



GRIMSHAW PUBLIC SCHOOL

*Inspiring students today for tomorrow's future*

**Biology 20 Course Outline  
2023 – 2024**



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## Welcome to Biology 20!

Biology 20 is an exciting course that explores both global and microscopic aspects of biology. A significant portion of the knowledge obtained in this course will be required for later success in Biology 30. In the first half of this course, students explore the constant flow of energy and cycling of matter in the biosphere and the concepts of populations and ecosystems, natural selection and evolution. The second half of the course deals with the life processes of organisms, beginning with photosynthesis and cellular respiration, and ending with the detailed study of various human systems, including the digestive, respiratory, circulatory, defense, excretory and motor systems.

### Course Outline and General Outcomes

<b>Unit A: Energy and Matter Exchange in the Biosphere</b> <ol style="list-style-type: none"><li>1. explain the constant flow of energy through the biosphere and ecosystems</li><li>2. explain the cycling of matter through the biosphere</li><li>3. explain the balance of energy and matter exchange in the biosphere, as an open system, and explain how this maintains equilibrium</li></ol>	20% of time September Ch. 1 – 3
<b>Unit B: Ecosystems and Population Change</b> <ol style="list-style-type: none"><li>1. explain that the biosphere is composed of ecosystems, each with distinctive biotic and abiotic characteristics</li><li>2. explain the mechanisms involved in the change of populations over time</li></ol>	20% of time September-October Ch. 4 – 5
<b>Unit C: Photosynthesis and Cellular Respiration</b> <ol style="list-style-type: none"><li>1. relate photosynthesis to storage of energy in organic compounds</li><li>2. explain the role of cellular respiration in releasing potential energy from organic compounds</li></ol>	20% of time October-November Ch. 6 – 7
<b>Unit D: Human Systems</b> <ol style="list-style-type: none"><li>1. explain how the human digestive and respiratory systems exchange energy and matter with the environment</li><li>2. explain the role of the circulatory and defense systems in maintaining an internal equilibrium</li><li>3. explain the role of the excretory system in maintaining an internal equilibrium in humans through the exchange of energy and matter with the environment</li><li>4. explain the role of the motor system in the function of other body systems</li></ol>	40% of time November-January Ch. 8 – 12

## COURSE EVALUATION

A variety of instructional and assessment strategies will be used throughout this course. The course will be evaluated over the term as follows:

Overall Evaluation		Individual Unit Evaluation	
Unit A	15 %	Assignments and Labs	35 %
Unit B	15 %	Quizzes	25 %
Unit C	10 %	Unit Exam	40 %
Unit D	30 %	<i>Unit Total</i>	100 %
Final Exam	30 %		
<i>Course Total</i>	100 %		

## MISSED/LATE WORK POLICY

Circumstances may arise where students miss assignment due-dates, lab investigations, quizzes or unit exams. Missed assessments must be *made up* and handed in at the earliest possible time. Chronic absences are a cause for concern. Regular student and parent monitoring of the student's progress is recommended through PowerSchool.

**Assignments and Labs** are a component of every unit and are to be handed in no later than the specified due-date. In most circumstances, late assignments will be graded. Students will be allowed to redo any assignments so long as they are handed in on time the first time. Parameters around how to format a redo assignment will be explained in class.

**Quizzes** are a component of every unit and must be written on the date specified. If a quiz is missed *with a valid excuse*, it must be written the following day during either Flex or after school. *No retests will be permitted.*

**Unit Exams** are comprehensive tests that cover the content from the entire unit. If a unit exam is missed *with a valid excuse*, it must be written the following day during either Flex or after school.

**Final Exam:** The final exam is a cumulative test that covers in detail the content from the entire course and will be administered at the end of the term.

## REQUIRED RESOURCES

The **textbook** for Biology 20 is *Nelson Biology 20-30*. Students are required to bring their textbook to class each day. As this course relies heavily on the textbook, it is strongly recommended that students take textbooks home daily. An online copy will also be provided through google classroom.

## CLASSROOM EXPECTATIONS AND STRATEGIES FOR SUCCESS

1. **Come to class, every single day.** Coming to class involves more than just showing up; you must be prepared to think hard and work hard. Also, please be on time.
2. **Participate wholly in class.** Learning is not the rote memorization of facts. In-class activities provide an opportunity to make connections and gain a deep understanding of material. If you make a choice to not participate actively, you are wasting these opportunities as well as your time. Challenge yourself to think, focus and *do*.
3. **Do not let yourself get distracted.** This includes by your friends and your cellphone. This is a waste of your time spent in class. Learn the material while it's being taught and discussed in-class, not the night before the exam. By the same token, do not distract the people around you; allow them to succeed.
4. **Ask questions.** Be curious, desire to learn more, and never be afraid to ask questions. Clear up any misunderstandings early and as they arise, not the night before the exam.
5. **Review material every day.** A considerable amount of learning happens during reflection. Take time every night to review your notes and reflect on what we learned in class that day. Even a few minutes every night will help. If you did not understand something that day, challenge yourself to figure it out (look at the textbook, find videos online, ask someone else in the class, and of course, come see me the next day).

Biology is an exciting field with a lot of hands-on laboratory work. Students are required to listen diligently to instructions before engaging in any lab activities in order to ensure their safety. Safety will be covered before all lab activities, but know that the following rules apply to student conduct in the laboratory environment:

- Shoes are to be worn and tied at all times.
- Goggles will be provided when required.
- All equipment must be handled carefully and respectfully.
- Absolutely no unsafe behaviour will be tolerated at any time.

I have high, positive expectations of every student, and every student should have the same expectations of themselves.

All work should be completed with pride and to the best of your ability.

I am available to help.

I believe you can succeed.