



2 YEARS

[www.dawsoncollege.qc.ca/pure-applied](http://www.dawsoncollege.qc.ca/pure-applied)

### If you would like to:

- ☐ Be well prepared for university studies in areas such as engineering, physics, mathematics, or computer science
- ☐ Explore advanced ideas in mathematics, physics, chemistry and biology
- ☐ Understand the natural world
- ☐ Use logical reasoning to solve problems
- ☐ Recognize how scientific knowledge is constructed
- ☐ Have priority for Integrative Project sections that relate to physics, mathematics and engineering
- ☐ Obtain a DEC in Science
- ☐ Benefit from a maximum flexibility in course selection

Then the Pure and Applied Science Profile could be for you.

Explore, research and discover what interests you most in the vast world of science. The Pure and Applied Science Profile offers exposure to many disciplines in the first year. In the second year, students can go deeper into topics of particular interest, such as ecology and the environment, engineering, and computer science. The Integrative Project is another opportunity to choose what you wish to learn.

### What will you learn?

- To think like a scientist
- To employ a scientific method
- To read and analyze scientific publications
- To choose and appropriately use digital technologies to support learning, to present content, to model, to simulate and to program
- To design and implement a scientific project
- To collect, analyze and communicate experimental data
- To solve complex problems

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The emphasis on collaboration and the importance of cross-disciplinary research are values taught here that will serve me well in the future as a scientist.

— Benjamin C.

### Where will this program lead you?

Graduates of this profile are well prepared for a wide variety of university studies, such as engineering, physics, mathematics, or computer science.

### What do you need to apply?

- Secondary V Chemistry
- Secondary V Physics
- Secondary V Mathematics: Technical & Scientific option (TS) or Science option (SN)

### Application Deadline

March 1 • November 1

### Selection of Science Option Courses

Pure and Applied Science students will choose two option courses from this list. Please note that not all courses are offered every year.

- Human Anatomy and Physiology
- Field and Community Ecology
- Biotechnology
- Topics in Biology
- Multivariable Calculus
- Discrete Mathematics
- Linear Algebra 2
- Topics in Mathematics
- Organic Chemistry
- Environmental Chemistry
- Forensic Chemistry
- Organic Chemistry 2
- Topics in Chemistry
- Astrophysics
- Engineering Physics
- Medical Physics
- Topics in Physics
- Physical Geology
- Topics in Geology
- Programming in Science 2
- Programming for Data Science
- Algorithms: Real World Applications
- Topics in Computer Science
- Applied Mathematics in Science
- Topics in Science



### LIST OF SPECIFIC COURSES

All students must also take General Education courses such as English, French, Humanities and Physical Education, in addition to complementary courses.

Year 1 • Term 1	Year 2 • Term 3
<ul style="list-style-type: none"><li>▪ Calculus I</li><li>▪ Mechanics</li><li>▪ Programming in Science</li><li>▪ Ecology and Evolution</li></ul>	<ul style="list-style-type: none"><li>▪ Probability and Statistics</li><li>▪ Waves and Modern Physics</li><li>▪ Choice (2): Linear Algebra, Cellular Biology, Chemistry of Solutions, Option Course</li></ul>
Year 1 • Term 2	Year 2 • Term 4
<ul style="list-style-type: none"><li>▪ General Chemistry</li><li>▪ Calculus II</li><li>▪ Electricity and Magnetism</li></ul>	<ul style="list-style-type: none"><li>▪ Choice (2): Linear Algebra, Cellular Biology, Chemistry of Solutions, Option Course</li><li>▪ Choice (1): Option Course</li><li>▪ Integrative Project</li></ul>