

## **Biology, Grade 11 University SBI 3U Course Outline**

Victoria Park Collegiate Institute, TDSB  
The Ontario Curriculum: The Ontario Curriculum: Science 2008  
Grade 11, University Preparation, 1.0 credit  
Prerequisites: Grade 10, Academic, Science

Assistant Curriculum Leaders:  
S. Reichling, K. Thorne, Science Office room 221; extension 20095

---

### **Course Description**

This course furthers students' understanding of the processes that occur in biological systems. 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. This course focuses on the theoretical aspects of the topics under study, and helps students refine skills related to scientific investigation.

### **Resources**

*Text: McGraw Hill Ryerson Biology 11*

**Note:** Textbooks that are lent to students and must be returned by the end of the semester.

**Replacement cost if lost is \$80.00**

### **Curriculum Expectations**

#### **Scientific Investigation and Career Exploration:**

Throughout this course, students will:

- A1. demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating);
- A2. identify and describe careers related to the fields of science under study, and describe the contributions of scientists, including Canadians, to those fields.

#### **B. Diversity of Living Things**

By the end of this course, students will:

- B1. analyse the effects of various human activities on the diversity of living things;
- B2. investigate, through laboratory and/or field activities or through simulations, the principles of scientific classification, using appropriate sampling and classification techniques;
- B3. demonstrate an understanding of the diversity of living organisms in terms of the principles of taxonomy and phylogeny.

#### **C. Evolution**

By the end of this course, students will:

- C1. analyse the economic and environmental advantages and disadvantages of an artificial selection technology, and evaluate the impact of environmental changes on natural selection and endangered species;
- C2. investigate evolutionary processes, and analyse scientific evidence that supports the theory of evolution;
- C3. demonstrate an understanding of the theory of evolution, the evidence that supports it, and some of mechanisms by which it occurs.

#### **D. Genetic Processes**

By the end of this course, students will:

- D1. evaluate the importance of some recent contributions to our knowledge of genetic processes, and analyse social and ethical implications of genetic and genomic research;
- D2. investigate genetic processes, including those that occur during meiosis, and analyse data to solve basic genetics problems involving monohybrid and dihybrid crosses;
- D3. demonstrate an understanding of concepts, processes, and technologies related to the transmission of hereditary characteristics.

### **E. Animals: Structure and Function**

By the end of this course, students will:

- E1. analyse the relationships between changing societal needs, technological advances, and our understanding of internal systems of humans;
- E2. investigate, through laboratory inquiry or computer simulation, the functional response of the respiratory and circulatory systems of animals, and the relationships between their respiratory, circulatory, and digestive systems;
- E3. demonstrate an understanding of animal anatomy and physiology, and describe disorders of the respiratory, circulatory, and digestive systems.

### **F. Plants: Anatomy, Growth and Function**

By the end of this course, students will:

- F1. evaluate the importance of sustainable use of plants to Canadian society and other cultures;
- F2. investigate the structures and functions of plant tissues, and factors affecting plant growth;
- F3. demonstrate an understanding of the diversity of vascular plants, including their structures, internal transport systems, and their role in maintaining biodiversity.

## Course Content

Unit	Timeline*
Diversity of Living Things	20 hours
Evolution	20 hours
Genetic Processes	20 hours
Animals: Structure and Function	30 hours
Plants: Anatomy, Growth and Function	20 hours

*\*Times listed are approximate. Order of instruction may vary.*

## Course Evaluation

### **Learning Skills**

Students will be assessed on the following Six Learning Skills;

**Responsibility, Organization, Independent Work, Collaboration, Initiative, Self-Regulation**

### **Teaching/Assessment and Evaluation Strategies**

A range of instructional strategies will be used to address student needs. Some of these strategies include direct instruction, interactive instruction, experiential learning and independent study. Students are given opportunities to learn through assessment before evaluations.

**Summative evaluation for this course is based on a final exam.**

### Achievement Chart

- **Knowledge and Understanding – K & U (30%)**  
Assessment/Evaluation may include quizzes, homework checks, tests, problem sets, assignments, etc.
- **Communication – C (25%)**  
Assessment/Evaluation may be based on laboratory reports, written reports, essays, oral presentations, in-class questions and answers, terminology, etc.
- **Thinking and Investigation – T & I (25%)**  
Assessment/Evaluation may include scientific inquiry, technical skills, open ended test questions, concept maps, formulating questions, etc.
- **Application – A (20%)**  
Assessment/Evaluation may include research, projects, debates, interviews, analyzing issues, assessing impacts and proposing courses of action, etc.

### 70% Grade on Course Work

#### Unit 1: Diversity of Living Things

Task	Achievement Chart Focus				Time of Assessment
	K&U	T/I	C	A	
Classification Inquiry	x	x	x		
Taxonomy Quiz	x		x		
Human Impact on Diversity Assignment		x		x	
Unit Test	x	x	x	x	

#### Unit 2: Evolution

Task	Achievement Chart Focus				Time of Assessment
	K&U	T/I	C	A	
Artificial/Natural Selection Inquiry		x	x	x	
Theories of Evolution Quiz	x				
Evolutionary Theory Assignment		x	x	x	
Unit Test	x	x	x	x	

#### Unit 3: Genetic Processes

Task	Achievement Chart Focus				Time of Assessment
	K&U	T/I	C	A	
Genetics Inquiry		x	x	x	
Genetics Quiz	x		x		
Genetics and Ethics Assignment	x	x		x	
Unit Test	x	x	x	x	

#### Unit 4: Animals: Structure and Function

Task	Achievement Chart Focus				Time of Assessment
	K&U	T/I	C	A	
Systems Inquiry		x	x	x	
Systems Quiz	x				
Exercise and Health Assignment	x	x	x	x	
Unit Test	x	x	x	x	

#### Unit 5: Plants: Anatomy, Growth and Function

Task	Achievement Chart Focus				Time of Assessment
	K&U	T/I	C	A	
Plant Growth Inquiry		x	x		
Plant Quiz	x				
Importance of Plants Assignment		x	x	x	

\*\* Above task list subject to changes. Many of the above tasks will include Higher Order Thinking Skills (HOTS).

\*\*Lab and lab activities involve skills. Evaluation of labs and skills are done on those actually performed by the student. Lab materials are seldom available after the activity. Regular attendance is critical for participation in and evaluation of these labs and skills.

#### 30% Grade Based on Common Course-Culminating Activities

All students will write a final exam during exam week at the end of the course. A doctor's note will be required for absences from culminating activities and exams. For more detail, please consult the Student Agenda.

#### Late Assignments/Missed Evaluations

5% per school day will be deducted for late assignments at the teacher's discretion. Missed tests or quizzes may result in a mark of zero if appropriate documentation is not provided. Chronic absences from evaluations may result in referral to administration.

#### Grade Reports throughout the Year

The grade for each term/reporting period is based on the evaluations that have been conducted to that point in the course. They will be based on the most consistent level of achievement to that time. The students' grades may change when all work is evaluated by the end of the course. An interim report will be sent home in October/March.

Midterm reports will be sent home with the students approximately half way through the semester.

#### Accommodations

Accommodations refer to the teaching strategies, supports, and/or services that are required in order for a student to access the curriculum and demonstrate learning. Students who have

an IEP are entitled to the accommodations specified in their plans.

The following considerations apply to each of the units in this course: *Instructional and assessment activities must take into account the strengths, needs, learning expectations and accommodations as identified in the Individual Education Plan whether students are formally identified or not.* (Regulation 181/98)

---

### **Policies and Procedures**

See the Victoria Park C.I. Student Agenda for additional details on School Policies on Homework, Attendance, Lateness, Missing and Late Assignments and Assessments, Course Modifications and Academic Honesty.