Challenge Program

The key features of this proposed pilot and program are:

- **Collaborative Industry and Education Partnership**: A group of IMII minerals company members are partnering with Saskatchewan Polytechnic and the Saskatchewan Trades and Apprenticeship Commission to design and certify an integrated curriculum that combines study and work.
- **Apprenticeship Placement**: Participating companies would directly hire apprentices, eliminating the need for apprentices to independently find employers for on-the-job training. This ensures apprentices gain support from and experience with companies committed to their success.
- **Learning Centre Environment**: Apprentices would learn and work in a dedicated "learning centre" that accelerates competency development, rather than focusing solely on earning hours. These centres would be equipped with the latest tools, machinery, and digital technologies relevant to the minerals industry and representative of the full scope of the trade.
- **Competency-Based Learning**: The program would be designed around a competency-driven curriculum, combining practical work experience and technical training to help apprentices complete their apprenticeship and pass the necessary certification exams faster—targeting Red Seal certification in two years, compared to the typical four to five years.
- **Earning While Learning**: Apprentices would receive a salary throughout the program, either from the hiring company or a combination of company and government funding, ensuring financial support while gaining their training.
- **Incorporating Advanced Technologies**: The program would integrate immersive virtual reality (VR) technology alongside hands-on workshop learning to develop the skills required for success in today's evolving minerals industry.

A Powerful Workforce Development Solution

This pilot project offers a tangible opportunity to address the industry's need for skilled tradespeople while creating a new pathway for persons to enter and build careers in the minerals industry. By providing a shortened pathway to certification and employment, the program aims to help ensure the minerals industry has the skilled workforce necessary to sustain current operations and support future growth.

IMII Workforce Development Challenge Program

Entry Level Instrumentation Interns

IMII seeking proposals

As the minerals industry undergoes its digital transformation, the demand for instrumentation, control, and automation technicians is rapidly increasing. These roles have become, and will continue to be, among the most sought-after occupations within the sector.

To meet this demand, employees in these fields need specialized technical training, which is offered through Saskatchewan Polytechnic. The **Instrumentation Engineering Technology** program is a three-year diploma course available at the Moose Jaw campus, combining five semesters of classroom learning with three co-op work terms. Graduates of this program may also be eligible for credit toward apprenticeship training, as **Instrumentation & Control Technicians** are a licensed trade in Saskatchewan, requiring two levels of examination for certification.

However, the minerals industry faces challenges in developing both instrumentation technicians (graduates of 1–2-year programs) and technologists (graduates of 2–3-year programs), despite the growing need for these roles. To address this gap, IMII members have proposed a new pathway that reimagines the traditional route from polytechnic education to employment. This new model starts with hands-on work experience and uses demonstrated aptitude in the workplace as a gateway to post-secondary education, ultimately leading to certification as a technician or technologist.

Proposed Pathway: Work First, Education Second

We are seeking proposals to collaborate with IMII's industry and post-secondary members to create **entry-level positions** (e.g., instrumentation technician interns) that provide practical, on-the-job experience within the minerals industry that introduces candidates to both the industry and the trade. This approach flips the traditional model, where students attend school before entering the workforce, by allowing individuals to begin their careers on-site, gaining real-world experience from the outset.

Key elements of the proposal include:

- **On-Site Training & Employment**: New employees would start by gaining practical experience and training directly in the field, with mentorship and guidance from industry professionals. This on-the-job training would be supplemented by academic coursework through post-secondary institutions, ensuring that the training contributes directly to success in the polytechnic program.
- **Partnerships with Post-Secondary Institutions**: IMII will work with post-secondary partners to align on-site training with the required competencies for future enrollment in the polytechnic program. This ensures that skills gained on-site are recognized and can be credited toward the formal program.
- **Support from Industry Partners**: Employers would not only provide the on-site experience but also support the interns in their educational journey. This could include offering additional resources such as academic, personal, and family support, fostering a more holistic approach to training compared to the current model, which primarily relies on training in urban settings like Saskatoon or Moose Jaw.

- **Workplace-Driven Path to Education**: Rather than requiring workers to relocate for education, this model enables people to start in rural, remote, or reserve areas, with training delivered locally whenever possible. This "right-side up" approach can help attract and retain individuals who may not otherwise have access to post-secondary education opportunities.

Proposals should offer a flexible and innovative solution to addressing the growing need for instrumentation technicians and technologists in Saskatchewan's minerals industry. By combining on-the-job experience with targeted academic training, this pathway could create a direct route to certification while helping to build a more diverse, skilled workforce. The model also offers the added benefit of supporting workers in rural, remote, and Indigenous communities by bringing training to where they live and work, rather than requiring relocation.

Mining-Like Engineers

IMII seeking proposals

While Saskatchewan does not have a standalone mining engineering program, the University of Saskatchewan offers mining engineering options (MEOs) within chemical, geological, and mechanical engineering through its College of Engineering. These four-year programs provide a strong foundation for mining careers. Additionally, Saskatchewan Polytechnic's Mining Engineering Technology (MET) program offers a two-year applied curriculum, which at present can be laddered into university programs outside the province. Although these pathways do not directly lead to certification as mining engineers, they create opportunities for developing recognized qualifications in the industry.

Moving forward, IMII has identified three potential new pathways:

- First, a transfer agreement between Saskatchewan Polytechnic and the University of Saskatchewan. IMII supports the "two-plus-two" model in discussion between Saskatchewan Polytechnic and the University of Saskatchewan as such an agreement would allow MET graduates to complete a degree in just two additional years, instead of the typical three or four years, as a distinct pathway for students to engineering careers in the minerals industry.
- Second, an offering of core MEO or courses to students in related engineering fields (e.g., civil, environmental) or to practicing engineers, similar to Queen's University's Certificate in Mining Technologies.
- Third, having science students from relevant fields with crossover potential (e.g., geology, chemistry) take core MEO or other courses to enhance their skills for the mining sector, with ongoing learning opportunities.

Proposals in these latter two areas will need to:

- Involve professional licensing bodies—whether for engineering education or individual certification—to create a tailored "Made in Saskatchewan" pathway.
- Be designed in collaboration with industry to equip undergraduate students in science and engineering and working professionals with the skills and knowledge needed to pursue career advancement in the rapidly transforming mining industry.

IMII Workforce Development Challenge Program

Further, IMII remains interested in proposals that address the shortage of qualified mining engineers. These could include:

- Authentic assessments of foreign credentials for New Canadians, expediting their ability to work in Saskatchewan's mining industry.
- Pre-recognition of foreign mining engineering degrees as equivalent to Canadian qualifications.

Looking to the future, with global demand for minerals—particularly critical minerals like potash and uranium—rising due to trends such as decarbonization, electrification, urbanization and population growth, IMII is also open to exploring innovative degree pathways:

- Degree apprenticeships in mining engineering (which could be modeled after York University's program in electrical engineering or UK degree apprenticeships).
- Work-based mining engineering degrees (inspired by UK models).

The UK's experience with these pathways suggests they can increase participation from underrepresented groups, offering education and employment opportunities for a more diverse workforce.

Proposals in these areas could come from other universities with established mining engineering programs in partnership with an accredited Saskatchewan post-secondary institution.