

**COURSE NAME:** BIO109 Human Biology II

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Credit Value: 5  
Total Course Hours: 70  
Prerequisite Course(s): BIO098 and CHM105 or Permission of Professor  
Corequisite Course(s): None

## COURSE DESCRIPTION

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This course continues after BIO098 to introduce the students to the basic concepts of biology, both general and human. Topics include the anatomy and physiology of the musculoskeletal, digestive, urinary, nervous, endocrine and reproductive organ systems, immune function, and an introduction to infectious organisms.

## PLAR INFORMATION

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This course is eligible for Prior Learning Assessment and Recognition. Students are advised to discuss options with their program coordinator.

## COURSE LEARNING OUTCOMES

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Upon completion of this course, the student will have reliably demonstrated the ability to:

- 1.0 Describe the location, development, structure and function of cells, tissues and organs in the musculoskeletal system.
  - 1.1 List the functions of the skeletal system.
  - 1.2 Classify the bones of the skeletal system and provide examples of each.
  - 1.3 Distinguish between compact and spongy bone.
  - 1.4 Distinguish between red and yellow bone marrow.
  - 1.5 Name and locate cranial and facial bones.
  - 1.6 Describe the structure of the vertebral column.
  - 1.7 Identify and locate the bones of the appendicular skeleton.
  - 1.8 Classify joints structurally and functionally.
  - 1.9 Describe the general structure of a synovial joint.
  - 1.10 Describe the movements allowed by synovial joints.
  - 1.11 List the functions of muscles.
  - 1.12 Identify and locate the major superficial muscles and muscle groups.
  - 1.13 Define the terms origin, insertion and action as they relate to muscles.
- 2.0 Identify the major components of the nervous system and describe their physiology.
  - 2.1 List the functions of the nervous system.
  - 2.2 Describe the functional divisions of the nervous system (afferent, efferent, PNS, CNS, ANS, sympathetic, parasympathetic).
  - 2.3 Describe the types of sensory receptors.
  - 2.4 Label a typical neuron and describe the function of each of its components.
  - 2.5 Distinguish among afferent, efferent and interneurons.
  - 2.6 Distinguish between white and grey matter.
  - 2.7 Name and list the function of neuroglia.
  - 2.8 Differentiate between cranial and spinal nerves.
  - 2.9 Identify the parts of the brain (cerebrum, cerebellum, brainstem) and state their main functions.
  - 2.10 Identify the lobes of the brain.
- 3.0 Identify the major components of the endocrine system and describe their physiology.
  - 3.1 Define hormone.
  - 3.2 Describe the function of the endocrine system and the role of hormones.
  - 3.3 Describe the relationship between the endocrine system and the ANS.
  - 3.4 Describe the relationship between the hypothalamus and pituitary gland.
  - 3.5 Identify hormones produced by the thyroid,

- parathyroid, pancreas and adrenal glands.
- 3.6 Give examples of relevant feedback loops.
- 3.7 Distinguish between long term and short term responses to stress.
- 4.0 Identify the major components of the reproduction system and describe their functions.
- 4.1 Identify male reproductive organs and list their functions.
- 4.2 Identify female reproductive organs and list their functions.
- 5.0 Identify the major components of the urinary system and describe their physiology.
- 5.1 List the functions of the urinary system.
- 5.2 Identify and describe the main function of the structures of the urinary system.
- 5.3 Describe the structure of a kidney.
- 5.4 Describe the formation of urine in the nephron.
- 6.0 Identify the major components of the digestive system and describe their physiology.
- 6.1 List the functions of the digestive tract.
- 6.2 Identify the primary and accessory organs of the digestive system, and list their general functions.
- 6.3 Describe how enzymes work with examples.
- 6.4 Define pH and discuss its importance in digestion.
- 7.0 Describe the functioning of the body's immune system, and distinguish among various types of infectious agents and describe how each infects the body.
- 7.1 List the functions of the skin.
- 7.2 Describe the general structure of the skin (layers, appendages).
- 7.3 List the functions of the lymphatic system.
- 7.4 Identify the structures of the lymphatic system and describe the main function of each.
- 7.5 Describe lymph and its role in immunity.
- 7.6 Distinguish among various types of leukocytes and describe their role in immunity.
- 7.7 Describe innate, non-specific immune responses.
- 7.8 Describe the normal flora of the human body and their importance.
- 7.9 Distinguish among various infectious agents, and briefly discuss their effects on the human body.
- 8.0 Perform laboratories applicable to the biology principles from the lectures.
- 8.1 Adhere to the Health and Safety Policy and Procedure and its regulations.
- 8.2 Collect and organize experimental data, and summarize and analyze results.
- 8.3 Perform basic laboratory operations.
- 8.4 Use lab equipment properly.
- 8.5 Conduct behaviour in a respectful and professional manner.

## GENERAL EDUCATION

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This is not a General Education course.

## PROGRAM OUTCOMES

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This course contributes to the following Ministry of Colleges and Universities approved program learning outcomes (PLO):

### Pre-Health Sciences Pathway to Certificates and Diplomas

1. Examine fundamental biological concepts, processes and systems of the human body, including the structure, function and properties of the molecules of life, cells, tissues and organ systems in relation to homeostasis and health.
4. Use health sciences and other science-related language and terminology appropriately to communicate clearly, concisely, and correctly in written, spoken, and visual forms.
6. Investigate health sciences and science-related questions, problems and evidence using the scientific method.

### Pre-Health Sciences Pathway to Certificates and Diplomas - Indigenous

1. Examine fundamental biological concepts, processes and systems of the human body, including the structure, function and properties of the molecules of life, cells, tissues and organ systems in relation to homeostasis and health.
4. Use health sciences and other science-related language and terminology appropriately to communicate clearly, concisely, and correctly in written, spoken, and visual forms.
6. Investigate health sciences and science-related questions, problems and evidence using the scientific method.

### ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES

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This course contributes to the following Ministry of Colleges and Universities approved essential employability skills (EES) outcomes:

1. Communicate clearly, concisely, and correctly in the written, spoken, and visual form that fulfils the purpose and meets the needs of the audience.
2. Respond to written, spoken, or visual messages in a manner that ensures effective communication
4. Apply a systematic approach to solve problems
5. Use a variety of thinking skills to anticipate and solve problems
6. Locate, select, organize, and document information using appropriate technology and information systems.
7. Analyse, evaluate, and apply relevant information from a variety of sources.
8. Show respect for the diverse opinions, values, belief systems, and contributions of others
9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
10. Manage the use of time and other resources to complete projects.
11. Take responsibility for one's own actions, decisions, and consequences.

### EXTERNAL COURSE ACCREDITATIONS AND CONDITIONS

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### COURSE EVALUATION

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Assignments - 20%, lab reports - 20%, tests - 60%

### PROGRAM SPECIFIC GRADING

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Per College Grading System

#### GRADING SYSTEM

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A+:	90-100%	B+:	77-79%	C+:	65-69%	D:	50-54%	S - Satisfactory
A:	85-89%	B:	73-76%	C:	60-64%	F:	0-49%	I - Incomplete
A-:	80-84%	B-:	70-72%	D+:	55-59%			F- Repeat Course, included in GPA
								FS- Failure Supplemental
								FR- Repeat course, excluded from GPA

\*For a complete chart of grades and descriptions, please see the Grading Policy.

## LEARNING RESOURCES

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### Required Resources:

Title 1: Human Biology, Anatomy & Physiology for the Health Sciences - Top Hat interactive textbook  
ISBN 1: 9781774126127  
Edition 1: 2nd edition

### Other Resources:

#### Required:

Lab coat and lab safety kit (which includes safety glasses, safety goggles, and nonlatex gloves)

Resources listed on the course outline support the achievement of learning outcomes, and may be used throughout the course to varying degrees depending on the instructor's teaching methodology and the nature of the resource.

## LEARNING ACTIVITIES

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Lecture, demonstrations, videos, animations, web resources, critical thinking questions/discussions, case studies, in-class problems sets and assignments, independent and group work, practical exercises

## DELIVERY MODE

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This course may be delivered, in whole or in part, in a number of modalities, including in class, online, hybrid, in a synchronous or asynchronous manner or a combination thereof, as per accreditation and/or regulatory standards where appropriate.

## ACADEMIC POLICIES

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Canadore College is committed to the highest standards of academic integrity, and expects students to adhere to these standards as part of the learning process in all environments. The College's Academic Integrity policy seeks to ensure that all students understand their rights and responsibilities in upholding academic integrity and that students receive an accurate and fair assessment of their work. Please review the Academic Integrity policy (A-18) and other academic policies found on our website:

<https://www.canadorecollege.ca/about/policies>.

## COLLEGE POLICIES

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- Protecting human rights in support of a respectful college community

For college policies please see: <http://www.canadorecollege.ca/about-us/college-policies>.

## **STUDENT SUCCESS SERVICES - Your Success Matters!**

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Student Success Services provides student-focused services to facilitate students' success in their studies. Staff provide support by reducing and/or removing educational-related barriers through individualized accommodations and supports to students with disabilities.

Please visit our webpage to learn more: <https://www.canadorecollege.ca/support/student-success-services> or look for our events on social media.

To connect with Student Success Services email [studentsuccessnow@canadorecollege.ca](mailto:studentsuccessnow@canadorecollege.ca) or call 705.474.7600 ext 5205.

### **FIRST PEOPLES' CENTRE:**

A culturally safe environment offering CONFIDENTIAL student focused services, drop in or make an appointment to access:

- One on one counselling
- Elder in residence program
- Peer tutoring
- Peer mentorship
- Lunch & learn workshops on study skills, self-care, life skills
- Learning Resource Centre

Drop by our offices at C254 College Drive, E101 Commerce Court or call 705 474 7600 Ext. 5961 College Drive / 5647 Commerce Court.

<https://www.canadorecollege.ca/experience/indigenous-student-experience>

## **WAIVER OF RESPONSIBILITY**

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Every attempt is made to ensure the accuracy of this information as of the date of publication. The college reserves the right to modify, change, add, or delete content.

## **HISTORICAL COURSE OUTLINES**

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Students use course outlines to support their learning. Students are responsible for retaining course outlines for future use in applications for transfer of credit to other educational institutions.