

# Anatomy and Physiology 12

**Learning Outcomes:** The activities in this course are based on the core competencies and curricular competencies as provided by the Ministry of Education of BC and will introduce students to three key ideas: Homeostasis is maintained through physiological processes, gene expression, through protein synthesis, is an interaction between genes and the environment, and organ systems have complex interrelationships to maintain homeostasis.

View the complete Ministry of Education learning outcomes for this course: [Anatomy & Physiology 12](#)

**Resources:** All resources are provided within the course. Students will need good access to the Internet and will be required to use online tools.

**Exams:** All exams and quizzes require a password and are to be invigilated by a teacher at your school or an approved testing center. Exams may be rewritten if needed. Pay attention to the number of marks a question is worth. Be sure to include enough detail to earn all the marks. Exams may cause anxiety for some students. See your teacher for study skills if necessary.

**Communication:** Assignments are submitted directly through your course. Constant communication with your teacher is key to success in a DL course. Phone or email or message your teacher for help whenever necessary.

**Goal Setting:** This course is self-paced and self-directed. Students should plan on working 5-6 hours a week on this course. It is highly recommended that the student creates a calendar of monthly, weekly, and even daily goals. Contact your teacher if help is needed doing this.

**Learning Guides/Projects:** Print out unit learning guide, complete and upload in pdf form. Once mastered, select and complete a unit project, then upload in pdf form. Please ensure these are neat and organized. Learning guides must be submitted before writing unit exams.

## Unit 1: The building blocks of our body are cells & biological molecules

- Introduction to Cell Compounds
- Water
- pH
- Introduction to Biological Molecules
- Carbohydrates
- Lipids
- Proteins
- Nucleic Acids

## Unit 2: Let's look closer at the way cells are structured

- Introduction to Cell Structure
- Cell Structure/Function
- Cell Structural Interdependence
- Introduction to Cell Membranes
- Cell Membrane Function

## Unit 3: If cells are the building blocks, then DNA is the blueprint

- DNA
- Introduction to Protein Synthesis
- Protein Synthesis
- Introduction to Enzymes
- Enzymes
- Biotechnology

## **Unit 4: Providing energy to the body is the main job of digestion**

- Introduction to the Digestive System
- Digestive Structures
- Digestive Enzymes
- Insulin, Glucagon and Roles of the Liver

## **Unit 5: Our lungs are our central organs for exchanging gases**

- Respiratory Structures
- Inhalation and Exhalation
- Gas Exchange

## **Midterm Exam**

## **Unit 6: Blood is the primary transportation system within our bodies**

- Pulmonary and System Circulation
- Fetal Circulation
- Components of Blood
- Lymphatic System
- Capillary Fluid Exchange
- Introduction to the Heart
- Heart

## **Unit 7: The nervous system is the control center for our bodies**

- Neurons
- Impulse Generation
- Reflex Arc
- The Brain
- Peripheral Nervous System

## **Unit 8: After extracting energy, the body must remove waste**

- Urinary System
- Flow of Water
- The Nephron
- Structures
- Hormones

## **Unit 9: Reproduction is the key to our History & Future**

- Male Structure
- Testosterone
- Female Structure
- Cycles
- Implantation

## **Final Exam**

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## **Assessment**

### **Midterm and Final Exam**

\*all supervised exams must be written at your school or an approved testing center.

This 4-credit course will be broken down as follows:

**Learning Guides – 5%** of the overall grade.

**Projects – 30%** of the overall grade.

**Unit Exams – 30%** of the overall grade.

**Midterm Exam – 15%** of the overall grade.

**Final Exam – 20%** of the overall grade..