

SCIENCE

Science, Grade 9

(Academic)

SNC1D

This course enables students to understand essential concepts in biology, chemistry, earth and space science, and physics; to develop skills in the processes of scientific inquiry; and to relate science knowledge to technological, social, and environmental knowledge. Students will learn about scientific theories and pursue inquiries related to cell division and reproduction, atomic and molecular structures, properties of elements and compounds, the universe and space exploration, and the principles of static and current electricity.

Science, Grade 9

(Applied)

SNC1P

This course enables students to understand essential concepts in biology, chemistry, earth and space science, and physics; to develop practical skills in scientific investigation; and to apply their knowledge of science to everyday situations. Students will design and conduct investigations into practical problems and issues related to cell division and reproduction, the structure and properties of elements and compounds, astronomy and space exploration, and static and current electricity.

Science, Grade 9

(Locally Developed)

SNC1L

This course emphasizes reinforcing and strengthening, science-related knowledge and skills, including scientific inquiry, critical thinking and the relationship between science, society, and the environment, to prepare students for success in everyday life, in the workplace and in the Science Grade 11 Workplace Preparation course. Students explore a range of topics including science in daily life, properties of common materials, life-sustaining processes in simple and complex organisms, and electrical circuits. Students have the opportunity to extend mathematical and scientific process skills and to continue developing their skills in reading, writing, and oral language through relevant and practical science activities.

Science, Grade 10

(Academic)

SNC2D

This course enables students to develop a deeper understanding of concepts in biology, chemistry, earth and space science, and physics; to develop further skills in scientific inquiry; and to understand the interrelationships among science, technology, and the environment. Students will conduct investigations and understand scientific theories related to: ecology and the maintenance of ecosystems; chemical reactions, with particular attention to acid-base reactions; factors that influence weather systems; and motion.

Prerequisite: SNC1D (SNC1D with minimum 65% achievement strongly recommended.)

Science, Grade 10

(Applied)

SNC2P

This course enables students to develop a deeper understanding of concepts in biology, chemistry, earth and space science, and physics; to develop further their practical skills in scientific investigation; and to apply their knowledge of science to real world situations. Students will design and conduct investigations into everyday problems and issues related to ecological sustainability, chemical reactions, weather systems, and motion.

Prerequisite: SNC1D or SNC1P

SCIENCE

Science Grade 10

(Locally Developed)

SNC2L

This course emphasizes reinforcing and strengthening science-related knowledge and skills, including scientific inquiry, critical thinking, and the environmental impact of science and technology, to prepare students for success in everyday life, in the workplace and in the Science Grade 11 Workplace Preparation course. Students explore a range of topics including science in the media, interactions of common materials, interdependence of organisms in communities, and using electrical energy. Students have the opportunity to extend mathematical and scientific process skills and to continue developing their skills in reading, writing, and oral language through relevant and practical science activities.

*Please note: This course does **not** satisfy a **compulsory science** requirement.*

Prerequisite: SNC1D or SNC1P or SNC1L

Science, Grade 11

(Workplace Preparation)

SNC3E

This course provides students with the science-related knowledge and skills they need to help them make informed decisions in the workplace and in their personal lives. Students will explore a range of topics, including materials and safety; electrical circuits; micro-organisms; the human immune system and defences against disease; and the impact of technology on the environment. Emphasis is placed on relating these topics directly to students' experiences both in the world of work and in daily life.

Prerequisite: SNC1D or SNC1P

Science, Grade 12

(Workplace Preparation)

SNC4E

This course provides students with the science-related knowledge and skills they need to help them make informed decisions in the workplace and in their personal lives. Students will explore a range of topics, including chemistry at home and at work; communications technology; medical technology; horticulture, forestry, and gardening; and alternative life-sustaining environments. Emphasis is placed on relating these topics directly to students' experiences both in the world of work and in daily life.

Prerequisite: SNC3E

Biology

Biology, Grade 11

(University Preparation)

SBI3U

This course furthers students' understanding of the processes involved in biological systems. Students will study cellular functions, genetic continuity, internal systems and regulation, the diversity of living things, and the anatomy, growth, and functions of plants. The course focuses on the theoretical aspects of the topics under study, and helps students refine skills related to scientific investigation.

Prerequisite: SNC2D (SNC2D with minimum 65% achievement strongly recommended.)

Biology, Grade 11

(College Preparation)

SBI3C

This course focuses on the processes involved in biological systems. Students will learn concepts and theories as they conduct investigations in the areas of cellular biology, microbiology, animal anatomy and physiology, plant structure and physiology, and environmental science. Emphasis will be placed on the practical application of concepts and skills needed for further study in the various branches of life sciences and related fields.

Prerequisite: SNC2D or SNC2P

SCIENCE

Biology, Grade 12

(University Preparation)

SBI4U

This course provides students with the opportunity for in-depth study of the concepts and processes associated with biological systems. Students will study theory and conduct investigations in the areas of metabolic processes, molecular genetics, homeostasis, evolution, and population dynamics. Emphasis will be placed on achievement of the detailed knowledge and refined skills needed for further study in the various branches of life sciences and related fields.

Prerequisite: SBI3U; SCH3U strongly recommended (*SBI3U and SCH3U with minimum 70% achievement strongly recommended*)

Chemistry

Chemistry, Grade 11

(University Preparation)

SCH3U

This course focuses on the concepts and theories that form the basis of modern chemistry. Students will study the behaviours of solids, liquids, gases, and solutions; investigate changes and relationships in chemical systems; and explore how chemistry is used in developing new products and processes that affect our lives and our environment. Emphasis will also be placed on the importance of chemistry in other branches of science.

Prerequisite: SNC2D (*SNC2D with minimum 65% achievement strongly recommended.*)

Chemistry, Grade 12

(University Preparation)

SCH4U

This course enables students to deepen their understanding of chemistry through the study of organic chemistry, energy changes and rates of reaction, chemical equilibrium, atomic and molecular structure, and electrochemistry. Students will further develop problem-solving and laboratory skills as they investigate chemical processes, at the same time refining their ability to communicate scientific information. Emphasis will be placed on the importance of chemistry in daily life, and on evaluating the impact of chemical technology on the environment.

Prerequisite: SCH3U (*SCH3U with minimum 70% achievement strongly recommended.*)

Chemistry, Grade 12

(College Preparation)

SCH4C

This course introduces students to the concepts that form the basis of modern chemistry. Students will study qualitative analysis, quantitative relationships in chemical reactions, organic chemistry and electrochemistry, and chemistry as it relates to the quality of the environment. Students will employ a variety of laboratory techniques, develop skills of data collection and scientific analysis, and communicate scientific information using appropriate terminology. Emphasis will be placed on the role of chemistry in daily life and in the development of new technologies and products.

Prerequisite: SNC2P or SNC2D

SCIENCE

Physics

Physics, Grade 11

(University Preparation)

SPH3U

This course develops students' understanding of the basic concepts of physics. Students will study the laws of dynamics and explore different kinds of forces, the quantification and forms of energy (mechanical, sound, light, thermal, and electrical), and the way energy is transformed and transmitted. They will develop scientific-inquiry skills as they verify accepted laws and solve both assigned problems and those emerging from their investigations. Students will also analyze the interrelationships between physics and technology, and consider the impact of technological applications of physics on society and the environment.

Prerequisite: SNC2D (*SNC2D with minimum 65% achievement strongly recommended.*)

Physics, Grade 12

(University Preparation)

SPH4U

This course enables students to deepen their understanding of the concepts and theories of physics. Students will explore further the laws of dynamics and energy transformations, and will investigate electrical, gravitational, and magnetic fields; electromagnetic radiation; and the interface between energy and matter. They will further develop inquiry skills, learning, for example, how the interpretation of experimental data can provide indirect evidence to support the development of a scientific model. Students will also consider the impact on society and the environment of technological applications of physics.

Prerequisite: SPH3U (*SPH3U with minimum 70% achievement strongly recommended.*)

Physics, Grade 12

(College Preparation)

SPH4C

This course develops students' understanding of the basic concepts of physics. Students will explore these concepts as they relate to mechanical, electrical, fluid (hydraulic and pneumatic), and communications systems, as well as to the operation of commonly used tools and equipment. They will develop scientific-inquiry skills as they verify accepted laws of physics and solve both assigned problems and those emerging from their investigations. Students will also consider the impact of technological applications of physics on society and the environment.

Prerequisite: SNC2D or SNC2P

Earth and Space Science

Earth and Space Science, Grade 12

(University Preparation)

SES4U

This course focuses on the basic concepts and theories of Earth and space science, and their relevance to everyday life. Students will first study the origin and evolution of the universe, and then explore the materials and the internal and surficial processes of the Earth as they study the planet's history. The course draws on biology, chemistry, mathematics, and physics in its consideration of geological processes that can be observed directly or inferred from geological evidence.

Prerequisite: SNC2D