



## **Cyclical Program Review Final Assessment Report and Implementation Plan for the Academic Programs Offered by the Department of Mining Engineering**

**Programs Reviewed:**      **BScE; MASc; MEng; PhD**  
   **BTech Mining Engineering Technology**  
   **Graduate Diploma in Community Relations for the**  
   **Extractive Industries**

In accordance with Queen's University Quality Assurance Processes (QUQAP), this final assessment report provides a synthesis of the external evaluation, internal responses and assessment of the above programs. This report identifies the significant strengths of the programs, and opportunities for program improvement. It sets out and prioritizes the recommendations that have been selected for implementation.

An implementation plan is attached that identifies:

- who will be responsible for acting on and monitoring progress on the recommendations,
- any resource or governance implications resulting from the recommendations, and
- timelines for implementation of the recommendations.

### **Summary of Review**

- 1) The department's self-study was reviewed by the Dean, Faculty of Engineering and Applied Science, Vice-Provost and Dean, School of Graduate Studies and Vice-Provost (Teaching and Learning). It was approved on 2 March 2018.
- 2) The review team visit took place on 9<sup>th</sup> – 10<sup>th</sup> April 2018. The review team members were:
  - i. Dr. Ferri Hassami, Department of Mining and Materials Engineering, McGill University
  - ii. Dr. Malcolm Scoble, Norman B. Keevil Institute of Mining Engineering, University of British Columbia
  - iii. Dr. Brian Surgenor, Department of Mechanical and Materials Engineering, Queen's University
- 3) The visit included a tour of facilities and meetings with
  - i. Students (undergraduate and graduate)
  - ii. Faculty
  - iii. Librarian
  - iv. Staff
  - v. Department Head
  - vi. Dean and Associate Deans, Faculty of Engineering and Applied Science

- vii. Vice-Provost and Dean and Associate Dean, School of Graduate Studies
  - viii. Deputy Provost
- 4) The review team reported on 13 May 2018. Responses to the review team report were provided by the Department Head, Dean, Faculty of Engineering and Applied Science and Vice-Provost and Dean, School of Graduate Studies.
  - 5) The Senate Cyclical Program Review Committee considered all the documentation at its meeting on 10 September 2018, and reported to the Provost on the programs' strengths, opportunities for enhancement and recommendations for improvement.

**The following strengths were noted:**

- Strong program with state-of-the-art facilities
- Excellent matrix of academic qualities (research) and practical application (experiential learning, collaboration with industry)
- Effectively leverages the use of online tools to promote the department and attract new talent
- Positive learning environment for students with special attention paid to health and wellness concerns
- Cohesive department that is forward-looking and excited for the future

**The following opportunities for enhancement were noted:**

- Promote the department and the mining sector to prospective students with an eye to achieving consistent enrollment
- Address the department's equity goals and diversify both the student body and the faculty complement including hiring women faculty
- Faculty renewal plan to strategically address upcoming retirements and to increase research output
- Enhance investments in international connections
- Curriculum review of all undergraduate courses that takes into account student concerns and best practices for student assessment

The academic programs in the Robert M. Buchan Department of Mining, Faculty of Engineering and Applied Science have been approved to continue.

Date of next review:

2025-2026

Prepared by Vice-Provost (Teaching and Learning)

30 September 2018



## Implementation Plan

Recommendations	Proposed Follow-up	Responsibility for Leading Follow-up	Resource or Governance Implications	Timeline for Addressing Recommendation
<p>1. The Reviewers recommend that the unit increase the mining engineering presence in 1<sup>st</sup> year engineering. In particular, co-teach APSC 151 with the Geology department. Also, the unit acknowledges that APSC 151 was recently split into “biology” and “geology” modules, but also noted that the biology module is being taught by geology.</p>	<p>Review course content of APSC 151</p>	<p>Department Head</p>	<p>Human resources to be provided by department</p>	<p>By February 2019</p>
<p>2. Reviewers recommend the unit increase the undergraduate enrolment.</p>	<p>Implement a strategic plan to revitalize the curriculum. Consult with</p>	<p>Department Head</p>	<p>Human resources to be provided by department</p>	<p>Revitalizing the curriculum by the end of 2018-2019 academic</p>

<b>Recommendations</b>	<b>Proposed Follow-up</b>	<b>Responsibility for Leading Follow-up</b>	<b>Resource or Governance Implications</b>	<b>Timeline for Addressing Recommendation</b>
This includes: 1) targeting 35 to 40 students in 2nd year, 2) increasing presence in 1st year (see recommendation #1 above), 3) updating and revitalizing the curriculum.	<p>the Centre for Teaching and Learning.</p> <p>In order to introduce mining to first-year students, continue to supervise APSC 100 projects and teach part of APSC 151</p>			year. Mentoring first-year students ongoing
3. Reviewers recommend that the unit increase postgraduate enrolment, targeting 50 students by: 1) hiring new faculty which will therefore increase postgraduate course offerings. Faculty should talk about their research in undergraduate lectures. 2) Encourage cross appointments with GEO/CHEM/ECE/MECH to increase applicant pool. 3)	<p>In order to increase the research profile of the department continue cross-appointments with new faculty hires.</p> <p>In conjunction with the Dean's Office, explore opportunities to increase linkages with industry and the private sector.</p>	Department Head and Associate Dean FEAS	Human resources to be provided by department and faculty office	Ongoing

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Acknowledge that students reluctant to enroll in mining, would rather stay in their home department.	Formally recognize supervisors supporting students			
4. Reviewers recommend that the unit increase cooperation with the Department of Geology at the undergraduate level.	Initiate discussions between the two units. Foster positive relations between the two departments	Department Head	Human resources provided by department	Ongoing
5. Reviewers recommend that the unit consider student feedback on the undergraduate curriculum. This includes having more labs, discouraging 70% final exams, having a design course in 3 <sup>rd</sup> year, expanding and/or reducing some courses, and having only one capstone course instead of two.	Continue curriculum review of all undergraduate courses under the guidance of the Centre for Teaching and Learning	Department Head	Human resources provide by department and CTL	By October 2019

Recommendations	Proposed Follow-up	Responsibility for Leading Follow-up	Resource or Governance Implications	Timeline for Addressing Recommendation
<p>6. Reviewers recommend that the unit continue to work on the “Towards a Strategic Plan” initiative. Although all faculty support change, it is a worthwhile target to consider a new undergraduate curriculum in 2020/2021 (with a submission due Oct 2019).</p>	<p>Finalize “Towards a Strategic Plan” initiative</p>	<p>Department Head</p>	<p>Human resources provided by department</p>	<p>By October 2018</p>
<p>7. Reviewers recommend that the unit take actions to maintain a high female/male undergraduate student ratio. To do so, the unit could: 1) promote hydrometallurgy as “chemical” 2) hire a female faculty member.</p>	<p>Continue to work with the Equity Office on establishing best practices that will attract more female faculty to the department and assist with reaching equity goals</p>	<p>Department Head, hiring committees and equity office</p>	<p>Human resources provided by department and equity office</p>	<p>Ongoing</p>
<p>Part 1 of the recommendation is not supported by the Provost and Vice-Principal (Academic).</p>				
<p>8. Reviewers recommend that the unit resurrect GCCR</p>	<p>Proceed with tuition reduction request.</p>	<p>Department Head</p>	<p>Human resources provided by department</p>	<p>By May 2019</p>

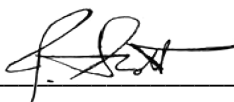
<b>Recommendations</b>	<b>Proposed Follow-up</b>	<b>Responsibility for Leading Follow-up</b>	<b>Resource or Governance Implications</b>	<b>Timeline for Addressing Recommendation</b>
(i.e. social performance management in the extractive industries) by: 1) reducing tuition per course, 2) improving online content to that seen with BTech, and 3) making elements available to the undergraduates (social responsibility, community relations).	Improve the content of the graduate diploma by implementing best practices from the BTech program. Extend some academic content to undergraduates			
9. Reviewers recommend that the unit avoid presenting mining as a “terminal” degree and promote it as one of ten excellent Queen’s engineering programs, but one that offers an incredible experience and exposure to a high-tech field.	Introduce a combined BSc/MSc program. Raise awareness of graduate degree options by inviting high-profile speakers from industry and research organizations to present their research. Strategically increase the faculty complement	Department Head	Human resources provided by department	Ongoing

The Dean, Faculty of Engineering and Applied Science shall be responsible for monitoring the implementation plan. The details of progress made will be presented in writing to the Provost and Vice-Provost (Teaching and Learning) and filed in the Office of the Provost and Vice-Principal (Academic). Monitoring reports will be posted on the university web site.


Final Assessment Report & Implementation Plan

Approval Date – 30 September 2018

Vice-Provost (Teaching and Learning)

  
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Signature

Vice-Provost and Dean, School of Graduate Studies

  
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Signature

Dean, Faculty of Engineering and Applied Science

  
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Signature

Final status of academic programs in the  
Robert M. Buchan Department of Mining Engineering

Approved to Continue

Date of next program review

2025-2026 Academic Year