MOUNT ROYAL UNIVERSITY

FACULTY OF SCIENCE AND TECHNOLOGY

COMMITMENT PLAN

Mount Royal University is situated on an ancient and storied land steeped in ceremony and history that, until recently, was occupied exclusively by people indigenous to this place. With gratitude and reciprocity, Mount Royal acknowledges the relationships to the land and all beings, and the songs, stories and teachings of the Siksika Nation, the Piikani Nation, the Kainai Nation, the Îethka Stoney Nakoda Nation (consisting of the Chiniki, Bearspaw and Goodstoney Nations), the people of the Tsuut'ina Nation, and the Métis.

The Mount Royal University Integrated Strategic Plan and Academic Plan

The University's Integrated Strategic Plan 2023-2030 *Opening Minds and Changing Lives* lays out the directions and priorities for Mount Royal; the Academic Plan 2023-2030 *Connect. Inspire. Transform.* aligns with the academic goals set out in the strategic plan.

Vision

Opening Minds and Changing Lives reflects our dedication to providing students with a holistic and transformative education, preparing them to become lifelong learners and active global citizens. Through their academic experiences and as members of a diverse, inclusive, and supportive community, students will be equipped with the knowledge and skills they need to develop to their full potential.

Mission

To provide meaningful and engaged learning opportunities that create individual transformation and societal benefit. We recognize that every learner who comes to Mount Royal has their own aspirations for pursuing a university education. Knowing their reasons for attending university are as unique as they are, we strive to provide all students with enriching learning opportunities that help them discover and cultivate the knowledge and skills they need to succeed and make a lasting impact on today's changing world.

Science & Technology Core Motivations

It is essential that the Faculty of Science & Technology continues to sustainably grow, evolve, shape, and reshape itself. The popularity of our degrees has both created and reflects demand for STEM programming. We remain adaptable, change-oriented, and resilient, emphasizing a perspective for the Faculty that is situated in the future, and which encompasses the following broad priorities:

i. Maintain and develop distinctive programming in the sciences that is current, relevant, a first choice for students, and which has excellent outcomes for graduates.
ii. Support continued growth and evolution in scholarship, and undergraduate training initiatives across the sciences.
iii. Further develop the physical infrastructure and resources necessary for excellence in undergraduate teaching and learning, and in scholarship.
iv. Continue to build a robust, durable, diverse, inclusive, and thriving community of employees focused on excellence.

Science & Technology Commitment Plan 2024-2030

Integration of the University's strategic priorities, the Academic Plan objectives, and the goals of Science & Technology is essential. The primary function of this Commitment Plan is to connect Science & Technology's goals with those of the University, uniting the Faculty around a common action and purpose.

We subscribe to an approach which prioritizes continuous planning, an openness to new ideas, and expanding our frame of reference. This Commitment Plan is a living document that will be reviewed annually and revised to align with the University's priorities as they evolve over time, or as our path to achieve them alters as the context changes over the coming years. Any amendments will be submitted to Faculty Council for discussion and/or approval.

To better understand the extent to which Science & Technology is achieving its goals, the Faculty Commitment Plan contains a range of measurable outcomes. These performance measures will allow the Faculty to objectively monitor how each of the stated commitments is being met over time, as well as help inform review and any revisions of the Plan. A detailed performance measures document, prepared to support this Plan, can be found here.

Commitment 1: Programs and Enrollment

STRATEGIC PLAN PRIORITY	ACADEMIC PLAN PRIORITY	FACULTY COMMITMENT
Mount Royal has achieved sustainable enrollment growth to meet demand and maintained its delivery of a high-quality education.	Sustainably grow enrolment (10% by 2030), programming, and pathways to respond to projected demand for high-quality post-secondary education.	We commit to offering a wider range of credentials and opportunities to specialize within those credentials. We commit to finding productive ways to work across Academic Units and Faculties in developing new programs. We commit to better meeting student demand for our programming and, in doing so, contributing to a greater percentage of the University's total FLE. We commit to achieving all this without sacrificing the high-quality teaching and learning experience that represents our greatest strength.

MEASURABLE OUTCOMES	ACTION PLAN
• An increase in the number of programs and/or concentrations offered by Science & Technology, including at least two new programs and/or concentrations offered across Academic Units or Faculties. • An increase in the range of credential types offered by Science & Technology. • A 15% increase in the FLE associated with Science & Technology programs. • A 5% increase in the proportion of total institutional FLE deriving from Science & Technology programs. • Improvement (or maintenance if the number is already high) of key indicators of the learning experience for students in Science & Technology courses and programs.	• Facilitate a collaborative process to identify broad objectives for program planning in the Faculty (i.e. discipline specific, multidisciplinary, core areas of focus, concentrations within existing programs versus new credentials, etc). • Direct resources to the development and/or growth of programs that respond to new objectives for program planning and/or to student demand. • Grow intakes through both the expansion of existing programs and the development of new programs. • Develop and implement new Post-baccalaureate Certificate programs. • Leverage any future internal and external funding opportunities by preparing and submitting proposals. • Ensure program review advancement plans are responsive to program growth and evolution in a manner consistent with the Faculty commitments outlined here. • Establish baseline data and track progress annually.

Commitment 2: Pedagogy and Modality

STRATEGIC PLAN PRIORITY	ACADEMIC PLAN PRIORITY	FACULTY COMMITMENT
Mount Royal has optimized flexibility in its program delivery options and pathways for students to complete their program of choice. Mount Royal holistically supports students by readily connecting them with the resources they need to achieve their personal and academic goals.	Diversify pedagogical practices and course delivery options to enhance the learning experience and support the evolving needs of students.	We commit to continually improving our students' learning experiences in pursuit of excellence. This includes our commitment to continually improve our teaching and learning practices and the use of technology as a teaching and learning tool. We commit to enhancing our current timetable by offering flexible learning opportunities to our students.

MEASURABLE OUTCOMES	ACTION PLAN
• A 20% increase in the number of registrations (measured at add/drop) in Spring and Summer courses offered by Science & Technology. • An increase in the availability of online learning opportunities in the Science & Technology timetable, with at least 10% of Spring/Summer sections offered online. • Universal Design for Learning is adopted in progressively more Science & Technology courses. • A 10% increase in Science & Technology scores for effective teaching practices and providing support to help students succeed academically.	• Audit current delivery modes for Science & Technology curriculum. • Define the optimal use of flexible learning opportunities by developing teaching guidelines, which include teaching modality and providing more course-taking opportunities throughout the academic year. Implement a plan to optimize the use of flexible learning opportunities using an evidence-based approach. • Minimize duplication and competition in our course offerings. • Create additional capacity and rewards to support new and innovative approaches to curriculum development, with a particular focus on online course development and Universal Design for Learning; encourage submissions for curriculum redesign and elearning. • Promote engagement in teaching professional development, and work with the ADC to ensure workshops better reflect needs for teaching in Science & Technology. • Expect, recognize, and reward high quality and innovative teaching. • Recognize that high quality academic advising is key to student success; ensure that advising is structured and resourced accordingly in Science & Technology. • Establish baseline data and track progress annually.

Commitment 3: Experiential Learning and General Education

STRATEGIC PLAN PRIORITY	ACADEMIC PLAN PRIORITY	FACULTY COMMITMENT
Mount Royal graduates have the transversal skills they need to make meaningful contributions to the workforce and the broader communities to which they belong.	Expand experiential learning opportunities across all programs to ensure students can connect theory to practice, achieve personal and professional growth, and provide meaningful contributions to their communities. Strengthen General Education to better prepare students with essential knowledge and skills for academic success, professional growth and the broader aims of a liberal education.	We commit to deepening and broadening efforts to provide field-based experiences and experiential learning opportunities that span a range of settings. We will embed work integrated learning into all our degree programs, ensuring that students have access to an enriched learning opportunity prior to graduation. We will advocate strongly for the importance of science and mathematics in a liberal education. We will ensure that our contributions to General Education are appropriately designed and taught so that all Mount Royal students learn to appreciate the importance of mathematics, science, and scientific enquiry.

MEASURABLE OUTCOMES	ACTION PLAN
• All majors in the BSc provide access to work integrated learning. • An increase in the number of courses and/or student participation where experiential learning is a key component or the sole mode of delivery. • An update to the General Education model in which Science & Technology plays a more significant role (broadly defined). • A 20% increase in the number of Science & Technology students who participate in work integrated learning. • Improvement (or maintenance if the number is already high) in metrics concerning Science & Technology students' perceptions of skills development.	• Audit current course and program offerings against the cross-institutional experiential learning framework. Identify opportunities to increase field-based experiences and experiential learning in programs; resource identified areas to engage in related curriculum development and updated course offerings. • In partnership with Career Services, introduce work integrated learning course shell structures in all degree programs where they are currently lacking, and adjust programs of study accordingly. • Increase awareness of non-mandatory work integrated learning opportunities through communication strategies including information sessions, and by better integrating career and academic advising. • Develop a Science & Technology perspective on General Education and advocate with the General Education Steering Committee for the role we wish to play in a new model. • Ensure that Science & Technology courses are meeting the General Education needs of students through enhanced communications and clear processes for managing scheduling and enrollment in G-designated courses. • Establish baseline data and track progress annually.

Commitment 4: Research and Scholarship

STRATEGIC PLAN PRIORITY	ACADEMIC PLAN PRIORITY	FACULTY COMMITMENT
Mount Royal is recognized for impactful research and scholarship that advances knowledge, informs teaching and promotes community engagement. Mount Royal is a community-engaged university where on- and off-campus initiatives promote the economic, cultural and social well-being of all communities involved.	Grow research and scholarship to advance knowledge, inform teaching and curriculum, and create stronger connections with the communities we serve.	We commit to supporting and promoting a variety of research and scholarship, and to encouraging the continued pursuit and effective use of external funding from diverse sources. We will ensure that scholarship and teaching have multiple occasions to meet, and that there is a focus on training and providing research opportunities for Mount Royal undergraduate students.

MEASURABLE OUTCOMES	ACTION PLAN
• An increase in the total dollar value and/or number of successful external funding applications by Science & Technology faculty. • A minimum 50% success rate with applications for external grant renewal. • An increase in the number of applications, total dollar value, and/or number of successful team grants involving Science & Technology faculty. • A 30% increase in the number of Science & Technology students participating in for-credit research opportunities (including course-based undergraduate research experiences, independent studies, and honours). • A 30% increase in the number of Science & Technology students participating in for-pay research opportunities. • Establish baseline demographic data for student participation in research in Science & Technology by 2026. • Increase to 50% the percentage of fourth-year Science & Technology students indicating they have undertaken research with a faculty member. • DORA principles are integrated in Science & Technology scholarship evaluation processes. • Improved indicators of research performance, including the number of faculty and undergraduate dissemination activities.	• Leverage both internal and external opportunities to expand funded research and dissemination support for undergraduate students in Science & Technology. • Demonstrate and strengthen connections between faculty scholarship, courses/programs, and high quality undergraduate research opportunities. • Expand opportunities within the curriculum for students to be involved in research projects with faculty. • Ensure all Science & Technology students are aware of the range and scope of opportunity for engagement in research. • Prioritize resources that support activity enhancing individual scholarly productivity and impact, including sufficient capacity in support roles within Science & Technology. • Create a mentoring infrastructure for researchers and students. • Integrate the principles of the DORA into all decision-making processes where scholarship is evaluated. • Support and encourage team-based research projects and leverage a broader range of external funding opportunities. • Make selected, significant investments in research areas by using external funding opportunities such as the Canada Foundation for Innovation and the Canada Research Chairs Program. • Establish baseline data and track progress annually.

Commitment 5: Indigenization and Decolonization

STRATEGIC PLAN PRIORITY	ACADEMIC PLAN PRIORITY	FACULTY COMMITMENT
Mount Royal creates ethical space that integrates Indigenous knowledge, and Indigenous and non-Indigenous community members can learn from one another in a respectful environment.	Integrate Indigenous ways of knowing and perspectives into curriculum, applying the principles of the United Nations Declaration on the Rights of Indigenous Peoples and the recommendations of the Truth and Reconciliation Commission of Canada.	We commit to increasing awareness and engagement with decolonization, reconciliation, and Indigenization in Science & Technology, and to making tangible progress as it relates to programs, people, and professional development. We commit to engaging and consulting with experts, including community members (Elders, Knowledge Keepers) and academics, to meaningfully promote and support Indigenous initiatives, and to ensure that Indigenization activities are conducted with respect, relevance, and reciprocity.

MEASURABLE OUTCOMES	ACTION PLAN
• Development and launch of an online repository containing a variety of resources. • A 10% increase (headcount) in Indigenous students enrolled in Science & Technology's programs. • The percentage of faculty members in Science & Technology who self-identify as Indigenous will be aligned with the Indigenous student percentage of domestic enrollment in Science & Technology programs. • An increase in the number of courses in the Science & Technology timetable integrating Indigenous course content and/or focused on Indigenous content. • All programs offered by Science & Technology have incorporated Indigenous course content in the major by the next cyclical program review. • The percentage of Science & Technology students reporting that Indigenous course content had enriched their university experience, and that their experience at Mount Royal had substantially contributed to their understanding of Indigenous worldviews, meets or exceeds the percentage for all Mount Royal students. • Activities are conducted involving Indigenous communities and community members (e.g., guest lectures, field trips). • Outreach programs are offered to Indigenous youth.	• Create a resource repository for materials on integrating Indigenous content into courses and programs, monitoring the number of resources collected and feedback from users on the repository's effectiveness. • Revise and develop courses to include Indigenous Knowledge systems, perspectives, and contributions to science, where appropriate. Encourage, support, and resource faculty who engage in these efforts and ensure that these activities are recognized in tenure and promotion processes. • Inventory courses containing Indigenous content and update programs of study to ensure Indigenous content is integrated in all programs. • Work closely with the Office of Indigenization & Decolonization to create opportunities for in-person learning and professional development each semester, with education about contemporary issues, knowledge systems, and introducing Indigenous content into courses and programs. • Create and expand on co-curricular activities to support students' engagement with Indigenous ways of knowing beyond the classroom. • Establish and strengthen relationships with Indigenous communities to bring Knowledge Keepers into our classrooms and provide students with experiential learning opportunities. • Working closely with the Iniskim Centre, enhance support mechanisms for Indigenous students pursuing Science & Technology courses, and develop and expand outreach programs aimed at increasing the interest and participation of Indigenous youth in science. • Recruit and support Indigenous faculty members, ensuring there are creative and supportive pathways for success and impact. • Establish baseline data and track progress annually.

Commitment 6: Internationalization and EDI&A

STRATEGIC PLAN PRIORITY	ACADEMIC PLAN PRIORITY	FACULTY COMMITMENT
Students at Mount Royal have local and international learning experiences that develop the intercultural competence they need to work and live in a global society. Mount Royal has embedded the principles of intersectional equity, diversity, inclusion and accessibility and is a welcoming environment free from discrimination and systemic racism.	Provide more teaching and learning opportunities with international and intercultural components, to uphold and advance principles of equity, diversity, and inclusion.	We commit to valuing cultural pluralism as much as ideological and pedagogical pluralism. Believing that true education can flourish only when all groups are welcomed and engaged in the free exchange of ideas, we commit to ensuring Science & Technology is an inclusive community for students and employees of all backgrounds. We will work to promote this in the classroom, in our hiring practices, and in all of our work, including with students. We commit to ensuring our employees and students acquire and apply intercultural skills in order to more effectively participate in an increasingly complex society.

MEASURABLE OUTCOMES	ACTION PLAN
• Development and launch of an online repository containing a variety of resources. • An increase in the number of courses in the Science & Technology timetable integrating intercultural learning. • At least one professional development session related to EDI&A in science and technology is offered each semester. • All Science & Technology-funded awards align with EDI&A best practices. • An increase in international research students annually through funded internship programs and visiting student opportunities. • An increase in domestic student participation in local and international education programs, specifically those that include intercultural learning, such as study abroad and field schools. • Improvement (or maintenance if the number is already high) of key indicators of intercultural competence and EDI&A for students in Science & Technology programs. • A 50% increase (headcount) in international students enrolled in Science & Technology's programs.	• Create a toolkit for both faculty and students that provides ideas to diversify instruction in science and technology, bringing EDI&A to the curriculum and the classroom; monitor the number of resources collected and feedback from users on the repository's effectiveness. • Encourage, support, and resource faculty who engage in efforts to diversify their teaching, including incorporating intercultural skills. • Work closely with the Office of Equity, Diversity, and Inclusion to create opportunities for in-person professional development and training each semester, with education about EDI&A in science and technology. • Ensure there is mentorship and access to resources that provide strategies, ideas, activities, and practical tools to help integrate EDI&A practices into research. • Ensure that criteria for distributing Faculty-funded awards are consistent with EDI&A best practices. • Grow international student enrollments in Science & Technology by creating international cohorts or targets in selected new and existing programs. • Leverage funded internship programs and visiting student opportunities to bring international research students to Science & Technology. • Promote opportunities for domestic students wanting to participate in international education programs such as study abroad and field schools, and promote connections with international researchers through guest speakers, visiting researchers, or faculty exchanges. • Explore and provide information on international research funding opportunities and grants to support faculty and student research projects. • Establish baseline data and track progress annually.

Commitment 7: People, Resources, and Infrastructure

STRATEGIC PLAN PRIORITY	ACADEMIC PLAN PRIORITY	FACULTY COMMITMENT
Mount Royal is an employer of choice that attracts and retains top talent.	A Faculty Complement Strategy that clarifies how best to grow and diversify the complement needed to achieve our strategic priorities will be developed in alignment with the Academic Plan. We will ensure the appropriate use of and investment in physical infrastructure and technology to achieve our strategic priorities.	We commit to proactively recruiting excellent educators, researchers, and professional staff from diverse backgrounds to support our goals and objectives. We commit to ensuring our community of employees feel involved, appreciated, and proud of what they do. We commit to improving the quality and quantity of Science & Technology's infrastructure and facilities to best support teaching, research, and scholarship. We will continually assess the degree to which our structure and organization contribute to academic excellence and scholarly impact. We will work to overcome the challenges that impede our shared aspirations by identifying and refining opportunities for progress.

MEASURABLE OUTCOMES	ACTION PLAN
• Establish baseline demographic data for employees in Science & Technology by 2026. • A progressive improvement in Science & Technology employee engagement index scores (or maintenance if the number is already high). • Implementation of a clear and systematic mentorship program in which all new full-time faculty can participate. • Increased participation of MRSA employees in demonstrable professional development and cross-training initiatives; all position descriptions are current. • Receipt of awards and related recognition of faculty and students. • Stories and media mentions of achievements and expertise. • Incremental improvement of Science & Technology facilities by leveraging annual and periodic opportunities presented by internal renovation funding, and CFI and other external funding. • Completion of B-wing renovation and/or new facilities construction by 2030. • Establishment of a sustainable capital equipment fund by 2028, with a stable and predictable approach to acquisition. • An increase in new initiatives or projects that are driven by collaboration between Departments. • Progress in the simplification and/or elimination of processes that are unnecessarily complex, duplicative, or wasteful.	• Attract, retain, and develop a diverse, highly engaged, and productive community of employees. • Develop a framework to ensure that our early career faculty receive excellent mentorship within Science & Technology to enable them to reach their potential. • Initiate professional development and cross-training plans for MRSA employees; ensure all MRSA employee roles and responsibilities are clear. • Proactively nominate employees for internal and external awards. • Realize a Science & Technology building plan providing for the renovation of the B-wing and the construction of new facilities. Create core teaching and research facilities that are purposeful and scalable. • Advocate for a sustainable capital equipment fund, and develop a clear plan around equipment replacement and addition, that will ensure students are always trained on up-to-date equipment. • Advocate for financial resources (labour and non-labour) that appropriately reflect FLE growth and new program development. • Identify and minimize elements of our structure, operations, and culture that inhibit communication, collaboration, and creativity. • Within the scope of our control, simplify or eliminate processes and procedures that waste time, effort, and resources, or that create unnecessary duplication. • Promote, celebrate, and increase the visibility of our achievements in teaching, scholarship and community engagement • Establish baseline data and track progress annually.

End note

Conclusion

This Plan provides guidance for action and change. It directs decision-making, and the allocation of resources and effort. This Plan is intended to also act as a useful mechanism for determining what we might stop or defer doing. We welcome input at any stage of the Commitment Plan's term. Please contact fstgovernance@mtroyal.ca

Terminology

DORA is the Declaration on Research Assessment.

EDI&A is equity, diversity, inclusion, and accessibility.

Experiential learning provides enriched learning opportunities, inside and outside of the classroom, where students learn through action and reflection. It is often the opportunity to integrate theory and practice. At Mount Royal, experiential learning includes (but is not limited to) field schools, simulation learning, Community Service Learning, course-based research opportunities and work-integrated learning (such as practica, clinical placements, internships, co-operative work programs, work experiences, and community and industry research and projects). Students may also participate in experiential learning connected with Indigenous ways of knowing.

FLE (Full-load Equivalent) is a measure used to allow for comparable calculations across different programs and institutions. The FLE is measured by taking the load of the learner enrolled (instructional hours + practicum hours) and dividing by the full load of that program. The FLE calculation is consistent for every program and institution. At Mount Royal, the student heads to FLE conversion is approximately 0.80 (i.e., 10 individual students = 8 FLE).

General Education refers to a set of courses or requirements that are part of an undergraduate curriculum, designed to provide students with foundational knowledge and skills across a variety of disciplines. The purpose of General Education is to ensure that students receive a well-rounded education, regardless of their major, by exposing them to different subjects and perspectives.

Intercultural competence refers to "the ability to deal effectively with cross-cultural contexts, including the identification of relevant cultural differences, predicting misunderstanding due to those differences, and generating appropriate adaptation strategies based on perspective-taking and code-shifting (Bennett, 2010)."

Transversal skills are those typically considered as not specifically related to a particular job, task, academic discipline or area of knowledge but as skills that can be used in a wide variety of situations and work settings (IBE 2013). These skills are increasingly in high demand for learners to successfully adapt to changes and to lead meaningful and productive lives (UNESCO, 2014)." Examples include (but are not limited to): (1) Critical and innovative thinking; (2) Interpersonal skills (e.g., presentation and communication skills, organizational skills, teamwork, etc.); (3) Intrapersonal skills (e.g. self-discipline, enthusiasm, perseverance, self-awareness, etc.); (4) Global citizenship (e.g. openness, respect for diversity, intercultural understanding, etc.); (5) Media and information literacy, such as the ability to locate and access information as well as analyze, evaluate and share information effectively and ethically.

Universal Design for Learning (UDL) is an educational framework that guides the development of flexible learning environments to accommodate individual learning needs and reduce barriers to learning. UDL offers flexibility in how learners access material, engage with it and demonstrate their knowledge.

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