

R. H. King Academy Science Department
Grade 11 College Preparation Biology (SBI3C)
Course Outline and Evaluation

COURSE OVERVIEW

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. This course is considered a **values course** because it provides students with opportunities to evaluate the impacts of personal choices and technologies on their health and the environment.

Prerequisite: Grade 10 Science (Academic or Applied)

Credit Value: 1.0

TOPICS OF STUDY

Cellular Biology

In this unit 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

In this unit 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

In this unit 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 and Physiology of Mammals

In this unit 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 in the Natural Environment

In this unit 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.

COURSE TEXTBOOK: McGraw Hill Biology 11 College Preparation

Replacement Cost: \$ 90

MATERIALS REQUIRED: binder, loose leaf paper, pens, pencils, eraser, ruler, calculator, graph paper

CALCULATION OF MARKS

Your final mark will be calculated as follows:

Your final mark in Chemistry will be calculated as follows:

Knowledge	18 %
Thinking and Investigation	18 %
Communication	12 %
Application	12 %
Projects(K,I,C,A)	10 %
Final Exam	30 %

Knowledge and Understanding

- understanding of concepts, principles, laws, and theories (e.g. identifying assumptions, eliminating misconceptions, providing explanations)
- knowledge of facts and terms
- transfer of concepts to new contexts
- understanding of relationships between concepts

Thinking and Investigation

- application of the skills and strategies of scientific inquiry (e.g. initiating and planning, performing and recording, analysing and interpretation, problem solving)
- application of technical skills and procedures
- use of tools, equipment and materials

Communication

- communication of information and ideas: use of scientific terminology, symbols, conventions and standard (SI) units, communication for different audiences and purposes
- use of various forms of communication (e.g. reports, essays)
- use of information technology for scientific purposes

Application

- understanding connections between science, technology, society and the environment
- analysis of social and economic issues involving science and technology
- assessment of impacts of science and technology on the environment
- proposing courses of practical action in relation to science and technology based problems

CLINIC

All students can benefit by attending clinic periods when they feel they need extra help. You may be required to commit to clinic with your Biology teacher based on marks, completion of work, disciplinary needs, or teacher request.

CHEATING AND PLAGIARISM

It is expected that all students at R.H. King Academy will practice academic honesty and build this into their career philosophies. They must acknowledge any input from peers, parents and secondary sources. Information gathered from the Internet is considered a secondary source. To submit any work that is not completely their own is considered plagiarism. "Loaning" completed work to other students is considered to be cheating.

Cheating will result in a mark of zero and may result in suspension and/or loss of credit.