INUKSHUK ACADEMY

Course code: **Chemistry (SCH3U)**
Credit: **1.0** Total Hours: **110 hours**
Prerequisite: **Science, Grade 10, Academic**
Curriculum basis**: Ontario Curriculum, Grades 11–12: Science (Revised 2008)**
Last Update: **Inukshuk Academy 2026**

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Course Description

This course enables students to deepen their understanding of chemistry through the study of the properties of chemicals and chemical bonds; chemical reactions and quantitative relationships in those reactions; solutions and solubility; and atmospheric chemistry and the behaviour of gases. Students will further develop their analytical skills and investigate the qualitative and quantitative properties of matter, as well as the impact of some common chemical reactions on society and the environment.

1. Course Rationale

Chemistry provides the scientific foundation for understanding matter, chemical interactions, and the processes that influence the natural world and modern technology. SCH3U strengthens students' ability to investigate chemical systems, analyze scientific evidence, and apply inquiry-based reasoning to real-world problems involving substances, reactions, energy, and the environment.

Through scientific investigation, laboratory activities, research, and problem solving, students:

- Develop a deeper understanding of chemical bonding, chemical reactions, quantitative relationships, solutions, gases, and atmospheric chemistry;
- Explore the relationships between atomic structure, chemical properties, and chemical behaviour;
- Refine laboratory, analytical, mathematical, and scientific investigation skills essential for senior science and STEM disciplines;
- Learn to interpret chemical data, solve quantitative problems, evaluate scientific evidence, and communicate scientific reasoning clearly;
- Recognize the impact of chemistry on health, industry, sustainability, environmental stewardship, and technological innovation.

The course fosters scientific literacy, critical thinking, quantitative reasoning, and inquiry skills essential for success in university-level programs and careers in chemistry, engineering, health sciences, environmental science, biotechnology, medicine, and related scientific fields.

2. Overall Curriculum Expectations

The Ontario Curriculum organizes SCH3U into five major strands. The following expectations are paraphrased for clarity and alignment with Inukshuk Academy's course design.

a. Scientific Investigation Skills and Career Exploration

Students will:

- Demonstrate scientific investigation skills related to inquiry, research, experimentation, laboratory safety, and communication;

- Analyze chemical data using appropriate scientific methods, calculations, and laboratory procedures;
- Evaluate scientific evidence and communicate conclusions using proper chemical terminology, formulas, equations, and conventions;
- Explore careers related to chemistry, health sciences, environmental science, engineering, and biotechnology.

b. Matter, Chemical Trends, and Chemical Bonding

Students will:

- Analyze the properties and uses of chemical substances and their effects on human health and the environment;
- Investigate physical and chemical properties of elements and compounds using laboratory and modelling techniques;
- Demonstrate an understanding of atomic structure, periodic trends, and chemical bonding;
- Explain how bonding and molecular structure influence the properties and behaviour of substances.

c. Chemical Reactions

Students will:

- Analyze chemical reactions used in industry, technology, everyday life, and environmental processes;
- Investigate different types of chemical reactions through laboratory inquiry and problem solving;
- Predict products of chemical reactions and balance chemical equations;
- Evaluate the environmental and societal impacts of chemical reactions and related technologies.

d. Quantities in Chemical Reactions

Students will:

- Investigate quantitative relationships in chemical reactions using the mole concept and stoichiometry;
- Solve problems involving molar mass, balanced equations, chemical quantities, and reaction efficiency;
- Analyze the importance of quantitative accuracy in industrial and environmental chemical processes;
- Demonstrate an understanding of the relationships between chemical quantities and reaction outcomes.

e. Solutions and Solubility

Students will:

- Investigate qualitative and quantitative properties of solutions and solubility;
- Analyze factors affecting concentration, solubility, dilution, and solution behaviour;
- Examine water quality, water pollution, and environmental issues related to solutions;
- Demonstrate an understanding of the properties of aqueous solutions and their importance in biological and environmental systems.

f. Gases and Atmospheric Chemistry

Students will:

- Investigate gas laws and the behaviour of gases through inquiry, calculations, and experimentation;
- Analyze relationships among pressure, temperature, volume, and amount of gas;
- Examine the effects of human activities and technologies on air quality and the atmosphere;
- Demonstrate an understanding of atmospheric chemistry, climate-related issues, and strategies for environmental sustainability.

3. Learning Goals for Students

By the end of SCH3U, students will be able to:

- Analyze chemical systems using scientific inquiry, research, and evidence-based reasoning;
- Conduct investigations using proper laboratory safety, experimental design, observation, measurement, and data analysis;
- Explain atomic structure, periodic trends, chemical bonding, chemical reactions, stoichiometry, solutions, gases, and atmospheric chemistry;
- Interpret chemical data using formulas, equations, models, graphs, calculations, and scientific terminology;
- Evaluate the impact of chemistry and chemical technologies on health, society, industry, sustainability, and the environment;
- Communicate scientific reasoning clearly using appropriate chemical vocabulary, balanced equations, lab reports, diagrams, and research formats.

Course Structure and Instructional Units

Unit	Description	Hours
Unit 0: Scientific Investigation Skills and Career Exploration	Lab safety, WHMIS, inquiry skills, research methods, chemical careers, scientific communication	5

Unit 1: Matter, Chemical Trends, and Chemical Bonding	Atomic structure, periodic trends, chemical properties, ionic and molecular bonding, chemical safety and environmental impact	21
Unit 2: Chemical Reactions	Types of chemical reactions, word and balanced chemical equations, reaction prediction, societal and environmental applications	22
Unit 3: Quantities in Chemical Reactions	Mole concept, molar mass, stoichiometry, limiting reactants, percent yield, reaction efficiency	21
Unit 4: Solutions and Solubility	Solution properties, concentration, dilution, solubility, acids and bases, water quality and pollution	23
Unit 5: Gases and Atmospheric Chemistry	Gas laws, pressure-volume-temperature relationships, atmospheric chemistry, air quality, pollution, climate impacts	20
Culminating Task	Chemical investigation, research assignment, or applied inquiry project	5
Final Exam	Proctored examination	3
	Total	**120**

4. Course Structure, Unit Overview and Instructional Plan

1. Unit 0: Scientific Investigation Skills and Career Exploration

Approx. Hours: 5

a. Unit Overview

This introductory unit strengthens the scientific inquiry, laboratory, and research skills students require for success in Grade 11 Chemistry. Students review laboratory safety procedures, WHMIS symbols, scientific communication, measurement, and experimental design while developing skills in observation, data collection, analysis, and chemical investigation. Emphasis is placed on safe laboratory practices and career pathways related to chemistry, health sciences, engineering, and environmental science.

b. Key Learning Goals

Students will:

- Demonstrate safe laboratory practices and proper handling of chemicals and scientific equipment;
- Apply scientific investigation skills including observation, measurement, data collection, and analysis;
- Use appropriate chemical terminology, formulas, and scientific communication formats;
- Identify careers related to chemistry, engineering, environmental science, and health sciences;
- Interpret scientific information using graphs, diagrams, models, and laboratory data.

c. Sample Learning and Assessment Activities

- Laboratory safety investigations and WHMIS activities;
- Scientific method and experimental design tasks;
- Chemical measurement and data analysis exercises;
- Career research and chemistry application presentations;
- Diagnostic quiz, lab safety tasks, and inquiry assignment.

2. Unit 1: Matter, Chemical Trends, and Chemical Bonding

Approx. Hours: 21

a. Unit Overview

In this unit, students investigate the structure and properties of matter and explore how atomic structure influences chemical behaviour. Students examine periodic trends, physical and chemical properties of elements, ionic and molecular compounds, and chemical bonding models.

Students also analyze the effects of commonly used chemical substances on human health and the environment and investigate how proper chemical use and disposal contribute to sustainability and environmental protection.

b. Key Learning Goals

Students will:

- Describe atomic structure and explain periodic trends;
- Compare physical and chemical properties of elements and compounds;
- Explain ionic, covalent, and metallic bonding;
- Use diagrams and models to represent chemical structures and compounds;
- Evaluate the environmental and health impacts of chemical substances.

c. Sample Learning and Assessment Activities

- Periodic table investigations and trend analysis;
- Chemical bonding model construction activities;
- Ionic and molecular compound comparisons;
- Chemical safety and environmental impact case studies;
- Bonding assignments, laboratory investigations, quizzes, and unit test.

3. Unit 2: Chemical Reactions

Approx. Hours: 22

a. Unit Overview

Students investigate the predictable nature of chemical reactions and the different ways substances interact chemically. Topics include synthesis, decomposition, single displacement, double displacement, and combustion reactions, as well as balancing chemical equations and predicting reaction products.

Students also examine the societal and environmental impacts of chemical reactions in areas such as industry, energy production, transportation, and environmental systems.

b. Key Learning Goals

Students will:

- Identify and classify different types of chemical reactions;
- Predict products and balance chemical equations accurately;
- Analyze evidence of chemical change through laboratory inquiry;
- Investigate applications of chemical reactions in industry and everyday life;
- Evaluate environmental and societal impacts of chemical processes.

c. Sample Learning and Assessment Activities

- Reaction type laboratory investigations;
- Chemical equation balancing activities;
- Reaction prediction problem-solving tasks;
- Combustion and environmental chemistry case studies;
- Reaction assignments, laboratory reports, quizzes, and unit test.

4. Unit 3: Quantities in Chemical Reactions

Approx. Hours: 21

a. Unit Overview

This unit focuses on quantitative relationships in chemical reactions using the mole concept and stoichiometry. Students investigate molar mass, balanced chemical equations, mole conversions, limiting reactants, and percent yield calculations.

Students also examine the importance of quantitative accuracy in industrial chemistry, environmental systems, and chemical manufacturing processes.

b. Key Learning Goals

Students will:

- Explain and apply the mole concept in chemical calculations;
- Perform stoichiometric calculations using balanced equations;
- Analyze limiting reactants and percent yield;

- Investigate quantitative relationships in chemical reactions;
- Evaluate the importance of accuracy in chemical and industrial processes.

c. Sample Learning and Assessment Activities

- Mole conversion and stoichiometry problem sets;
- Limiting reactant laboratory investigations;
- Quantitative reaction analysis activities;
- Industrial chemistry and efficiency case studies;
- Stoichiometry quizzes, calculation assignments, lab investigations, and unit test.

5. Unit 4: Solutions and Solubility

Approx. Hours: 23

a. Unit Overview

Students investigate the qualitative and quantitative properties of solutions and solubility. Topics include concentration, dilution, saturation, solubility curves, acids and bases, and the properties of aqueous solutions.

Students also analyze water quality, water pollution, and environmental issues related to drinking water and sustainable management of water resources.

b. Key Learning Goals

Students will:

- Describe properties of solutions and factors affecting solubility;
- Calculate concentration and dilution of solutions;
- Investigate acids, bases, and aqueous systems;
- Analyze issues related to water quality and pollution;
- Evaluate the importance of sustainable water management.

c. Sample Learning and Assessment Activities

- Solution preparation and dilution labs;
- Solubility and concentration investigations;
- Water quality and pollution case studies;
- Acid-base inquiry activities and simulations;
- Laboratory reports, concentration calculations, quizzes, and unit test.

6. Unit 5: Gases and Atmospheric Chemistry

Approx. Hours: 20

a. Unit Overview

In this unit, students investigate the properties and behaviour of gases using gas laws and quantitative analysis. Students examine relationships among pressure, temperature, volume, and amount of gas while applying Boyle's law, Charles's law, and the combined gas law.

Students also analyze atmospheric chemistry, air quality, pollution, climate change, and the impact of human activities on Earth's atmosphere.

b. Key Learning Goals

Students will:

- Describe and apply gas laws to explain gas behaviour;
- Solve quantitative problems involving pressure, temperature, and volume relationships;
- Investigate atmospheric chemistry and air quality issues;
- Analyze human impacts on the atmosphere and climate systems;
- Evaluate environmental strategies related to pollution reduction and sustainability.

c. Sample Learning and Assessment Activities

- Gas law simulations and laboratory investigations;
- Pressure-volume-temperature graphing activities;
- Atmospheric chemistry and climate change case studies;
- Air quality analysis and environmental research tasks;
- Gas law problem sets, lab reports, quizzes, and unit test.

Culminating Task

Approx. Hours: 5

Students complete a chemistry investigation, research assignment, or applied inquiry project integrating multiple strands of the course. The culminating task emphasizes scientific reasoning, quantitative analysis, inquiry, communication, and real-world chemical applications.

Final Exam

Approx. Hours: 3

Students complete a proctored final examination assessing conceptual understanding, scientific inquiry skills, chemical terminology, quantitative problem solving, data interpretation, and application across all course strands.

Instructional Approaches

Teaching and learning in SCH3U at Inukshuk Academy, a variety of strategies designed to help students develop strong conceptual understanding, scientific inquiry skills, quantitative reasoning, and confidence in applying chemistry to real-world situations. Instruction is guided by the scientific investigation processes and inquiry-based principles outlined in the Ontario Curriculum.

a. Inquiry-Based and Experiential Learning

Students learn chemistry most effectively through investigation, experimentation, problem solving, and scientific inquiry. Lessons regularly include laboratory activities, demonstrations, simulations, research tasks, and real-world applications that reinforce chemical concepts.

Examples include:

- Investigating periodic trends and chemical bonding through modelling activities;
- Exploring chemical reactions through laboratory experiments and simulations;
- Analyzing quantitative relationships using stoichiometry and chemical calculations;
- Conducting investigations involving solutions, solubility, gases, and atmospheric chemistry.

b. Multiple Representations of Concepts

Students encounter chemical concepts through a combination of:

- Chemical formulas, equations, and molecular models;
- Laboratory observations and data analysis;
- Graphs, charts, and quantitative calculations;
- Written explanations and scientific reasoning;
- Simulations, animations, and visual representations.

This approach supports deeper conceptual understanding and helps students connect microscopic particle behaviour with observable chemical phenomena.

c. Use of Technology and Digital Tools

Digital tools are integrated throughout the course to enhance learning, scientific inquiry, and data analysis. Technology is used to:

- Conduct virtual laboratories and simulations;
- Analyze chemical data and reaction trends;
- Model atomic structure, bonding, and molecular geometry;
- Visualize chemical reactions and gas behaviour;
- Research current environmental and industrial chemistry issues;
- Create graphs, presentations, and scientific reports.

Examples include virtual lab platforms, interactive simulations, graphing software, spreadsheets, presentation software, and online scientific databases.

d. Collaborative Scientific Inquiry

Scientific learning is strengthened through collaboration. Students work in pairs or small groups to:

- Conduct laboratory investigations;
- Analyze and interpret chemical data;
- Discuss scientific concepts and environmental issues;
- Compare observations and problem-solving strategies;
- Complete inquiry and research activities collaboratively.

Collaborative learning supports communication skills, scientific reasoning, and confidence in chemical investigation.

e. Differentiated Instruction

Instruction is adapted to support a variety of learning styles, readiness levels, and interests. Strategies include:

- Scaffolded laboratory and inquiry activities;
- Enrichment and extension opportunities for advanced learners;
- Visual, hands-on, and interactive learning experiences;
- Guided practice and targeted support for students requiring additional assistance.

f. Explicit Teaching of Scientific Investigation Skills

Students receive direct instruction and ongoing support in the scientific investigation skills emphasized in the Ontario Curriculum, including:

- Scientific inquiry and experimentation;
- Observation, measurement, and data collection;
- Chemical calculations and quantitative analysis;
- Evaluating scientific evidence and sources;
- Connecting chemistry concepts to environmental and societal contexts;
- Communicating scientific reasoning clearly and accurately using appropriate chemical terminology, formulas, equations, and conventions.

Assessment and Evaluation

Assessment in SCH3U aligns with the principles of *Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools (2010)* [1]. Evaluation reflects students' most consistent achievement, with particular emphasis on recent evidence of learning.

Assessment serves three purposes:

a. Assessment for Learning (Diagnostic)

- Initial review of prerequisite science concepts, mathematics skills, and laboratory safety procedures;
- Diagnostic quizzes to identify gaps in chemistry knowledge and scientific reasoning;
- Informal observations, discussions, and concept checks;
- Readiness activities related to scientific inquiry, calculations, graphing, and data interpretation.

b. Assessment as Learning (Formative)

- Homework and chemistry problem-solving activities;
- Laboratory investigations with ongoing feedback;
- Reflection tasks and self-assessment activities;
- Collaborative inquiry and quantitative problem-solving exercises;
- Draft submissions of lab reports, research tasks, and scientific investigations.

c. Assessment of Learning (Summative)

- Unit tests on major chemistry strands;
- Laboratory reports and inquiry investigations;
- Research assignments and environmental chemistry case studies;
- Performance tasks involving real-world chemical applications;
- Culminating investigation or applied chemistry project;
- Final examination.

d. Achievement Chart Categories

Student achievement is evaluated across the four categories defined in the Ontario Curriculum for Science:

Knowledge & Understanding (30 percent)

Understanding of chemistry concepts, terminology, formulas, equations, periodic trends, chemical reactions, quantitative relationships, solutions, gases, and atmospheric chemistry.

Thinking & Inquiry (20 percent)

Use of scientific inquiry skills, critical thinking, chemical calculations, experimental design, problem solving, data analysis, and interpretation of scientific evidence.

Communication (20 percent)

Clarity and accuracy in scientific explanations, laboratory reports, chemical equations, diagrams, graphs, calculations, terminology, and communication of scientific reasoning.

Application (30 percent)

Application of chemistry knowledge and scientific skills to real-world contexts, environmental issues, industrial processes, health sciences, sustainability, and technological applications.

e. Final Evaluation (30 percent)

The final evaluation consists of:

1. Culminating Performance Task (10–15 percent)

A multi-step chemistry investigation, inquiry task, or applied research project. Examples may include:

- Investigating environmental impacts of chemical substances or reactions;
- Analyzing quantitative relationships in industrial or environmental chemistry;
- Designing and conducting a chemistry experiment or laboratory investigation;
- Researching atmospheric chemistry, water quality, or emerging chemical technologies.

2. Final Examination (15–20 percent)

A proctored examination assessing conceptual understanding, scientific inquiry skills, chemical calculations, laboratory analysis, data interpretation, and application of knowledge across all course strands.

3. Summary of Achievement Levels and Percentage Grade Ranges

Student achievement in secondary school courses is evaluated according to the Ontario Ministry of Education's four-level achievement scale. Each percentage grade corresponds to a level of achievement, as outlined below.

Percentage Grade Range	Achievement Level	Summary Description
80–100%	Level 4	Demonstrates a very high to outstanding level of achievement. Performance exceeds the provincial standard.
70–79%	Level 3	Demonstrates a high level of achievement. Performance meets the provincial standard. (This is the provincial expectation for student performance.)
60–69%	Level 2	Demonstrates a moderate level of achievement. Performance is below but approaching the provincial standard.

50–59%	Level 1	Demonstrates a passable level of achievement. Performance is significantly below the provincial standard. Further improvement is required for continued success.
Below 50%	Level 0	Insufficient achievement. Curriculum expectations have not been met. A credit will not be granted.

Academic Honesty and Integrity Policy

Inukshuk Academy is committed to fostering a learning environment based on honesty, responsibility, respect, and academic integrity. Students are expected to submit original work and properly acknowledge all sources of information, ideas, images, data, and wording used in assignments and investigations. Academic honesty is essential to maintaining fairness and trust in the evaluation process.

All submitted work must represent the student's own understanding and effort. Sources must be documented appropriately using MLA or APA citation style, as directed by the teacher. The use of generative artificial intelligence tools (e.g., ChatGPT) or other forms of external assistance must be disclosed and approved by the teacher. Undisclosed or inappropriate use of such tools may be treated as academic dishonesty.

Students may be asked to provide process work, rough drafts, notes, calculations, or planning documents to verify authorship and learning progress. If academic dishonesty occurs, the student and Principal may be notified, and consequences will be applied in accordance with school policy. Repeated incidents may result in escalating consequences.

1. Improper Citation

Improper citation occurs when a student fails to use appropriate citation formatting when referencing sources.

Grade Level	First Instance	Subsequent Instances
Grades 9–10	Warning and opportunity to resubmit	Warning and opportunity to resubmit
Grades 11–12	Warning and opportunity to resubmit	Opportunity to resubmit, maximum grade of 75%

2. Unaccredited Paraphrasing

Unaccredited paraphrasing occurs when a student rewrites another person's ideas without giving proper credit.

Grade Level	First Instance	Subsequent Instances
Grades 9–10	Warning and resubmission allowed	Resubmission allowed, maximum grade of 75%
Grades 11–12	Resubmission allowed, maximum grade of 75%	Resubmission allowed, maximum grade of 50%

3. Unaccredited Verbatim Copying

This occurs when a student copies sentences or passages directly from a source without proper citation.

Grade Level	First Instance	Subsequent Instances
Grades 9–10	Resubmission allowed, maximum grade of 75%	Resubmission allowed, maximum grade of 50%
Grades 11–12	Resubmission allowed, maximum grade of 50%	Grade of zero. No resubmission permitted

4. Full Plagiarism

Full plagiarism occurs when a student submits work entirely created by another person or source.

Grade Level	First Instance	Subsequent Instances
Grades 9–10	Grade of zero. No resubmission	Grade of zero. No resubmission
Grades 11–12	Grade of zero. No resubmission	Grade of zero and possible removal from the course

5. Missed Work

Students are responsible for reviewing lesson materials, completing missed assignments, and meeting established deadlines. Students are expected to remain informed about course expectations, due dates, and assessment requirements.

6. Homework Expectations

Students are expected to:

- Complete homework assignments, readings, and practice problems on time;
- Prepare for scheduled lessons, laboratories, discussions, and assessments;
- Participate actively and consistently in course activities and investigations.

If homework is repeatedly incomplete, the teacher may:

- Schedule a meeting with the student;
- Contact parents or guardians;
- Consult with school administration to support student success and progress.

Inclusion, accommodations & ELL supports

Inukshuk Academy is a small private school with limited accommodation resources. The school is committed to supporting students' access to learning within the scope of available staffing, programming, facilities, and course delivery structures.

Where possible, reasonable accommodations may be provided for students with documented learning needs, including limited support for Individual Education Plans (IEPs). Accommodations are considered on a case-by-case basis in consultation with the student, parents/guardians, teacher, and school administration.

Possible supports may include:

- Clear written instructions and success criteria;
- Guided notes, visual examples, and scaffolded practice;
- Reasonable extended time where appropriate;
- Preferential seating or reduced-distraction work space when available;
- Use of approved assistive technology;
- Check-ins with the teacher to support organization and progress;
- ELL support through simplified instructions, vocabulary support, and additional clarification.

Inukshuk Academy may not be able to provide specialized programming, intensive one-on-one support, modified curriculum expectations, or accommodations requiring resources beyond the school's capacity. Students requiring significant accommodations or specialized services may need additional external support.

Instructional Philosophy

Teaching and learning in SCH3U emphasize:

- Inquiry-based learning through laboratory investigations, demonstrations, and simulations;
- Conceptual understanding supported by real-world chemical applications;
- Quantitative reasoning and mathematical problem solving in chemistry;
- Multiple representations of concepts, including chemical equations, molecular models, graphs, diagrams, and laboratory observations;
- Collaboration through group investigations, discussions, and scientific inquiry activities;
- Technology integration in data collection, graphing, simulations, modelling, and analysis.

This approach ensures students engage deeply with chemistry concepts while developing transferable STEM skills, scientific literacy, and problem-solving abilities.

Course Learning Resources

Students will engage with a variety of chemistry learning materials, both digital and print, selected to support inquiry, experimentation, quantitative analysis, and conceptual development.

a. Primary Resources

- Teacher-created notes, examples, laboratory activities, and practice problem sets;
- Chemistry demonstrations, molecular models, and simulation tools;

- Laboratory equipment including glassware, balances, thermometers, pH indicators, and measurement tools;
- Ontario Curriculum, Grades 11–12: Science (2008) [2];
- Scientific calculators and chemistry reference materials.

b. Digital Tools and Platforms

- PhET Interactive Simulations (chemical bonding, reactions, gases, and solutions);
- Virtual chemistry laboratory platforms and simulations;
- Desmos, spreadsheets, or graphing software for calculations and data analysis;
- Online periodic tables, molecular modelling tools, and scientific databases;
- Presentation and collaboration tools for research and inquiry projects.

c. Supplementary Resources

- Scientific journals, articles, videos, and multimedia related to chemistry and environmental science;
- Stoichiometry practice sets, chemistry problem banks, and review materials;
- Real-world case studies involving industrial chemistry, atmospheric chemistry, water quality, sustainability, and emerging chemical technologies;
- Research materials related to environmental stewardship, biotechnology, and chemical innovations.

References

[1] Ministry of Education, "Growing Sucess," 2010. [Online]. Available: https://www.edu.gov.on.ca/eng/policyfunding/growsuccess.pdf.

[2] Ministry of Education, "Course Descriptions and Prerequisites," August 2024. [Online]. Available: https://www.dcp.edu.gov.on.ca/en/course-descriptions-and-prerequisites.