

Department/Academic Unit: The Robert M. Buchan Department of Mining

Degree Program: M.A.Sc.

Degree Level Expectations, Learning Outcomes, Indicators of Achievement and the Program Requirements that Support the Learning Outcomes

Expectations (general descriptors from OCAV)	Learning Outcomes (program specific)** This degree is awarded to students who demonstrate...	Indicators of Achievement As evidenced by...	Relevant Courses and academic requirements (requirements that contribute to the achievement of learning outcomes and degree expectations)
Depth and breadth of knowledge	A broad understanding and enhancement of knowledge of mining science in a variety of fields that are pertinent to the student's academic fields of interest. In these fields, students will acquire an awareness of current operational procedures, analytical techniques and constraints existing in their areas of professional practice	Achievement of satisfactory academic performance through classroom submissions and examination output in a limited series of academic course offerings that focus on the student's principal area of research focus. Performance goals are focussed on benefits of dissemination of information using innovative problem solving techniques that can be creatively applied and effectively communicated to academic colleagues and supervisors alike.	Courses for this degree level are expected to have a specific focus on a range of mining engineering topics that are germane to the student's research goals, and which may therefore assist in achieving and complementing research direction. In the current program listings, participants are recommended to take specific courses having topical academic content appropriate to his/her research program.
Research and scholarship	Conceptual understanding that: <ul style="list-style-type: none"> Provides a concentration on topics of professional techniques, academic research and industry developments that combine to create specific discipline knowledge; 	Adequacy in meeting timeline commitments for course-based assignments in all forms, and provide evidence of competence in ability to plan and efficiently manage research project or assignment submissions;	All graduate level courses offered by this Department, as well as a limited number of 400-level senior undergraduate courses, and graduate level courses from other disciplines, are acceptable for M.A.Sc. program delivery.

	<ul style="list-style-type: none"> • Enables an evaluation of current scholarship in the fields of study of primary interest to and focus on a candidate's research effort and; responsible conduct of research; and • Enables up-to-date source information gathering, compilation and dissemination of written and/or oral information 	Demonstration of a capacity to provide high levels of accomplishment for academic tasks and reporting through regular and effective communication with academic advisors.	The current academic offerings provide comprehensive training in all principal fields of discipline-related engineering, including mining (surface and underground), mineral processing and mine-mechanical fields that are considered to be principal attributes for professional and academic development in mining engineering.
Application of Knowledge	Competence in the academic process by subjecting an existing body of knowledge to critical analysis	Achievement of proficiency and efficiency in the planning and distribution of scientific knowledge for discipline specific assignments. Candidates must demonstrate the ability to adhere to strict time requirements in assigned tasks within courses, to achieve research milestone goals, to show evidence of contingency planning capability and to demonstrate regular and effective communication with faculty and peers.	<p>Academic offerings provided by the Mining Department provide strong overlap with related disciplines such as Geological, Civil, Mechanical and Chemical Engineering.</p> <p>The program encourages students in the M.A.Sc. program to participate in academic courses within other such units, and to both consolidate and effectively participate with other academic units as time and timetabling permit. Research knowledge obtained is shared with others by way of MINE897.</p>
Professional capacity/autonomy	Intellectual qualities and transferable skills necessary for enhanced employment training in the mining industry or related	Ability to meet all academic deadlines in timely and proactive fashion by being punctual in all aspects and demonstrating willingness to meet timelines set	The combination of a wide variety of academic course offerings, access to highly skilled and trained professional engineering staff and capability

	<p>mineral industry fields, and which can assist in demonstrating:</p> <ul style="list-style-type: none"> • the exercise of initiative, leadership responsibility and effective communication skills • the ability to exercise effective decision-making • professional development progression • training in matters of ethical behaviour and academic integrity using guidelines and procedures also appropriate for responsible conduct of research; and • an appreciation of the broader implications of applying mining engineering knowledge to the scientific and social aspects of this discipline 	<p>-Effectively seek additional meetings with academic and/or technical staff to develop organizational or task goals, particularly for research activities</p> <p>-Capability to provide reasoned analyses of societal and ecological factors, with risks mitigated where possible; strong focus and inclusion of discipline-related information in achieving project-related goals</p>	<p>of graduate programs to overlap between related disciplines offers considerable opportunity for students to excel in their academic pursuits</p>
<p>Communication Skills</p>	<p>The ability to communicate ideas, issues and conclusions clearly</p>	<ul style="list-style-type: none"> • Highly motivated preparation endeavour to be displayed as well as evidence of effective skill at organizing assignment and course deliverables, including strong evidence of pre-planning activity • Excellent oral delivery capability to be shown for in- 	<p>All academic courses, including the mandatory Seminar delivery course (MINE 897) and other planned research presentation efforts, promote development of strong communication skills in oral and written/computer media</p>

		class activities (through seminar discussions or planned presentations); effective use made of figures, graphs and illustrations to enhance written presentations.	
Awareness of limits of knowledge	Recognition of the complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines	<ul style="list-style-type: none"> • Ability to make effective use of information gathered from others and making full and concise attributions to the contributions of others • Recognition of missing or unidentified information and apparent gaps in information databases • Capacity to seek the assistance of others in the same field or to seek information sources beyond the current scope of discipline knowledge 	M.A.Sc. students will undertake learning of current and possibly new research skills but no new, innovative research. Further study at a Ph.D. level is necessary to provide detailed topic awareness.
Add program specific degree expectation*	The learning outcomes of the M.A.Sc. program of study in Mining are similar to those of most other engineering disciplines at Queen's University, and based largely on academic course instruction in a minimum inventory of courses as set by this Department (4).	One program specific requirement is that all M.A.Sc. students registered full-time and resident on campus must participate in and present oral contributions annually to fulfill and enhance their communication skill set.	MINE 897 (Seminar) is mandatory for all M.A.Sc. students.