

Course Descriptions

Burnaby Central

SCIENCE

Science 8

In Biology students will learn about the cell and will explore the relationship between cells, tissues, organs and organ systems. Chemistry explores the concept of kinetic molecular theory focusing especially on the dynamic of fluids. Physics studies the nature and behaviors of light and explores how the eye functions. Earth Science explores how water and ice shapes our landscape. Throughout each discipline, the scientific method is introduced and developed as an underlying theme that structures written lab reports.

Science 8/9 Honours

Science 8/9 Honours followed by Science 10 Honours gives the student the opportunity to complete Science 8, 9 and 10 in two years. In the first year of the program students will complete the core parts of Science 8 and Science 9. We are looking for self-motivated and engaged students who love science. Entry into the Honours program is through an application process. A student must be recommended by their Grade 7 teacher and then write a general knowledge exam in the spring. All dates will be forwarded to Grade 7 teachers when they become available.

Science 9

This course covers units in Biology, Physics, Astronomy, Chemistry and Geology. Student assignments include laboratory experiments, group work and research presentations.

Science 10 (The Provincial Examination, worth 20% of the course, is mandatory)

The course covers units in Biology, Physics, Chemistry and Geology. Student assignments include laboratory experiments, group work and research presentations. Twenty per cent of the course mark will come from the Ministry of Education Science 10 provincial exam.

Science 10 Honours (The provincial examination, worth 20% of the course, is mandatory)

The course covers units in Biology, Physics, Chemistry and Geology. Student assignments include laboratory experiments, group work and research presentations. The purpose of Science 10 Honours is to provide enrichment for students who excel in Science. The intent of this course is to develop concepts at a deeper level than the Science 10 course. There is an expectation that students will be able to take on self-directed study in science areas that interest them. Proficiency in technology is required. Students are expected to be high achieving and highly motivated. Admission to this course is at the discretion of the Science Department.

Biology 11

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Students are introduced to several important biological themes. These include: Biodiversity, Evolution, and Ecological Relationships. This course uses an inquiry approach. The laboratory skills and themes studied this year are fundamental preparation for Biology 12 and future post-secondary studies in Biology.

Biology 11 Honours and Biology 12 AP

This is a combined course that will be offered in Semester 1. This course is open to any student who has an interest in Biology and is prepared for an intensive inquiry based college/university level curriculum. This class will cover all the curriculum of Biology 11 and Biology 12 as well as any additional subjects covered in Biology 12 AP. This course will require additional tutorial sessions outside of class time to prepare for the Biology AP exam which is written in May. Upon completion of the course and AP exam, the student will receive credit for Biology 11, Biology 12 and Biology 12AP. (credit for Bi 12 AP requires completion of AP exam)

Chemistry 11

This is an introductory course which covers the nature and scope of chemistry through laboratory inquiry and problem solving. Topics include science safety, scientific method, classification of matter, quantitative measurement, periodic table, solutions and organic chemistry.

Chemistry 11 Honours

This is an enriched course that covers the regular Chemistry 11 curriculum to a greater depth and may also cover additional enrichment units. There is an expectation that students be able to work at a faster pace to accommodate enrichment activities and topics and to engage in self-directed study.

Admission to this course is through an application process and is at the discretion of the Science Department. Students should have achieved a standing of 80% or better in Science 10/10H plus their teacher's recommendation.

Physics 11

This is an introductory course which covers the nature and scope of physics through inquiry and problem-solving, as well as the place of physics in our lives and its applications. Topics include: kinematics, dynamics, Einstein's Theory of Relativity, energy (electrical, mechanical, heat and nuclear), and the transmission of energy (waves and photons).

Physics 11 Honours

This is an enriched course that covers the regular Physics 11 curriculum to a greater depth and may also cover additional enrichment units. There is an expectation that students be able to work at a faster pace to accommodate enrichment activities and topics and to engage in self-directed study.

Admission to this course is through an application process and is at the discretion of the Science Department. Students should have achieved a standing of 80% or better in Math 10 and Science 10/10H plus their teacher's recommendation.

Earth Science 11

This is a survey course that explores the Earth and its environment in space through lab and field experiences. Earth science topics include rocks and minerals, plate tectonics, volcanoes, earthquakes, ocean and weather sciences, and oil, gas and mineral exploration. Space science topics include planets and the solar system, stars, galaxies, and deep space objects such as quasars and black holes.

Science and Technology 11

This is a course that explores the role of science and technology in our everyday lives. Students will participate in research, project work and presentations as part of their coursework.

Biology 12 (The Provincial Examination, worth 40% of the course, is optional. It is the student's responsibility to ensure they satisfy post-secondary requirements.)

Students continue to build upon and develop lab skills which were introduced in Biology 11. Important themes learned in Biology 11, such as Homeostasis, Evolution, and Organization of Living Things, are interwoven into the topics studied in this course. These topics include Molecular Biology, Cell Biology and Human Anatomy and Physiology.

Chemistry 12 (The Provincial Examination, worth 40% of the course, is optional. It is the student's responsibility to ensure they satisfy post-secondary requirements.)

Students will build on the concepts learned in Chemistry 11 with emphasis on reaction rates, reaction and solubility equilibrium, and electrochemistry.

Chemistry 12 Honours/AP

This course will be offered in Semester 1 and will cover the regular Grade 12 curriculum plus additional topics related to the Chemistry 12AP curriculum. The AP portion of the course will continue in Semester 2 and be offered off the regular timetable in the form of lunch time, before or after school sessions. These sessions will continue until the AP exam is written in May.

Physics 12 (The Provincial Examination, worth 40% of the course, is optional. It is the student's responsibility to ensure they satisfy post-secondary requirements.)

Students will build upon the concepts learned in Physics 11 with emphasis on mechanics and electromagnetism. This course helps develop analytical, experimental and problem-solving skills. It also helps students appreciate the role and applications of physics in our technological and cultural development.