



## SCIENCE

Skills for life

The **Science** Profile is a program designed for students who wish to specialize in science and mathematics. It prepares students for entry into all science-related, pre-university CEGEP programs, as well as many technical career programs.

Students will acquire content knowledge in chemistry, biology and physics, and develop lab competencies, critical thinking, and analytical skills. Students will be involved in problem solving, experimentation, data processing and contextual analysis. In the future, students in this program will have the opportunity to enter professions in fields such as biomedical research, medicine, nursing, environmental science, engineering, biotechnology, computer science, architecture and veterinary medicine.



### SKILL SETS

- Advanced lab skills
- Critical thinking
- Scientific literacy
- Mathematical analysis
- Self-directed learning
- Clear oral and written communication
- Mastery of language of instruction (French-English)
- In-depth research
- Project-based learning
- Time management
- Team dynamics
- Volunteerism and community involvement

### PRE-UNIVERSITY CEGEP PROGRAMS

- Pure and Applied Sciences
- Health Sciences
- Environmental Sciences
- Arts and Sciences

### CAREER-TECHNICAL CEGEP PROGRAMS

- Radiation Oncology
- Industrial Electronics
- Architectural Technology
- Computer Engineering Technology
- Biomedical Laboratory Technology
- Pharmaceutical Production Technology



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	Sec. 3	Sec. 4	Sec. 5
<b>OPTIONS</b>	Biology & Introduction to Advanced Lab Work	Environmental Sciences	Chemistry
<b>OPTIONS</b>			Physics
<b>OPTIONS</b>			
<b>MISCELLANEOUS</b> (volunteering, internships, etc.) <b>Mandatory</b>	Striation Method Activity Ecosystem Studies Overnight excursion to Granby Zoo Guest Speakers and Workshops	McGill Museum of Science Regional Science Fair Visit Guest Speakers and Workshops	Planetarium Catapult Project Sustainability Case Competition Science Fair Project Guest Speakers and Workshops
<b>EXTRACURRICULAR</b> <b>Optional</b>	Biology Club Brain Bee Défi génie inventif Meeting with an Astronaut	Biology Club Brain Bee Défi génie inventif Meeting with an Astronaut Youreka	Biology Club Brain Bee Défi génie inventif Meeting with an Astronaut Youreka Défi génie inventif Competition

### Biology & Introduction to Advanced Lab Work

This course covers basic general biology principles such as ecology and evolution, viruses, bacteria, protists, fungi, immunology, genetic engineering and biotechnology. Students learn how to use a Tirrill burner and are given the opportunity to practice lab skills such as micropipetting, electrophoresis and sterile techniques.

### Environmental Science

A Ministry-required course for entry into science-based CEGEP programs. Also a prerequisite for entry into Secondary 5 Physics and Chemistry. Areas of study include biotechnology, ecological footprint, ecotoxicology, Mendelian genetics, physical science and stoichiometry, environmental contamination, and eutrophication.

### Chemistry

A course organized around five main topics: gases, thermochemistry, reaction rates, equilibrium, and acids and bases. Enrichment topics include limiting reagents, electrochemistry and the use of significant figures.

### Physics

A course consisting of two modules comprising a total of six topics. The Optics module covers the reflection and refraction of light, while the Mechanics module consists of the analysis of static forces, kinematics, dynamics and mechanical energy. Enrichment includes topics in astrophysics and biophysics.