

# ***Mining Engineering Options Launches***

## **Career Opportunities for Students**

In the early history of IMII, discussions were held on the importance of re-establishing mining engineering at the University of Saskatchewan (USask) to support one of the province's most significant industries. These discussions led to the signing of an agreement with the College of Engineering in June 2013 to develop and implement the Mining Engineering Options program.

The Options program provides specialized training in three undergraduate disciplines, Geological Engineering, Mechanical Engineering and Chemical Engineering. Students graduate with a foundational knowledge of mining operations and/or mineral processing, better equipping them for careers in the mining sector.

Four new positions were created in order to deliver the mining options in the College. The salary and start-up costs associated with these positions accounted for approximately 80% of the project cost (\$1,702,800). Three tenure-track faculty members were hired, one dedicated to each of the Options:

- Dr. Shafiq Alam, Minerals Processing Option: Dr. Alam teaches and does research in the areas of hydrometallurgy and mineral processing.
- Dr. Travis Wiens, Mechanical Mining Option: Dr. Wiens specializes in the areas of fluid power (hydraulics), acoustic sensing and dynamic modelling, and related applications in the mining industry
- Dr. Paul Hughes, Geological Mining Option: After several years of experience as a mining engineer, Dr. Hughes joined the Department of Civil, Geological and Environmental Engineering as an Assistant Professor in January 2015 to lead the Geological Mining Option. Dr. Hughes has since left the University to pursue other opportunities.

Donna Beneteau (M.Sc., P.Eng.) was hired in September 2015 as a Departmental Assistant, Mining in the Department of Civil, Geological and Environmental Engineering to teach GEOE 430 (Drill Blast and Excavate) as well as supervise student groups with design projects relating to mining and geological engineering. In 2020 she was appointed as an Assistant Professor and teaches undergraduate students in 2nd through 4th year engineering and supervises the Rock Mechanics Laboratory.

From 2010-2015, industry-based sessional lecturers were also hired to teach three of the courses as well as to develop course materials.

One deliverable identified was the definition of transfer articulation paths for graduates of Saskatchewan Polytechnic technical programs into College of Engineering programs with a mining option. In August 2019, the institutions signed an agreement that enables graduates of the Sask Polytech Mining Engineering Technology diploma program to transfer into the Bachelor of Science in Engineering – Geological Engineering program at USask. This means students can graduate with both a Sask Polytech diploma and a USask degree after only five years of study. This partnership is a one-year pilot that will benefit students pursuing a mining career in Saskatchewan. It equips mining engineering students with flexible education options and provides employers with skilled employees ready to support the province's mining industry.

Course descriptions are available online through the University of Saskatchewan Course and Program Catalogue <https://programs.usask.ca/engineering/index.php>.

# Student Statistics

For the academic years 2014-2015 through to 2018-2019, enrollment in the three Options is summarized for all students in Table 1, female students in Table 2, and the number of students that have successfully completed the Options in Table 3. As diversity & inclusion matters to the minerals industry's workforce, Table 3 also provides the number of female and self-declared Indigenous students that have completed a Mining Option as part of their degree.

Table 1: Option enrollment by year and program.

Year	Program												Total
	Chemical				Geological				Mechanical				
	Yr 2	Yr 3	Yr 4	All	Yr 2	Yr 3	Yr 4	All	Yr 2	Yr 3	Yr 4	All	
2014-2015	2			2									2
2015-2016	3	6	2	11	2	4	2	8	2	5	4	11	30
2016-2017	4	7	7	18	4	13	14	31	5	6	5	16	65
2017-2018	1	6	13	20		11	16	27	2	8	3	13	60
2018-2019		1	14	15	4	11	8	23	1	5	7	13	51

Table 2: Female Option enrollment by year and program.

Year	Program			
	Chemical	Geological	Mechanical	Total
2015-2016	1	2	0	3
2016-2017	4	4	0	8
2017-2018	7	5	0	12
2018-2019	6	6	0	12

Table 3: Option convocation statistics by year and category (total, female and Indigenous)

Year	PROGRAM									Total
	Chemical			Geological			Mechanical			
	Total	Female	Indig.	Total	Female	Indig.	Total	Female	Indig.	
2016	1	0	0	2	0	0	3	0	0	6
2017	2	0	0	10	1	1	2	0	0	14
2018	6	1	0	15	4	2	0	0	0	21
<b>Total</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>27</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>41</b>

57% of graduates were employed by the minerals industry and its services & supply sector.

**PROJECT INFORMATION:**

**Project Duration:** June 2013 to March 2019

**Project Cost:** \$2,089,847

IMII Contribution: \$1,636,479

U of S Contribution: \$453,368