



Biology Grade 11 – SBI3U

Course Profile Outline

Course Description/Rationale/Overview

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. The course focuses on the theoretical aspects of the topics under study, and helps students refine skills related to scientific investigation.

Prerequisite: SNC2D

Class Requirements:

Student Responsibility

Students must seek assistance from the teacher and fellow students for all work missed due to absence and must make arrangements to complete missed work.

Course Requirements/Department Policies

Attendance requirement

Students are required to log in at least once per week on course activity. Students are expected to spend approximately 7 hours per week for both online and offline learning activities. Students are required to keep a Student Learning Log for each course documenting online and offline activities.

What is considered an Absence?

If a student fails to login in two consecutive weeks, it will be considered as one absence. When a student has 2 absences, the school will issue a warning letter.

By mid-term (within two months from the start of a course), if a student fails to complete 40% of course work, the principal may ask the student to withdraw from the course.

Evaluation

Assignments, projects, quizzes, tests, unit tests, mid-term evaluation, culminating activity and final examination

Curriculum Strands

1. Diversity of Living Things
2. Genetic Processes
3. Evolution
4. Animals: Structure and Function
5. Plants: Anatomy, Growth and Function

Achievement Categories

- Knowledge and understanding 30%
- Application 20%
- Thinking and Inquiry 30%
- Communication 20%

Learning Skills

- Initiative
- Work Habits and Homework
- Organization
- Independent work
- Teamwork

Evaluation		Final Mark	
Term Work		Term Work	70%
Assignments	20%	Final	30%
Quizzes	15%		
Unit Tests	20%		
Mid-term	15%	Total	100%
Culminating Activity	10%		
Final Examination	20%		

Course Outline

By the end of this course, students will be able to:

1. Diversity of Living Things (21 Hours)

- analyze the effects of various human activities on the diversity of living things;
- investigate, through laboratory and/or field activities or through simulations, the principles of scientific classification, using appropriate sampling and classification techniques;
- demonstrate an understanding of the diversity of living organisms in terms of the principles of taxonomy and phylogeny
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2. Genetic Processes (24 Hours)

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

3. Evolution (20 Hours)

- analyze 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
- investigate evolutionary processes, and analyse scientific evidence that supports the theory of evolution
- demonstrate an understanding of the theory of evolution, the evidence that supports it, and some of the mechanisms by which it occurs

4. Animals: Structure and Function (30 Hours)

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

5. Plants: Anatomy, Growth and Function (10 Hours)

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

6. Independent Study (5 Hours)

- demonstrate scientific investigation skills (initiating and planning, performing and recording, analysing and interpreting, and communicating).
- identify and describe a variety of careers related to the fields of science under study (e.g., zoologist, botanist, geneticist, ecologist, pharmacologist, farmer, forester, horticulturalist) and the education and training necessary for these careers

Resources

Textbook: *Biology 11*. Nelson. (2013).

Supplementary Teaching Materials Worksheets organized by the teacher