



## Grand River Collegiate Institute COURSE OUTLINE

*For students and their families.*

**Course Name**

**Grade 12 University Preparation Biology**

Curriculum document <http://www.edu.gov.on.ca/eng/curriculum/secondary/>

**Course Code**

**SBI 4UI**

**Prerequisite**

**SBI 3UI**

**Teacher**

Mrs. Batters

**Contact**

519-576-5100 (ext. 6005)

**Textbook**

Nelson Biology 12 (Replacement Cost \$99.95)

**COURSE DESCRIPTION**

This course provides students with the opportunity for in-depth study of the concepts and processes that occur in biological systems. Students will study theory and conduct investigations in the areas of biochemistry, metabolic processes, molecular genetics and homeostasis. Emphasis will be placed on the achievement of detailed knowledge and the refinement of skills needed for further study in various branches of the life sciences and related fields.

**Essential Learnings/Expectations/Skills** – To be successful in this course you **must** be able to demonstrate **all** of these essential expectations.

**Scientific Investigation Skills and Career Exploration (throughout the course):**

- formulate relevant scientific questions about observed relationships, ideas, problems, or issues, make informed predictions, and/or educated hypothesis to focus inquiries or research
- select appropriate instruments and materials, and identify appropriate methods, techniques, and procedures, for each inquiry
- identify and locate a variety of print and electronic sources that enable them to address research topics fully and appropriately
- identify and describe a variety of careers related to the field of Biology under study
- describe the contributions of scientists, including Canadians

**Homeostasis (Strand 1):**

- To understand how systems maintain homeostasis by knowledge of how the kidney works
- To understand how systems maintain homeostasis by knowledge of how feedback loops work
- To understand how systems maintain homeostasis by knowledge of how the nervous system works

**Biochemistry (Strand 2):**

- To understand the structures and functions of four (carbohydrates, lipids, protein and DNA) biological molecules
- To understand how biological molecules and their chemical properties affect cellular processes and biochemical reactions
- To identify and describe four main types of biochemical reactions: oxidation-reduction (redox), hydrolysis, condensation and neutralization

**Molecular Genetics (Strand 3):**

- To understand how DNA contains all the genetic information for every living organism
- To understand how DNA replicates
- To understand how proteins are made
- To understand how proteins control a wide variety of cellular functions
- To describe the techniques involved in biotechnology and be able to apply them to industry

**Metabolic Processes (Strand 4):**

- To understand how cellular respiration produces energy for all biochemical reactions
- To identify the differences between anaerobic and aerobic respiration by learning how they produces energy for life
- To understand how photosynthesis uses solar energy to produce chemical energy for life

**EVALUATION- Evidence of Learning**

Strand	Assessment Technique	Purpose
Homeostasis	2 quizzes quest 2 dissections 2 tests	formative summative summative summative
Biochemistry	formal lab 2 quizzes assignment unit test	summative formative formative summative
Molecular Genetics	formal lab quiz unit test	summative formative summative
Metabolic Processes	quiz project test	formative summative summative

**Final Grade**

<b>Term Work</b>	
- Tests	45%
- Lab reports and assignments	25%
<b>Final Written Exam- 2 hours</b>	30%

Refer to the GRCI Web Site [www.grc.wrdsb.ca](http://www.grc.wrdsb.ca) for Assessment, Evaluation and Reporting Policies as well as Academic Honesty and Late Policies.

## Procedures

**Late and Missing Assignments:** It is important for students to develop good personal management skills (such as time management and planning). These skills will be reflected in the **learning skills** area of the report card. It is expected that students will complete and submit all essential tasks as they are the opportunity for you to demonstrate your learning to your teacher.

**Attendance:** Attendance in classes is an important part of learning, and absences should be avoided. When a student is absent, a parent/guardian must call the school's attendance line on the date of absence, or provide a note explaining the absence for the student to submit the following day. Students are responsible for what they missed during their absence.

**Cheating and Plagiarism:** It is important for students to do their own best work. Most assignments for this class are done within the classroom, observed by the teacher, and this helps to minimize the chances of cheating and plagiarism. In the event that cheating or plagiarism occurs, the following consequences may be implemented, in consultation with administration, depending on the situation:

1. The student may be required to redo all or part of the assignment or assessment.
2. The student may be required to complete an alternate assignment or assessment.
3. The student's work may be treated as a missed assignment.

There may also be other consequences that are determined to be appropriate (e.g. detention, suspension, etc.) as per the school's progressive discipline process. Parents/guardians will be informed about the infraction and the consequences.

Please refer to the school website: <http://grc.wrdsb.ca/about/policies> for more details on these policies and other academic procedures.

### COMPLETION OF ASSESSMENTS

Each student is responsible for submitting all assessments on a specific due date. If they fail to submit any assessment, please provide a daytime and evening phone number, as well as an e-mail address to allow for communication.

**Daytime phone contact:** \_\_\_\_\_

**Evening phone contact:** \_\_\_\_\_

**E-mail address:** \_\_\_\_\_

### Signatures

Please sign below indicating you have read and understand the requirements for successful completion of this course.

\_\_\_\_\_  
Student

\_\_\_\_\_  
Parent/Guardian