

BIOLOGY 30S COURSE OUTLINE

“Your cells are a country of ten thousand trillion citizens, each devoted in some intensively specific way to your overall well-being. There isn’t a thing they don’t do for you. They let you feel pleasure and form thoughts. They enable you to stand and stretch and caper. When you eat, they extract the nutrients, distribute the energy, and carry off the wastes...They keep your hair growing, your ears waxed, your brain quietly purring. They manage every corner of your being. They will jump to your defense the instant you are threatened. They will unhesitatingly die for you – billions of them do so daily. And not once in all your years have you thanked even one of them. So let us take a moment now to regard them with the wonder and appreciation they deserve.”

– Bill Bryson

Welcome to Biology 30S. Here is a list of the major topics that we will be covering this year:

1. Wellness and Homeostasis
2. Transportation and Respiration
3. Protection and Control
4. Digestion and Nutrition
5. Excretion and Waste Management

Your Responsibilities:

- 👉 Show **respect** while in this class (and preferably everywhere else too). This includes respect for your peers, teachers, the classroom, and others’ belongings.
- 👉 Show up for every class and be ready to work. Class will begin once the bell has sounded. If you are not in the classroom, you will be considered late. Remember, lateness usually causes you to miss important information and you interrupt the lesson. It also reflects poorly on your character.
- 👉 Bring the following materials to every class: your biology binder, red and blue pens, pencil, eraser, and ruler. You may also be asked to bring other materials for specific activities or assignments. You will use a textbook in class from time to time and will be able to sign it out if necessary.
- 👉 Only touch equipment if instructed to do so.
- 👉 No food or drinks are allowed in the Biology lab, with the exception of tightly lidded to-go mugs and bottled water (try to bring your own reusable bottle instead of using plastic water bottles).
- 👉 It is your responsibility to ask for clarification or help with any of the course material that you may not understand. Do not wait until it is too late to ask for help.
- 👉 When you are absent, YOU are responsible for getting materials and catching up. Always check in with me as soon as you know that you will miss a class or as soon as you return from being away unexpectedly. I will not chase you. More on this topic later in this document.

Cell Phones/Tablets/Electronic devices

Phones and other devices are a huge distraction in our classroom and, not only do they take away from your ability to focus on biology, they often prevent you from connecting with the people right next to you in that moment.

Cell phones and other devices will **not** be permitted in class during lessons or activities that require all of your attention, ie: discussions, lectures, watching a video, group work, labs, etc. Devices must be put away during these times. I will confiscate any devices that are visible or in use.

Some days I may ask you to use your phone. Other days, you will turn in your cell phones at the start of class. For example, if we have a test or if I believe that cell phones are becoming problematic I will start collecting phones before we begin the lesson.

Pictures and recordings may not be taken of your peers, me, or my materials without explicit permission.

Since I am responsible for designing your learning environment, I am going to make decisions based on what I feel you, my students, need to achieve your highest potential. These decisions about devices must be honoured.

Biology 30S Assessment

How your grade will be calculated:

Knowledge and Understanding	= 70%	}	75% of entire mark
Scientific Skills and Inquiry	= 15%		
Science, Technology, Society, and the Environment	= 15%		
Final Assessment - Exam		}	25% of entire mark

I reserve the right to make changes to the mark breakdown for calculating marks.

What are these categories?

Knowledge and Understanding

- Increase awareness of personal wellness, describe how the body attempts to maintain an internal balance called homeostasis, explain the principle of negative feedback and identify how the body stabilizes systems against excessive change, identify life processes that individual cells and complex organisms need to manage, explain how cell membranes regulate movement of materials into and out of cells, identify factors that influence movement of substances across a membrane, explain role of energy in maintaining the cell's internal balance.
- Compare the characteristics of blood components, compare blood types, describe the blood donation process, compare the structure and function of blood vessels, identify the materials transported between cells and capillaries, describe the cardiac cycle, describe the nervous and chemical control of heartbeat, explain the meaning of blood pressure readings and identify the normal range, identify factors that affect blood pressure or cardiac function and describe their effects, explain how transport systems help to maintain homeostasis, distinguish between cellular respiration, internal respiration, and external respiration, identify major structures and functions of the human respiratory system from a diagram, describe how breathing is controlled to help maintain homeostasis, investigate and describe conditions associated with transportation and respiration, identify personal lifestyle choices that contribute to cardiovascular and respiratory wellness.
- Describe the body's defence mechanisms for protection from foreign agents, describe the body's response to allergens, vaccines, and viruses/bacteria, explain the role of the lymphatic system, investigate issues related to the immune system, describe the major organization of the nervous system, identify the functional regions of the brain, explain how a nerve impulse travels a particular pathway using chemical and electrical signals, compare the general roles of nervous and hormonal controls, explain the effects of a concussion on brain function, describe how personal lifestyle choices can influence the functioning of protection and/or control systems, investigate and describe conditions that affect protection/control in the body.
- Identify major structures and functions of the human digestive system from a diagram, describe the processes of mechanical digestion that take place at various sites along the alimentary canal, identify functions of secretions along the digestive tract, identify sites of chemical digestion along the digestive tract and the type of nutrient being digested, explain the roles of enzymes in the chemical digestion of nutrients, describe the processes of absorption that take place at various sites, describe the homeostatic role of the liver with respect to nutrient levels in the blood, describe the functions of each of the six basic types of nutrients, evaluate personal food intake, investigate and describe conditions/disorders that affect digestion.

- Identify the primary metabolic wastes produced in the human body and the source of each, describe the roles of the major excretory structures in eliminating wastes and maintaining homeostasis, identify structures of the human urinary system and describe the function of each, explain the processes of filtration, reabsorption, and secretion in the nephron, describe the feedback mechanisms associated with water and salt balance and their role in maintaining homeostasis, describe what types of information can be gained through urinalysis, investigate and describe issues related to kidney failure and treatment options available.

Assessment will be based on test/quizzes, assignments, and research projects.

Scientific Skills and Inquiry

- make predictions/hypotheses about a scientific problem
- able to use equipment to make accurate measurements
- make relevant observations, collect data and information, measure, and make calculations based on measurements
- analyze and interpret data to draw conclusions that explain the data
- identify possible sources of error and suggest ways to make the experiment better
- pose questions and search for explanations
- follow dissection instructions, investigate specimens, identify structures, and relate information back to theory/lessons

Assessment of the above and related items will be based on lab experiments and other activities.

Science, Technology, Society, and Environment

- describe scientific and technological developments, past and present, and understand their impact on society and the environment
- identify factors that affect health and explain relationships between lifestyle choices and human health
- apply scientific and technological knowledge to decisions
- clarify issues, critically evaluate all available research, generate and examine possible courses of action, make thoughtful decisions about issues, and examine impacts of the decisions
- identify different views or perspectives based on varying information
- discuss ethical issues related to individuals, society, and the environment
- investigate issues and describe economic implications, a variety of perspectives, and personal/societal/global implications of the issue

Assessment of the above and related items will be based on tests/quizzes, assignments, and research projects.

Completion of course work (assignments, projects, labs, quizzes, tests, etc.)

1. Your work needs to be handed in on the due date, unless prior arrangements have been made with me.
2. Any work not submitted by the communicated due date will be considered late and you will need to abide by SCI’s assessment policy (see below). This includes work missing from when you have had any absences, excused or unexcused.
3. If you have been away, you should
 - a. see me immediately upon return to the building to arrange to complete missed work.
 - b. be prepared to write any quizzes or tests upon your return.
4. Late original assignments will not be accepted after the procedure below has been carried out.

The following is taken from SCI’s assessment policy and will be adhered to in this course:

Creating the Grade:

- Grades will be based only on the demonstration of an individual student’s knowledge and skills of the outcomes for each course:
 - Only items marked by the teacher will determine a student’s grade
 - Grades are based on individual student achievement, not group achievement
- When determining a grade, the teacher will decide whether there is sufficient evidence of achievement. If not, the mark can be reported as an “*IN*” (incomplete). Teachers will determine with students and parents/guardians a plan for completion of work.

Establish, communicate, and apply consequences for late and missing work:

Students must understand that there will be consequences for not completing assignments that provide evidence of learning or for submitting those assignments late. If, after establishing and clearly communicating expectations regarding assignments, setting and communicating timelines for assignments, and supporting student learning using the strategies provided above, student work is still late or missing; teachers will apply the following strategies:

- confer with the student and, where appropriate, with the student's parent/guardians about the reasons for not completing the assignment, and consider the legitimacy of reasons;
- develop an agreement with the student to complete the work;
- require the student to complete missing work during lunch by attending the Assessment Completion Centre (ACC).

If, after completing the steps above, the student does not hand in the assessment by the agreed upon deadline, a zero may be used as a mark as the student has not demonstrated any knowledge or skill of the outcome.

The consequence for not completing work is to complete the work. Late marks will not be subtracted from an assignment as it is purely punitive and doesn’t measure learning. The assignment will either be completed or given a zero.

The full policy is available on the SCI website under “Student Handbook”.



I have read/followed along and I understand my responsibilities for this course.

Student Name (print)

Student Signature

Date