Ontario Virtual School Grade 12 Course Descriptions

Sciences Program:

- *Semester 1:*
  - **English:** Grade 12 University English seeks to consolidate the literacy and communication skills, as well as the critical and creative thinking skills, necessary for success in both academic and daily life. Throughout this course, students will analyse a range of challenging literary, informational, and graphic texts from various periods, countries, and cultures. They will also create oral, written, and media texts in a variety of forms. The three key focuses of this course will be: #1) using academic language with confidence and clarity, #2) selecting the reading strategies best suited to particular texts and particular purposes for reading and #3) developing greater control in one's writing.

  - **Math:** Grade 12 Advanced Functions (MHF4U) extends students experience with functions. Students will investigate the properties of polynomial, rational, logarithmic, and trigonometric functions; develop techniques for combining functions; broaden their understanding of rates of change; and develop facility in applying these concepts and skills. **MHF4U is intended both for students taking the Calculus and Vectors course as a prerequisite for a university program and for those wishing to consolidate their understanding of mathematics before proceeding to any one of a variety of university programs

  - **Chemistry:** This course provides students with a deeper understanding of chemistry. Throughout the course, they will have multiple opportunities to refine their ability to communicate scientific data, as well as further develop their problem-solving and investigation skills as they explore various chemical processes. There will be an overarching emphasis on the importance of chemistry in everyday life and on evaluating the impact of chemical technology on the environment.

- *Semester 2:*
  - **OLC – Ontario Literacy Course:** To participate fully in the society and workplace of the twenty-first century, today's students will need to be able to use language skillfully and confidently. The Ontario curriculum recognizes the central importance of reading and writing skills in learning across the curriculum and in everyday life, and prepares students for the literary demands they will face in their post – secondary endeavors. To ensure that they have the essential competencies in reading and writing that they will need to succeed at school, at work, and in daily

life, students in Ontario must demonstrate those skills as a requirement for graduation. The Ontario Secondary School Literacy Course (OSSLC) is a full-credit Grade 12 course that is offered as a part of the English program to provide students with intensive support in achieving the required reading and writing competencies. The reading and writing competencies required by the Ontario Secondary School Literacy Test (OSSLT) form the instructional assessment core of the course.

- **Math:** Grade 12 Calculus & Vectors (MCV4U) builds on students' previous experience with functions and their developing understanding of rates of change. Students will solve problems involving geometric and algebraic representations of vectors and representations of lines and planes in three-dimensional space; broaden their understanding of rates of change to include the derivatives of polynomial, sinusoidal, exponential, rational, and radical functions; and apply these concepts and skills to the modelling of real-world relationships. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended for students who choose to pursue careers in fields such as science, engineering, economics, and some areas of business, including those students who will be required to take a university-level calculus, linear algebra, or physics course.

- **Physics:** Grade 12 Physics allows students to deepen their understanding of physics concepts and theories. In this course, students will continue their exploration of energy transformations and the forces that affect motion. They will investigate electrical, gravitational, and magnetic fields, as well as electromagnetic radiation. Students will also have the chance to explore topics such as the wave nature of light, quantum mechanics, and special relativity. Throughout the course, they will further develop their scientific investigation skills, learning how to analyze data related to a variety of physics concepts and principles both qualitatively and quantitatively. Students will also consider the impact of technological applications of physics on society and the environment.

- **Business Leadership:** BOH4M focuses on developing the leadership skills used in managing a successful business. Throughout this course, students will analyze the role of a leader in business, with a focus on managing group dynamics and motivating employees, dealing with workplace stress and conflict, as well as decision-making and planning.