

SCIENCE 2018-2019

| Grade | Course | Type | Prerequisite | Course Details |
|--------------|-------------------|-------------|---------------------|--|
| 9 | SNC1DI Science | Academic | | A detailed introduction to the branches of science such as chemistry, biology, physics, and Earth and space science. Students develop an understanding of the properties of common elements and compounds. They assess the impact of human activities on the sustainability of ecosystems and investigate the properties of static and current electricity. Finally, they explore beyond Earth into the wonders of the night sky. Consistently achieving at a Level 3 or above in grade 8 Science is highly recommended. Strong collaboration, organization, and initiative skills benefit the grade 9 academic student. |
| 9 | SNC1DW | Enhanced | | Application and acceptance into the PHS Enhanced Program. |
| 9 | SNC1PI Science | Applied | | A simplified introduction to the branches of science such as chemistry, physics, biology and Earth and space science. Students begin to understand the properties of elements and simple compounds used in our daily lives. They learn about the characteristics of terrestrial and aquatic ecosystems and demonstrate the properties of static and current electricity. Finally, students learn about the properties of celestial objects in the Universe. |

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|--------------|-------------------|-------------|---------------------|--|
| 10 | SNC2DI Science | Academic | SNC1DI or SNC1PI | Students broaden their study in the branches of science that include biology, chemistry, Earth and space science, and physics. They develop an understanding of cells, cell division, cell specialization and the organization of systems in animals. They investigate different types of compounds through chemical reactions and begin to explore natural and human factors that influence Earth's climate. Finally, students develop an understanding of various characteristics and properties of light. Consistent demonstrations at a level 3 or above in SNC 1DI or SNC 1DW plus excellent Learning Skills and Work Habits are highly recommended. |
| 10 | SNC2DW | Enhanced | SNC1DW | If coming from the academic stream, recommendation from your SNC 1DI science teacher is required and an application may need to be completed. |
| 10 | SNC2PI Science | Applied | SNC1DI or SNC1PI | Students continue with a simplified overview in the areas of biology, chemistry, Earth and space science and physics. Students begin to develop an understanding of the organization of cells, tissues, organs and systems in animals. They investigate the characteristics of simple chemical reactions and begin to understand various natural and human factors that contribute to global warming. Finally, students analyse how properties of light and colour are applied in technology. This course is designed for the successful SNC 1PI student or for the student who struggled through SNC 1DI. Feel comfortable asking your grade 9 science teacher if this course is for you. |

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|--------------|---------------------|-------------|---------------------|---|
| 11 | SBI3CI Biology | College | SNC2DI or SNC2PI | This course focuses on the processes involved in biological systems such as cellular biology, microbiology, genetics, anatomy of mammals and how plants play a role in the natural environment. A minimum of 60 % in either of the prerequisites plus good Learning Skills and Work Habits are highly recommended. |
| 11 | SBI3UI Biology | University | SNC2DI | Students will study theory and conduct investigations in the areas of biodiversity, evolution, genetic processes, the structure and function of animals and the anatomy, growth and function of plants. The course focuses on the theoretical aspects of the topics and helps students to refine skills for scientific investigation in future biology courses. A minimum of 70 % in SNC 2DI plus strong Learning Skills and Work Habits is highly recommended. |
| 11 | SCH3UI Chemistry | University | SNC2DI | The fundamental concepts of chemistry are studied in detail to develop the foundation for future chemistry courses. Students begin to explore the mathematical connection in chemistry. General topics studied include the properties of chemicals and chemical bonds, chemical reactions, solutions and solubility, and atmospheric chemistry. A minimum of 70 % in SNC 2DI plus excellent Learning Skills and Work Habits are highly recommended. |

More grade 11 courses on next page

| Grade | Course | Type | Prerequisite | Course Details |
|-------|------------------------------------|------------------------|---------------------|---|
| 11 | SPH3UI Physics | University | SNC2DI | Students are introduced to the basic concepts physics via Newton's Laws of Motion and an exploration of different forms of energy. They develop their scientific-inquiry skills as they predict and verify accepted laws and solve problems arising from investigations and everyday life. A minimum of 70 % in SNC 2DI plus strong Learning Skills and Work Habits is highly recommended. A strong foundation in math is beneficial. |
| 11 | SVN3MI Environmental Science | University/ College | SNC2DI or SNC2PI | This course focuses on developing knowledge of and skills relating to ENVIRONMENTAL SCIENCE. Topics include; impact of the environment on human health, sustainability, waste management, conservation of energy and contemporary environmental challenges. A minimum of 60 % in either of the prerequisites plus good Learning Skills and Work Habits is strongly recommended. |
| 11 | SVN3EI Environmental Science | Workplace | SNC1DI or SNC1PI | For those students who do not intend to pursue post-secondary education but are interested in science. Topics may include: the impact of human activities on the environment; human health and the environment; energy conservation; resource science and management; and safety and environmental responsibility in the workplace. |

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| 12 | SBI4UI Biology | University | SBI3UI | A very in-depth study of biological systems including homeostasis, molecular biology, metabolic processes, biochemistry and population dynamics through a hands-on approach and investigations. A minimum of 70 % in SBI 3UI plus excellent Learning Skills and Work Habits are highly recommended. SCH 3UI is an asset. |
| 12 | SCH4CI Chemistry | College | SNC2DI or SNC2PI | The fundamental concepts of chemistry are studied and investigated. A variety of lab techniques and skills necessary for data collection and scientific analysis are developed through such topics as organic chemistry, electrochemistry, chemical calculations and chemistry's role in the environment. A minimum of 60 % in either of the prerequisites plus good Learning Skills and Work Habits are strongly recommended. |
| 12 | SCH4UI Chemistry | University | SCH3UI | Students broaden their knowledge of chemistry through new concepts in organic chemistry and atomic structure. Chemical systems and equilibrium are investigated and electrochemistry is explored. Laboratory skills are further developed in preparation for university. A minimum of 70 % in SCH 3UI plus excellent Learning Skills and Work Habits are highly recommended. |
| 12 | SPH4CI Physics | College | SNC2DI or SNC2PI | Students are introduced to the basic concepts physics via Newton's Laws of Motion and an exploration of mechanical, electrical, fluid, and communication systems. They develop their scientific-inquiry skills as they predict and verify accepted laws and solve problems arising from many hands-on investigations. A minimum of 60 % in either of the prerequisites plus good Learning Skills and Work Habits are strongly recommended. |
| 12 | SPH4UI Physics | University | SPH3UI | Students deepen their knowledge and understanding of the basic theories of physics. Students further develop their scientific-inquiry skills as they not only predict and verify accepted laws and solve problems arising from investigations and everyday life; but also learn how the interpretation of experimental data can provide evidence to support the development of a scientific model. A minimum of 70 % in SPH 3UI plus strong Learning Skills and Work Habits is highly recommended. |
| 12 | SNC4EI Science | Workplace | SNC2PI | For those students who do not intend to pursue post-secondary education but are interested in science. Topics include chemistry at home and work, communication, medical technology, and the environment. |