

Canterbury High School

Ottawa-Carleton District School Board

Science Department

Semester I – 2010 / 11 – Course Outline

Course Title: Grade 11 Biology, College	Grade Level: 11
Course Code: SBI3C	Credit Value: 1.0
Prerequisite: SNC2Por SNC2D Science, Grade 10, Academic or Applied	

Teacher: Ms. Caiger-Watson

Course Overview: 110 hours

This course focuses on the processes that occur in biological systems. Students will learn concepts and theories as they conduct investigations in the areas of cellular biology, microbiology, genetics, the anatomy of mammals, and the structure of plants and their role in the natural environment. Emphasis will be placed on the practical application of concepts, and on the skills needed for further study in various branches of the life sciences and related fields.

Strands/Units of Study:

In biology, each strand covered will be a unit of study. The units of study are:

- **Cellular Biology**
- **Microbiology**
- **Genetics**
- **Anatomy of Mammals**
- **Plants in the Natural Environment**

Course Expectations

Cellular Biology (Unit One):

By the end of this course, students will:

- evaluate the impact of environmental factors and medical technologies on certain cellular processes that occur in the human body;
- investigate the structures and functions of cells, and the factors that influence cellular activity, using appropriate laboratory equipment and techniques;
- demonstrate an understanding of the basic processes of cellular biology.

Microbiology (Unit Two):

By the end of this course, students will:

- assess the effects of microorganisms in the environment, and analyse ethical issues related to their use in biotechnology;
- investigate the development and physical characteristics of microorganisms, using appropriate laboratory equipment and techniques;
- demonstrate an understanding of the diversity of microorganisms and the relationships that exist between them.

Genetics (Unit Three):

By the end of this course, students will:

- evaluate some social, ethical, and environmental implications of genetic research and related technologies;
- investigate the process of meiosis, and analyse data related to the laws of heredity;
- demonstrate an understanding of the process of meiosis, and explain the role of genes in the transmission of hereditary characteristics.

Anatomy of Mammals (Unit Four):

By the end of this course, students will:

- analyse the social or economic impact of a technology used to treat systems in the human body, and the impact of lifestyle choices on human health;
- investigate, through laboratory inquiry or computer simulation, the anatomy, physiology, and response mechanisms of mammals;
- demonstrate an understanding of the structure, function, and interactions of the circulatory, digestive, and respiratory systems of mammals.

Plants and the Natural Environment (Unit Five):

By the end of this course, students will:

- analyse the roles of plants in ecosystems, and assess the impact of human activities on the balance of plants within those ecosystems;
- investigate some of the factors that affect plant growth;
- demonstrate an understanding of the structure and physiology of plants and their role in the natural environment.

Teaching Strategies

teacher demonstrations
laboratory experiments
multimedia
investigative research

small group work
student-teacher conferencing
written assignments
hands-on activities

Assessment and Evaluation Strategies

written tests
lab reports
observation (formal and informal)
homework checks and quizzes
summative assignment

rubrics
group presentations
discussion
research projects
exam

Evaluation Summary

Knowledge and Understanding	20 %
Thinking, Inquiry & Problem Solving	20 %
Communication	15 %
Making Connections	15 %
Summative Evaluation	10 %
Final Examination	20 %

Please refer to the achievement chart for science in the ministry curriculum documents for more information.

References

http://www.edu.gov.on.ca/eng/curriculum/secondary/2009science11_12.pdf

Student Resources / Texts

Biology 11 College Preparation, Nelson, replacement cost \$75 + tax and shipping.

