PORT CREDIT S.S. COURSE OVERVIEW

SCIENCE DEPARTMENT

COURSE: Grade 11 Biology **COURSE CODE**: SBI3C0

OVERARCHING LEARNING GOALS

Scientific Investigation Skills and Career Exploration • Demonstrate scientific investigative skills in four areas: initiating and planning, performing and recording, analyzing and interpreting and communicating. • Identify and describe a variety of careers related to the fields of science under study, and identify scientists, including Canadians, who have made contributions to those fields.	**Genetics** • Understand meiosis and explain the roles of genes in heredity. • Investigate meiosis and the laws of heredity. • Evaluate ethical, social and environmental implications related to genetic research.
Cellular Biology • Understand the basic processes of cellular biology. • Investigate the structure and function of cells, and the factors that influence cellular activity. • Evaluate the impact of environmental factors and medical technologies on cellular processes.	**Anatomy of Mammals** • Understand structure, function and interaction of the circulatory, digestive and respiratory systems. • Investigate the anatomy, physiology and response mechanisms in mammals. • Analyze and evaluate treatment for system disorders and the impact of lifestyle choices.
Microbiology • Understand the diversity of microorganisms and their relationships. • Investigate the development and physical characteristics of microorganisms. • Assess the effects of microorganisms on the environment and their use in biotechnology.	**Plants in the Natural Environment** • Understand the structure and physiology of plants and their role in the environment. • Investigate factors affecting plant growth. • Analyze the roles of plants in ecosystems and the impact of human activities.

SUCCESS CRITERIA

Cellular Biology

- I can describe the various methods of cell transport and investigate the factors that affect the rate of transport.
- I can explain the various organelles and properly use the microscope.
- I can describe the structure and function of biological compounds and conduct biological tests for those compounds.
- I can explain various cellular processes in human systems and investigate chemical changes, enzymes and energy transformations associated with cellular respiration.

Microbiology

- I can describe the anatomy, morphology, roles and life cycles of the various microorganisms.
- I can explain the different methods of reproduction for bacteria, viruses and fungi and how they affect host organisms.
- I can compare the cell structure of eukaryotes, analyze the conditions they need to grow and the effects of antibacterial agents.
- I can assess the effects of helpful and harmful microorganisms.

Genetics

- I can explain and investigate the process of meiosis and relate it to the concept of DNA and the transmission of hereditary characteristics.
- I can solve basic problems in genetics using the Punnett square method.
- I can create a karyotype and describe some genetic disorders.
- I can describe reproductive technologies and evaluate the effects of genetic research.

Anatomy of Mammals

- I can describe the anatomy and physiology of the circulatory, respiratory and the digestive systems.
- I can identify interaction between the circulatory, respiratory and digestive systems.
- I can investigate the effects of specific variables on the human body systems.
- I can analyze the impact of various lifestyle choices on human health and the impact of technologies to treat health problems.

Plants in the Natural Environment

- I can describe the structure and physiology of specialized plant tissues and how they relate to the environment.
- I can explain the process of photosynthesis and the factors that affect plant growth.
- I can compare the methods of sexual or asexual reproduction.
- I can explain the roles of plants in the sustainability of the environment and investigate plant propagation techniques.

ASSESSMENT & EVALUATION

TERM EVALUATION – 70%

Assessment and evaluation in this course will be based on provincial curriculum expectations. Evaluation throughout the course and the final evaluation will incorporate four broad categories:

Knowledge and Understanding	Thinking/ Inquiry	Communication	Application
-knowledge of content -understanding of content	-planning and performing lab investigations -problem solving, critical thinking processes and skills	-expression and organization of ideas and information -use of conventions and terminology	-making connections to society, technology and the environment -transfer of knowledge and skills to unfamiliar contexts

Students will also receive descriptive feedback as part of the learning process which may not be assigned a mark. More detailed information regarding the Port Credit Secondary School Assessment and Evaluation policy can be found in the Student Agenda.

FINAL EVALUATION – 30%

The final evaluation will consist of an in-class, practical culminating task and/or a formal written exam.

LEARNING SKILLS

The following learning skills will be taught and assessed throughout the course and rated on the report card:

***Responsibility**	***Independent Work**	***Initiative**
***Organization**	***Collaboration**	***Self-regulation**

These skills will not be included in the final numeric mark. However, it is important to remember that the development of these skills is critical to academic achievement and does have a direct bearing on the final mark.