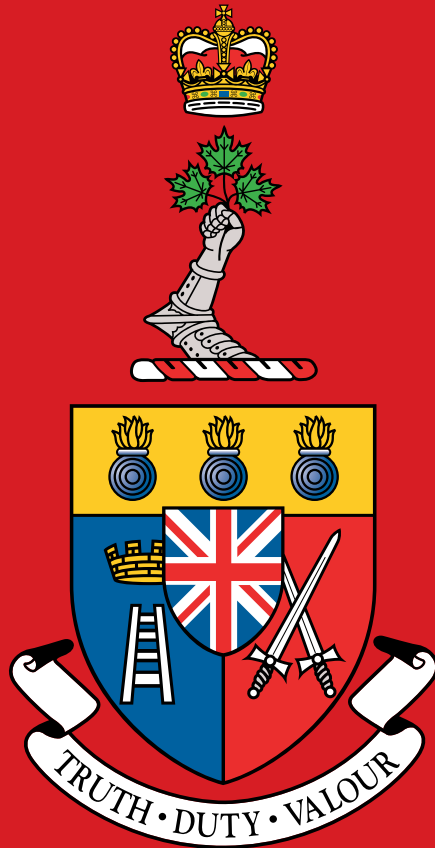


# ROYAL MILITARY COLLEGE OF CANADA



VÉRITÉ • DEVOIR • VAILLANCE

*Kingston, Ontario*



## Universities with a difference!

The Royal Military College of Canada (RMC) in Kingston, Ontario, and Royal Military College Saint-Jean (RMC Saint-Jean) in Saint-Jean-sur-Richelieu, Quebec, are both Canadian military universities – they truly are *Universities with a difference!*\*

Also known as Canadian Military Colleges (CMC) initially formed in 1948, they offer amongst other programmes the Regular Officer Training Plan – a paid education plan to obtain both a commission as an officer in the Canadian Armed Forces (CAF) and an undergraduate degree.

These two renowned institutions, along with the Canadian Forces College in Toronto, which offers postgraduate degrees to senior officers, and the Chief Warrant Officer Robert Osside Profession of Arms Institute at Fort Saint-Jean, Quebec, which offers four professional development programmes to senior non-commissioned members who are called upon to take institutional responsibility, compose the Canadian Defence Academy headquartered at CFB Kingston, in Ontario.

\* RMC Saint-Jean is currently engaged in a process with the Ministère de l'Éducation et de l'Enseignement supérieur of Quebec for the re-establishment of its university status and for the accreditation of the Bachelor of Arts in International Studies programme. The information on this programme contained in this brochure is subject to change depending on the results of the current process.



# Royal Military College of Canada

RMC provides young Canadians with fully subsidized high-level education leading to a university degree that allows them to develop the competencies required to become strong leaders for the CAF. As you join RMC as an officer cadet, you will embark on an invigorating journey and become a part of a proud heritage.

The education and military experience will provide you with the professional and intellectual skills necessary to assume the responsibilities and meet the demands of leadership in today's rapidly changing world. A career as an officer in the CAF will offer you experiences and challenges serving Canada across the country and the globe. Attending RMC is the first step you will take on an exciting career path destined for success.

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Truth • Duty • Valour



# Where to Find Us

## ***Ideally Located***

The RMC Campus, rich in history, heritage and tradition, is located on Point Frederick, a small peninsula located near downtown Kingston, Ontario. The College is situated midway between Toronto and Montreal, and only two hours from Ottawa, the national capital. This scenic location at the junction of Lake Ontario and the St. Lawrence River is of great historic importance. It has been an active military site since 1789 and, during the War of 1812, it served as the major naval station in Upper Canada. Ships of the Royal Navy were built and based here. RMC has two National Historic Sites of Canada, the Royal Naval Dockyard and Point Frederick.

### ***By Car***

Toronto 2.5 hrs  
Ottawa 2 hrs  
Montreal 3 hrs

### ***By Plane***

Vancouver 5 hrs  
Halifax 4 hrs  
Winnipeg 3 hrs

### ***By Train***

Hamilton 3.5 hrs  
London 6 hrs  
Windsor 8 hrs

*Downtown Kingston*



## **Visiting RMC**

*RMC opened its doors to the first officer cadets in 1876, making it Ontario's fifth oldest university.*

**Undergraduate candidates and their families are encouraged to participate in a tour of RMC. Tours are offered on Tuesdays and Thursdays at 1:30 p.m. throughout most of the year but reservations are required. Please contact [liaison@rmc.ca](mailto:liaison@rmc.ca) or call toll free 1-866-762-2672 or 613-541-6000 ext. 6984 to schedule your campus tour.**



# Application Procedures and Admission Requirements

## Admissions

By submitting their application, candidates are applying for full-time employment with the CAF. RMC provides the basis for the professional development as future Royal Canadian Navy, Canadian Army or Royal Canadian Air Force officers. An application to RMC is an application to serve Canada as a future officer in the CAF and to receive an exceptional education that provides the academic, linguistic and fitness requirements to lead.

## Regular Officer Training Plan

The Regular Officer Training Plan (ROTP) gives young Canadians an opportunity to obtain both an officer's commission in the CAF and an undergraduate degree. Candidates who have been accepted at RMC or at another Canadian university are enrolled in the CAF as officer cadets.

Under the ROTP, the Department of National Defence (DND) pays for all costs of tuition, uniforms, books, instruments, and other essential fees. Officer cadets are also paid a monthly salary (from which mandatory room, board and mess dues are deducted), undergo military occupation training, and if required, second language training during the summer months, as well as receive full medical and dental care at no cost. Annual vacation with full pay is granted according to CAF regulations.

Officer cadets are required to maintain satisfactory academic and military performance throughout the programme. Those who do not maintain a suitable level of academic performance may be permitted to repeat one year at their own expense and, if successful, be reinstated to full pay and allowances.

On successful completion of the ROTP programme, officer cadets receive an undergraduate degree in Engineering, Science or Arts and become fit, bilingual, officers in the Royal Canadian Navy, Canadian Army or Royal Canadian Air Force. They normally serve in this capacity for four to five years, during which time they are eligible for promotion within the CAF.

Officer cadets enrolled under the ROTP may apply to release from the CAF prior to the commencement of the second academic year without incurring any obligatory service or financial penalty.

## How to Apply

All students interested in pursuing their studies at a CMC must apply through [Canada.ca/forces-jobs](http://Canada.ca/forces-jobs) and select 'Apply Now'. Candidates are encouraged to start their application in September of their final year of high school. In order to ensure that applications are processed in time for early selection, students are highly encouraged to apply once their Grade 11, or Secondary 5, final transcripts are received. Candidates who apply before January 31 of the year of enrollment increase their chances of being selected for their chosen trade and programme of study.

Information concerning the application process can be obtained from any Canadian Forces Recruiting Center (CFRC) at 1-800-856-8488 or at [www.forces.ca](http://www.forces.ca) and search for 'Canadian Armed Forces Jobs'.

## Selection Process

Since an application to RMC is also an application to the CAF, all ROTP candidates are required to complete the following at their local CFRC:

- An aptitude test
- A medical examination
- An interview

## Applicants are evaluated on two fundamental criteria:

- **Military Potential.** The score is based on the assessment of the applicant's aptitude, personality traits and suitability for the chosen occupation.
- **Academic Performance.** The Admissions Office assesses academic performance which includes verifying a candidate's top six most recent marks for which official transcripts will have been submitted as part of the initial application to the CAF. Transcripts must include the prerequisites for the academic programme of choice.

ROTP candidates may receive an offer to study in either of the two military colleges. Senior candidates selected for RMC Saint-Jean will complete their first year of university studies and the Basic Military Officer Qualification in Saint-Jean-sur-Richelieu, Quebec, after which they will attend RMC in Kingston, Ontario, for three years.

## General Qualifications

To qualify for admission to RMC, a candidate must:

- Be a Canadian citizen
- Meet the minimum medical standard required for CAF enrolment
- Pass pre-enrolment tests
- Be 16 years of age to submit an application
- Possess the necessary academic qualifications
- Have a 75% minimum grade point average to apply

## General Academic Qualifications

To qualify for admission to RMC, a candidate must be in the process of completing or have completed secondary school at a university preparatory level (Grade 12 or the provincial equivalent). Candidates are required to have the necessary credits for admission to a university in the province where they are completing secondary education and meet the RMC admission requirements for the programme they want to pursue. Quebec students enrolled in CEGEP must be completing or have completed the first year of a two year pre-university programme, and will normally be expected to have completed fourteen credit courses.

## Where to Start

### Find an occupation that interests you.

RMC officer cadets have 20 unique and exciting jobs available to them through the CAF after graduation. Explore your options by visiting [www.forces.ca](http://www.forces.ca).

### Find a degree programme that interests you.

RMC offers 19 undergraduate degree programmes, some of which are required for specific occupations. To verify, contact your local CFRC at 1-800-856-8488.







## The Four Components of Achievement

### **Leadership**

The Leadership Component develops personal skills needed by officers to succeed in today's complex and rapidly changing world. Basic Military Officer Qualification will provide the fundamental skills of an effective leader and resource manager. This leadership training will be expanded upon during your studies. Along with other experiences, it prepares the individual for making difficult decisions under stress through deeper understanding of the factors affecting the role as a leader. The nature of military leadership and military operations necessitates an in-depth understanding of human behaviour; therefore, studies in military psychology and leadership are part of the required academic curriculum. Particular emphasis is placed on the importance of personal integrity, ethical behaviour and professional responsibility.

### **Athletics**

The Athletics Component teaches the importance of fitness and a healthy lifestyle. Striving to achieve a higher level of physical fitness improves the quality of life, enables more effective learning, and inspires others. Officer cadets are required to participate in a physical education programme designed to achieve and maintain a high level of fitness and learn the basics of a wide variety of team and individual sports.

### **Bilingualism**

Bilingualism reflects Canada's cultural heritage. As representatives of this heritage, officers are expected to be fluent in both of Canada's official languages. Responsibilities as an officer in the CAF require leading Canadian men and women of both official languages. RMC has been training officers to communicate effectively in both English and French for more than 40 years through in-class instruction and integration into daily life. Located in an Anglophone environment, RMC is a great place for Francophones wanting to perfect their linguistic proficiency in English and rapidly meet CAF requirements with regard to bilingualism.

### **Academics**

The academic programme is built upon the foundation of an undergraduate degree. All university programmes – Engineering, Science or Arts – are balanced with a core curriculum of liberal arts, science and military education in preparation for the complexities of service in the 21st century.



# The Leadership Component

Since RMC's goal is to prepare students for their roles as officers in the CAF, it is important for officer cadets to be exposed to and develop leadership traits during their time at RMC.

## Basic Military Officer Qualification

Students accepted to RMC begin their first year with Basic Military Officer Qualification at the Canadian Forces Leadership and Recruit School (CFLRS) in Saint-Jean-sur-Richelieu, Quebec. This introductory programme consists of common military subjects such as general military knowledge, the principles of leadership, military regulations and customs, basic weapons handling, and first aid. Opportunities will also be provided to apply such newly acquired military skills in training exercises involving force protection, field training, navigation and leadership.

## First Year Orientation Programme

Upon completion of Basic Military Officer Qualification, students begin full-time studies at RMC and continue learning the elements of military training during the First Year Orientation Programme. This ends with the running of the RMC Obstacle Course after the induction into First Year at RMC.

## Community Involvement

Each year, officer cadets participate in a class project which involves organizing and running a community-based event. Past projects include collecting food for a local food bank, hosting support groups for a day of fun, cleaning up local parks, and staging a talent show.

## Summer Training

After completing the first year at RMC, officer cadets return to Saint-Jean-sur-Richelieu, Quebec, to complete their Basic Military Officer Qualification. After the second year, officer cadets complete 10 weeks of Second Official Language Education and Training if required, or they can receive up to 12 weeks of military training which may include military occupation training relevant to their chosen element or occupation. This training takes place at military bases across Canada. After the third year, officer cadets participate in on-the-job-experience or formal occupational training within their field of specialization. After the fourth year and upon graduation, they are commissioned as an officer in the Royal Canadian

Navy, Canadian Army or Royal Canadian Air Force and continue their training at military bases in Canada.

## Military Drills and Parades

RMC is renowned for the quality and diversity of its ceremonial parades. Officer cadets are expected to reach and maintain a high standard in drill with the service rifle, the ceremonial flag, and the sword.



# The Athletics Component

The Physical Education and Athletics programme is designed to help each officer cadet attain a high level of physical fitness and a level of skill in a wide variety of sports. This programme is compulsory and officer cadets are tested periodically to ensure that they meet fitness standards in terms of stamina, agility and strength.

## Physical Education

The four years of physical development are designed to achieve different levels of athletic fitness. Officer cadets attend a two hour physical education period each week during the academic year, as well as complete a physical fitness test twice per year.

The first year of studies emphasizes proper training and conditioning techniques; the second year, team sports participation; the third year, military training, which includes hand-to-hand combat techniques and military fitness; and the fourth year specializes in a wide variety of activities and sports.

## Varsity Sports

RMC is a member of Ontario University Athletics (OUA), one of four conferences that make up Usports. RMC's varsity teams compete in the following OUA sports:

<b>Fencing</b>	Men & Women
<b>Hockey</b>	Men
<b>Rugby</b>	Men
<b>Soccer</b>	Men & Women
<b>Volleyball</b>	Men & Women

## Competitive Clubs

These clubs provide members an enhanced opportunity for training and competition that are otherwise not available as recreation clubs. RMC's clubs include:

<b>Running</b>	Men & Women
<b>Rowing</b>	Men & Women
<b>Rugby</b>	Women

<b>Sailing</b>	Men & Women
<b>Swimming</b>	Men & Women
<b>Taekwondo</b>	Men & Women

## Intramural Sports

Officer cadets who are not members of a varsity team or competitive club participate in the intramural programme twice per week and may be involved in organizing and running intramural events. RMC currently offers, among many other sports, ice hockey, ball hockey, basketball, soccer, water polo, ultimate frisbee, and flag football.







# Athletics Facilities

RMC's modern athletics facilities offer officer cadets participation in many different sports and activities. The Kingston Military Community Sports Centre houses a 25-metre pool and hot tub, a 200-metre track, a spin room, cardio room, squash courts, a weight room and hardwood courts. There are also tennis courts, soccer fields, an ice rink, a beach volleyball court, and ample amount of equipment that provide students with the opportunity to participate in water sports, including windsurfing, canoeing and kayaking. The latest addition to the athletics facilities is the sports dome which contains an 85-metre by 120-metre turf field.

Officer cadets are also able to use CFB Kingston's golf and curling clubs, as well as the bowling alley.

The athletics facilities are used on a regular basis by the cadets for intramural sports and physical education courses.



## Recreational Clubs

Recreational clubs are created and organized by officer cadets with the intent of providing leadership opportunities for students. They also help develop the social skills of those who choose to get involved and to introduce different leisure and athletics activities to the RMC community not already offered through the varsity and intramural programme. Some of RMC's recreational clubs include:

- Astronomy
- Band
- Bilingualism
- Chess
- Climbing
- Curling
- Debate
- Expedition
- Judo
- Multi-Sport
- Paintball/Airsoft
- Photography
- Power Flying
- Sport Parachuting
- Stage Band
- Theatre
- War Games
- Windsurfing
- Yacht



# The Bilingualism Component

One of RMC's objectives is to ensure that officer cadets can communicate in both official languages and that they understand the principles of bilingualism. Second Official Language Education and Training (SOLET) is thus mandatory for all officer cadets who are not already highly proficient in their second language.

## Language Classes

Upon arrival at the College, officer cadets complete a placement test that measures their second official language proficiency. If an officer cadet does not reach the level required by the curriculum of RMC, they take SOLET classes.

Officer cadets are grouped according to proficiency level and take classes for fifty minutes every weekday. Classes are small (a maximum of ten officer cadets) and focus on reading comprehension, written expression and oral competency. Officer cadets can also reserve online for one-on-one tutorials also offered in all areas of study.

## Summer Training

Officer cadets who have not reached the bilingualism level required by the curriculum following second year will complete an intensive ten week immersion course. Officer cadets are in class for five hours per day with small class sizes, either at RMC or at the Canadian Forces Language School in Saint-Jean-sur-Richelieu, Quebec.

## Testing

Officer cadets will eventually take exams administered by the Canada School of Public Service. RMC's Language Centre will schedule the officer cadets to take these exams. The Language Centre has its own evaluation tools to determine if candidates are ready for the official exams.

## Daily Life

Academic courses are offered in both English and French, which means that officer cadets may be able to enroll in classes instructed in either official language and write all papers and essays in their first official language.

For one half of each month on campus, business is conducted in one official language. This means that orders and directives are given in the language of the day, and all activities and events outside of class are performed in that language. As well, every effort is made to board first year officer cadets with different first languages together. RMC students are required to achieve a BBB level recognized by the Canada School of Public Service.

For the officer cadets, RMC is the first milestone of a stimulating journey that aims at propelling them as leaders of their generation. We strongly believe that the knowledge and the linguistic, communication and cultural competencies acquired during this first step of their journey will enrich these young men and woman who will be called upon to contribute to the mission of the CAF and serve their country.





# The Academic Component

RMC's Academic Component consists of an undergraduate university degree. Students with a secondary school diploma begin their university studies at RMC in Kingston, Ontario, or at RMC Saint-Jean in Quebec. Students completing secondary 5 in Quebec begin their studies by completing Preparatory Year at RMC Saint-Jean in Quebec, and then continue with university studies at RMC in Kingston.

## Undergraduate Degrees

RMC offers 19 four-year undergraduate degrees in Arts, Science, and Engineering that are all balanced with a core curriculum of liberal arts, science and military education.

### Arts

By virtue both of its diversity and its emphasis on providing Canada with well-rounded citizens capable of excelling both within and beyond the domain of the CAF, an RMC Arts degree ensures that officer cadets gain knowledge and experience that will prepare them for a career in the military and for their role as leaders in contemporary Canadian, and increasingly global society. Officer cadets take courses that offer knowledge relevant to their academic specializations. They can expect to develop crucial oral and written communication skills, creative and critical thinking capabilities, and problem-solving strategies. Central to the overall vision of the Faculty of Arts is that officer cadets graduate prepared to contemplate and engage in, and with, the vast array of social, political, psychological, economic, philosophical, artistic, cultural, and human experiences that they will encounter as global citizens of the 21st century.

Officer cadets in the Arts programmes are required to take a common set of core courses in the first year and then declare a Major field of study in the second, during which the programme consists of a combination of compulsory and elective courses.

### Bachelor of Arts (Major and Honours)

- Business Administration
- Economics
- English
- French Language, Literature and Culture
- History
- Military and Strategic Studies
- Political Science
- Psychology

### Science

The Faculty of Science provides quality Science based programmes to officer cadets within the RMC framework of a broad-based education.

The Faculty of Science offers Minors in Life Science and in Environment, which can be taken by officer cadets in any Science programme. Officer cadets follow a common first year programme consisting of a mixture of Science courses (algebra, calculus, chemistry, computer science, physics) and Arts courses (English, psychology). After First Year, officer cadets choose the degree programme they wish to follow.

### Bachelor of Science (Major and Honours)

- Chemistry
- Computer Science
- Mathematics
- Physics
- Space Science

### Engineering

The Faculty of Engineering is responsible for the education of future officers for professional careers in engineering in the CAF. Of primary concern is the development of professional competence in areas applicable to the military and society at large. The curriculum is a mixture of domain-specific engineering courses rounded out by knowledge-broadening courses in the humanities.

All Engineering programmes are based on a common first year with specialization commencing in the second year of study. The fourth year programme includes a realistic engineering project for which officer cadets must define the problem as well as find an appropriate engineering solution which will inevitably involve the interaction of several subject areas.

The RMC Engineering programmes are highly regarded because of their practical application to military problems and the low officer cadet to professor ratio. These unique characteristics, along with a commitment for excellence in education, assures successful candidates of an Engineering degree with a difference. All of RMC's engineering programmes are accredited by the Canadian Engineering Accreditation Board.

### Bachelor of Engineering

- Aeronautical
- Chemical
- Civil
- Computer
- Electrical
- Mechanical





# The Faculty of Arts

## ***Business Administration***

The study of business administration accentuates a number of functional areas including accounting, information systems, finance, marketing, operations management and human resource management. The practice of business administration does not take place in a vacuum, and understanding the environmental context and its relationship with a functional area is essential to the development of effective decisions, policies and strategies. The programme provides the officer cadet with a basic understanding of certain core disciplines, such as quantitative methods, economics and psychology, as well as basic understanding of each of the functional areas listed above.

## ***Economics***

Economics is the social science that studies how individuals, firms, and governments make choices about allocating scarce resources to satisfy unlimited needs. Economic behaviour is everywhere: from officer cadets choosing how much time to allocate to studying versus going to the gym or going out, to governments choosing how to allocate resources to education, health care, or security. All of these decisions involve a choice of alternatives given limited resources, such as time and/or money. There are two main branches of economics: microeconomics and macroeconomics. Microeconomics studies the behaviour of individual decision makers such as firms and households. It deals with determination of prices and quantities in individual markets and with the relationship among markets. In contrast, macroeconomics is concerned with the behaviour of the economy as a whole, in particular, with factors such as unemployment, national income, economic growth, inflation, and price levels.

## ***English***

The English Studies programme is designed to develop and refine communication skills and enhance problem-solving abilities. The programme explores both traditional and non-traditional values in contemporary societies with a view to enhancing critical thinking and insight from the study of literary culture and language and the influence of these on economics, politics and history.

## ***French Language, Literature and Culture***

The programme is designed to improve the officer cadets' communication skills, teach them to think critically about and analyze francophone literature. By studying numerous literary works, officer cadets gain an understanding of the importance of cultural and social values in the development of societies and in today's world, with particular emphasis on "La Francophonie". The programme also investigates how sociocultural standards vary considerably from one society to another.

## ***History***

Appreciating the origins and complexities of the society in which we live requires an understanding of history. The study of history has also been described as one of the best possible educations for military leaders, short of actual battlefield experience. The programme places considerable emphasis on the study of international relations, civil-military relations, and the impact of war on society. It provides a broad exposure to the study of the histories of Canada, the Commonwealth, Europe, the United States, the former Soviet Union, the Middle East, China and Africa. Specialized thematic courses are also available.

## ***Military and Strategic Studies***

This programme employs a multidisciplinary approach to the study of international relations, strategic thought and military history, through a combination of core courses in history, political science and psychology. This programme is organized to provide a solid foundation for those who intend to pursue careers in the areas of international relations, defence and security studies.

## ***Psychology***

The programme provides officer cadets with the philosophical and psychological framework on which to build a sound understanding of the dynamics of leadership. The primary emphasis is the military experience. The programme focuses on self awareness and appreciation of human behaviour; ability to understand and apply influence in social situations; skill in adapting effective leadership approaches in a variety of circumstances; and an appreciation of the necessity for personal integrity, importance of human dignity, and need to reflect continually on one's values and professional conduct.

## ***Political Science***

Courses in the Political Science programme are multidisciplinary and focus on a broad spectrum of philosophical, social, political, strategic, military and security issues, both domestic and international, and their political implications. The programme is divided into six major fields of study: Canadian government, international relations, comparative politics, political theory, public administration and policy, and geography. The programme focuses on methods of inquiry and political philosophy, and addresses the big questions of peace, justice, democracy, and equality.





# The Faculty of Science

## **Chemistry**

Chemistry provides a basic building block for a broad understanding of the world around us. The principles and chemical properties learned will pervade every aspect of one's personal and professional life. The Department of Chemistry and Chemical Engineering offers a BSc in Chemistry covering fundamental aspects of the chemical sciences, with applications related to the military, nuclear science, the environment, and materials. Officer cadets also have the option of specializing in Life Sciences (courses geared towards chemical biology) and/or Environmental Sciences by taking advantage of our two available Minors.

## **Computer Science**

The importance of computers and their applications continues to grow in almost every sector of human endeavour. With a solid foundation in mathematics, algorithm analysis, computational complexity and programming fundamentals. Graduates are well-equipped to cope with the complex systems employed throughout the CAF.

## **Mathematics**

Apart from being a subject of study in its own right, mathematics provides practitioners in many fields with the tools to measure, analyze, and understand problems and phenomena within their respective disciplines. In today's complex world, mathematics graduates are required in virtually all parts of our lives where mathematical modeling provides the basis of our understanding and control. Mathematics graduates are often employed as consultants, as systems analysts or engineers, in operations research and in numerous other roles.

## **Physics**

Physics is a natural science based on experimentation, measurement and quantitative analysis with the purpose of explaining and predicting all physical phenomena, ranging from the nanoscale to the macrocosmos. It involves the study of matter and its motion through space and time, along with related concepts such as energy and force.

Physics is one of the oldest academic disciplines, perhaps the oldest through its inclusion of astronomy. It intersects with many interdisciplinary areas of research, and its boundaries are not rigidly defined. Physicists make significant contributions through advances in new technologies that arise from theoretical and experimental advances.

The programme offers a wide range of courses addressing many aspects of the physical sciences, such as mechanics, classical and modern physics, as well as electromagnetism and optics. Many specialized courses are offered in senior years to cater to the various branches of physics. These courses are mainly related to the three axes of research within the Physics Department: acoustics and oceanography, materials science, and space science, including astronomy and astrophysics. Hands-on experimental courses are included in every year of this programme. In the Honours program, officer cadets are provided an opportunity to explore individual subfields in greater depth, and to pursue independent research under the supervision of a faculty member.

## **Space Science**

The Space Science programme is offered by the Department of Physics and Space Science, which is a more specialized physics-based degree focused principally on topics related to space mission development and operations, space research and astronomy/astrophysics. The majority of courses in junior years of the programme are identical to those in the Physics programme. The programmes diverge in senior years, in which officer cadets are required to complete advanced space-related courses, including orbital mechanics and space concepts and applications. In the Honours programme, officer cadets take more specialized courses, including space communication and navigation and physics of the space environment. Officer cadets in the Honours programme work as a team to complete a capstone project designing a realistic space mission.

# The Faculty of Engineering

## **Aerospace Engineering**

Aerospace Engineering focuses on the design, control and operational performance of aircraft, spacecraft and airborne weapons technologies. Developing vehicles and systems for atmospheric and space environments, Aerospace Engineers have a thorough knowledge of aerodynamics, fluid dynamics, propulsion, aircraft performance, structures, materials, flight dynamics, control and navigation systems, and avionics. Working with highly interrelated systems, Aerospace Engineers must understand all aspects simultaneously, of the complicated project that the design of an air vehicle is. Venturing into state-of-the-art technologies, Aerospace Engineers are at the forefront of exploring all possibilities to allow people and machines to travel faster and farther, or indeed more slowly, securely, stealthily, lethally or effectively both in the atmosphere and into space.

## **Chemical Engineering**

The Chemical Engineering programme has a strong materials engineering component. Nuclear and environmental engineering are also included to reflect the spectrum of chemical engineering interests of value to the CAF and DND. In addition to the basic chemical engineering core, the programme emphasizes the areas of corrosion, fuel cells, batteries, alloys, polymers, ceramics, composite development, explosives, combustion processes, nuclear energy applications and environmental stewardship. All of these areas highlight the unique nature of the chemical engineering programme at RMC.

## **Civil Engineering**

Civil Engineering courses include strength of materials, structural theory, concrete and steel design for bridges and buildings, soil mechanics, foundation and earthworks analysis and design, highway design, environmental and water resources engineering, engineering survey (Geomatics), and many other topics of relevance to Military Engineers. At the end of third year, officer cadets complete a two week survey school followed by travel to a Canadian Forces Base for a one week field school, further developing their knowledge of data collection, report writing and presentation skills, and project management abilities.

## **Computer Engineering**

Computer Engineers work with and understand both the hardware and software of computer systems. They fuse together aspects of electronics and applied computer science. The Computer Engineering programme at RMC offers elective concentrations that allow officer cadets to focus on the software engineering aspects of computer system design or on the electronic systems engineering aspects. Software engineering is the application of computer science to the design of new computer based products and systems. The Electronic Systems Engineering concentration focuses more on the computer hardware aspects of system design, studying the application of electrical and electronic systems engineering to the design of computer based systems and the embedding of computer systems in more complex products.

## **Electrical Engineering**

This discipline involves knowledge of the theories and principles of mathematics, science, electronics and engineering to develop a deeper understanding of analog, digital, control and electromagnetic/optical design principles. Officer cadets studying within the Electrical Engineering programme will take courses that build their knowledge within one of the following streams: Power and Control, or Communications and Electronics.

Electrical Engineers use their knowledge of electrical and electronic system design to engineer some of the most complex systems of our time. They are involved in the development of smart grids for delivery of reliable energy, advanced telecommunications networks, development of electric vehicles and robotics.

## **Mechanical Engineering**

Mechanical Engineering is one of the oldest and broadest of the engineering fields. Mechanical Engineers are innovators, focusing on the analysis, design, manufacturing and maintenance of items of all size which extend humans physical abilities, from small nano-machines to large manufacturing plants. With a solid understanding of mechanics, kinematics, thermodynamics, fluid mechanics, materials science, control systems, and energy, Mechanical Engineers possess exceptional problem solving skills which are required to tackle today's most challenging technical problems. Mechanical Engineers work in a team environment, with solid leadership and communications skills, in all levels of industry, public service and military organizations.



# Academic Prerequisites by Province

- Candidates intending to pursue their studies in French should have completed secondary school level courses in French equivalent to the course in English required above.
- Candidates who do not meet the prerequisite course requirements but have high academic standing may be considered for admission.
- Effective courses taken to complete a secondary school programme should be chosen carefully to strengthen academic preparation.
- Required course codes may vary in response to changes in provincial education course coding system.
- RMC reserves the right to reject candidates on the basis of their overall academic record, even where entrance requirements have been met. Normally, a candidate who has been required to withdraw from another university or college for academic reasons will not be considered for admission until a full academic year has elapsed.

	ARTS	SCIENCE	ENGINEERING
<b>Alberta</b>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-2; or Mathematics 30-1</li> </ul>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-1, or Mathematics 31; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Mathematics 30-1, or Mathematics 31 (whichever one has not already been taken)</li> <li>Chemistry 30</li> <li>Physics 30</li> <li>Biology 30</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-1; &amp;</li> <li>Mathematics 31; &amp;</li> <li>Chemistry 30; &amp;</li> <li>Physics 30</li> </ul>
<b>British Columbia</b>	<ul style="list-style-type: none"> <li>English 12; &amp;</li> <li>Pre-Calculus 11; or Pre-Calculus 12</li> </ul>	<ul style="list-style-type: none"> <li>English 12; &amp;</li> <li>Calculus 12; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Mathematics 12</li> <li>Chemistry 12</li> <li>Physics 12</li> <li>Biology 12</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 12; &amp;</li> <li>Calculus 12, or Mathematics 12; &amp;</li> <li>Chemistry 12; &amp;</li> <li>Physics 12</li> </ul>
<b>Manitoba</b>	<ul style="list-style-type: none"> <li>English 40S or French 40S; &amp;</li> <li>Pre-Calculus 30S; or Pre-Calculus 40S</li> </ul>	<ul style="list-style-type: none"> <li>English 40S, or French 40S; &amp;</li> <li>Pre-Calculus Mathematics 40S; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Applied Mathematics 40S</li> <li>Chemistry 40S</li> <li>Physics 40S</li> <li>Biology 40S</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 40S, or French 40S; &amp;</li> <li>Pre-Calculus Mathematics 40S; &amp;</li> <li>Chemistry 40S; &amp;</li> <li>Physics 40S</li> </ul>
<b>New Brunswick (English sector)</b>	<ul style="list-style-type: none"> <li>English 122 or French 10411; &amp;</li> <li>Pre-Calculus 110</li> </ul>	<ul style="list-style-type: none"> <li>English 122, or French 10411; &amp;</li> <li>Pre-Calculus A 120; &amp;</li> <li>Pre-Calculus B 120; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Physics 122</li> <li>Chemistry 122</li> <li>Biology 122</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 122, or French 10411; &amp;</li> <li>Pre-Calculus A 120; &amp;</li> <li>Pre-Calculus B 120; &amp;</li> <li>Physics 122; &amp;</li> <li>Chemistry 122</li> </ul>
<b>New Brunswick (French sector)</b>	<ul style="list-style-type: none"> <li>French 10411 or English 122; &amp;</li> <li>Mathematics 30331B &amp; 30321B, or Mathematics 30331C</li> </ul>	<ul style="list-style-type: none"> <li>French 10411, or English 122; &amp;</li> <li>Mathematics 30331C, or Mathematics 30411B, or Mathematics 30411C; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Mathematics 30331C/30411B/30411C (whichever one has not already been taken)</li> <li>Physics 51411</li> <li>Chemistry 52411</li> <li>Biology 53411</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>French 10411, or English 122; &amp;</li> <li>Mathematics 30411C; &amp;</li> <li>Mathematics 30331C, or Mathematics 30411B; &amp;</li> <li>Physics 51411, or Physics 51421; &amp;</li> <li>Chemistry 52411</li> </ul>
<b>Newfoundland and Labrador</b>	<ul style="list-style-type: none"> <li>Any English or French (Level 3); &amp;</li> <li>Mathematics 2200</li> </ul>	<ul style="list-style-type: none"> <li>Any English, or French (Level 3); &amp;</li> <li>Mathematics 3205/3200, or Mathematics 3207/3208; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Math 3205/3200, or Mathematics 3207/3208 (whichever one has not already been taken)</li> <li>Chemistry 3202</li> <li>Physics 3204</li> <li>Biology 3201</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Any English or French (Level 3); &amp;</li> <li>Mathematics 3207/3208; &amp;</li> <li>Mathematics 3205; &amp;</li> <li>Chemistry 3202; &amp;</li> <li>Physics 3204</li> </ul>

<b>Northwest Territories</b>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-2, or Mathematics 30-1</li> </ul>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-1, or Mathematics 31; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Mathematics 30-1, or Mathematics 31 (whichever one has not already been taken)</li> <li>Chemistry 30</li> <li>Physics 30</li> <li>Biology 30</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-1; &amp;</li> <li>Mathematics 31; &amp;</li> <li>Chemistry 30; &amp;</li> <li>Physics 30</li> </ul>
<b>Nova Scotia</b>	<ul style="list-style-type: none"> <li>English 12 or French 12; &amp;</li> <li>Pre-Calculus 11, or Pre-Calculus 12, or Academic Mathematics 11</li> </ul>	<ul style="list-style-type: none"> <li>English 12, or French 12; &amp;</li> <li>Pre-Calculus 11; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Pre-Calculus 12</li> <li>Chemistry 12</li> <li>Physics 12</li> <li>Biology 12</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 12, or French 12; &amp;</li> <li>Pre-Calculus 11; &amp;</li> <li>Pre-Calculus 12, or Calculus 12; &amp;</li> <li>Chemistry 12; &amp;</li> <li>Physics 12</li> </ul>
<b>Nunavut</b>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-2, or Mathematics 30-1</li> </ul>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-1, or Mathematics 31; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Mathematics 30-1, or Mathematics 31 (whichever one has not already been taken)</li> <li>Chemistry 30</li> <li>Physics 30</li> <li>Biology 30</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 30-1; &amp;</li> <li>Mathematics 30-1; &amp;</li> <li>Mathematics 31; &amp;</li> <li>Chemistry 30; &amp;</li> <li>Physics 30</li> </ul>
<b>Ontario</b>	<ul style="list-style-type: none"> <li>English ENG4U or French FRE4U; &amp;</li> <li>Functions MCF3M, or Functions and Relations MCR3U, or Advanced Functions MHF4U</li> </ul>	<ul style="list-style-type: none"> <li>English ENG4U, or French FRE4U; &amp;</li> <li>Advanced Functions MHF4U, or Calculus and Vectors MCV4U</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Advanced Functions MHF4U, or Calculus and Vectors MCV4U, (whichever one has not already been taken)</li> <li>Chemistry SCH4U</li> <li>Physics SPH4U</li> <li>Biology SBH4U</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English ENG4U, or French FRE4U; &amp;</li> <li>Advanced Functions MHF4U; &amp;</li> <li>Calculus and Vectors MCV4U; &amp;</li> <li>Chemistry SCH4U; &amp;</li> <li>Physics SPH4U</li> </ul>
<b>Prince Edward Island</b>	<ul style="list-style-type: none"> <li>English 621, or French 621; &amp;</li> <li>Mathematics 521, or Mathematics 611, or Mathematics 621A, or Mathematics 621B</li> </ul>	<ul style="list-style-type: none"> <li>English 621, or French 621; &amp;</li> <li>Mathematics 611, or Mathematics 621A, or Mathematics 621B; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Mathematics 611/621A/621B (whichever one has not already been taken)</li> <li>Chemistry 621</li> <li>Physics 621</li> <li>Biology 621</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 621, or French 621; &amp;</li> <li>Mathematics 611; &amp;</li> <li>Mathematics 611B; &amp;</li> <li>Chemistry 621; &amp;</li> <li>Physics 621</li> </ul>
<b>Quebec</b>	<ul style="list-style-type: none"> <li>English (French)- 2 core courses; &amp;</li> <li>One of the following:               <ol style="list-style-type: none"> <li>CEGEP Calculus or Algebra, or:</li> <li>Sec V Mathematics Technical &amp; Scientific Option (064506 or 564506); or</li> <li>Sec V Mathematics Science Option (065506 or 565506); or</li> <li>(Prior to 2010) Sec V Mathematics 536 or 526</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English (French) - 2 Core courses; &amp;</li> <li>Mathematics (two of the following):               <ol style="list-style-type: none"> <li>201-GGF-05</li> <li>201-NYA-05</li> <li>201-NYC-05</li> <li>201-NYB-05</li> </ol> </li> <li>And any two of the following:               <ol style="list-style-type: none"> <li>An additional Math not previously taken</li> <li>Chemistry 202-NYA-05</li> <li>Physics 203-NYA-05</li> <li>Biology 101-NYA-05</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English (French) - 2 Core courses; &amp;</li> <li>Mathematics (two of the following):               <ol style="list-style-type: none"> <li>201-GGF-05</li> <li>201-NYA-05</li> <li>201-NYC-05</li> <li>201-NYB-05</li> </ol> </li> <li>Chemistry 202-NYA-05; &amp;</li> <li>Physics 203-NYA-05</li> </ul>
<b>Saskatchewan</b>	<ul style="list-style-type: none"> <li>English 30A; &amp;</li> <li>English 30B; &amp;</li> <li>Foundations of Mathematics 20, or Foundations of Mathematics 30, or Pre-Calculus 30</li> </ul>	<ul style="list-style-type: none"> <li>English 30A; &amp;</li> <li>English 30B; &amp;</li> <li>Pre-Calculus 30 (or Mathematics 30A and Mathematics 30B); &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Calculus 30</li> <li>Chemistry 30</li> <li>Physics 30</li> <li>Biology 30</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 30A; &amp;</li> <li>English 30B; &amp;</li> <li>Pre-Calculus 30 (or Mathematics 30A and Mathematics 30B); &amp;</li> <li>Calculus 30; &amp;</li> <li>Chemistry 30; &amp;</li> <li>Physics 30</li> </ul>
<b>Yukon</b>	<ul style="list-style-type: none"> <li>English 12; &amp;</li> <li>Pre-Calculus 11 or Pre-Calculus 12</li> </ul>	<ul style="list-style-type: none"> <li>English 12; &amp;</li> <li>Calculus 12; &amp;</li> <li>Any two of the following:               <ol style="list-style-type: none"> <li>Mathematics 12</li> <li>Chemistry 12</li> <li>Physics 12</li> <li>Biology 12</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>English 12; &amp;</li> <li>Calculus 12, or Mathematics 12; &amp;</li> <li>Chemistry 12; &amp;</li> <li>Physics 12</li> </ul>