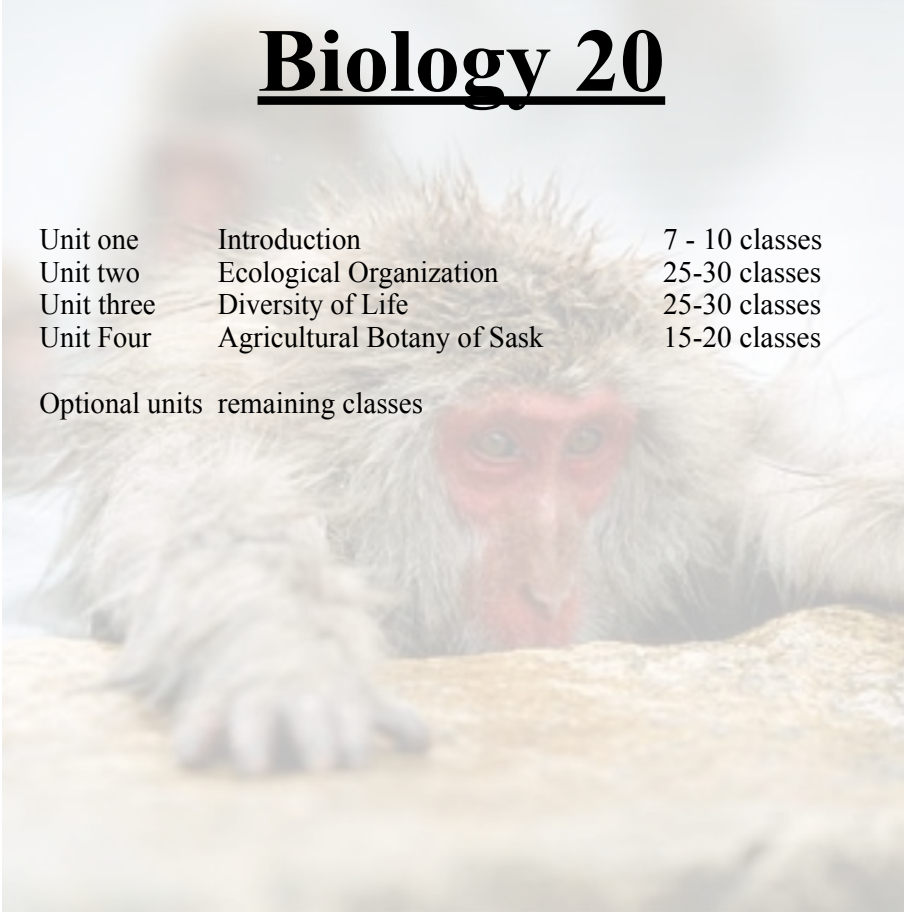


Biology 20



Unit one	Introduction	7 - 10 classes
Unit two	Ecological Organization	25-30 classes
Unit three	Diversity of Life	25-30 classes
Unit Four	Agricultural Botany of Sask	15-20 classes

Optional units remaining classes

Marks

Quizzes and major projects 40%

Unit Exams 30%

Final Exam 30%

Assignments, homework, labs, etc. are not worth marks but they **must** be done.

You will have a quiz a week or every 2 weeks.

Expectations

This course will challenge you and your work ethic. It can be a very rewarding and interesting class, but only if you put in the required effort. You will be asked to learn a large amount of material and apply it in lab work and exams. Homework will be a regular occurrence, as the amount of class time will not be sufficient to complete all of the necessary assignments. You will also need to keep up in chapter readings to help you understand the material being covered in class. I believe that each of you are capable of this and can be successful in this course.

Classroom Guidelines

1. Come to class on time and come prepared with all necessary materials.
2. Come to class prepared to work.
3. Demonstrate respect to others when they are speaking.
4. Put your best effort in on every assignment and exam.
5. Complete all homework assignments and reading requirements.
6. Check with your teacher before leaving the classroom for any reason.
7. It is your responsibility to catch up on material when absent from a class.
8. If you are late, come in quietly to avoid disturbing the class.
9. Take care of the lab equipment at all times.
10. Do not bring food into the lab. Drinks are o.k. if they are brought in at the start of class. Do not leave the class to buy one.

What do you know about Biology??



Unit One: Introduction to Biology

Time: Approximately 7 classes

Key Concepts: microscopy, theory, cell theory, natural selection, evolutionary theory

This unit is meant to establish a rationale for the teaching of biology, create an excitement for the study of biology, and set the context in which biology is viewed. To accomplish this last objective, the cell theory and the evolutionary theory are introduced. These two theories have had great impact on the structure of the discipline of biology, and can act as organizers for the study of biology in grades 11 and 12. The meaning of the term 'theory' in science should be discussed.

Biology Foundational and Learning Objectives

Understand the nature of the study of biology.

- 1.1 Examine the types of questions which biologists investigate.
- 1.2 Exhibit a curiosity about life and the conditions which support life.
- 1.3 Appreciate the nature of scientific investigations and the findings of science.
- 1.4 Recognize the relationship between what is studied in biology and daily life.
- 1.5 Define the term biology.

Use a microscope to examine cells.

- 2.1 Develop proper techniques for handling and care of a microscope.
- 2.2 View prepared slides.
- 2.3 Prepare wet-mount slides.
- 2.4 Sketch what is seen in the field of view.
- 2.5 Estimate sizes of objects observed.
- 2.6 Compare the images produced by light microscopes and electron microscopes.
- 2.7 Discuss examples of how the microscope has altered what we know.

Explain the importance of theory in biology.

- 3.1 Outline the key aspects of a scientific theory. (See the Unit Overview and web.)
- 3.2 Discuss the development of the cell theory.
- 3.3 Recognize the link between the development of cell theory and the technology available to study cells.
- 3.4 Realize the significance of cell theory in establishing the relatedness of all living organisms.
- 3.5 Examine the principles of natural selection as identified by Darwin and Wallace.
- 3.6 Explain how natural selection is the basis of the theory of evolution.
- 3.7 Describe how a theory might change using an example(s).



Question: What is Biology?

Answer: Biology is the study of life.

Another Question: What are the characteristics of life?

Another Answer: An **organism** is an individual that is capable of carrying on life's processes. All living things are similar in their activities and functions.

1. **Need for food.** Producers make their own food. Consumers obtain food from others
2. **Require energy to live.**
3. **Some period of growth during lifetime.**
4. **Maintenance and repair.** Repairs to injury, resistance to disease, etc.
5. **Reproduction.**
6. **Organization.** An orderly function to all systems. For example, if your respiratory system shuts down, the other systems will soon follow.
7. **Adaptations.** This enables organisms to survive in their particular environments, like fish having gills and humans having lungs.

So why do we care?