

**Columbia College
Human Biology Prep for Nurses (BIO0103)**

Lecture 1

Course Outline

Semester Dates: March 17, 2025 – April 19, 2025

Facilitator: Murad Ehsan

Email: murad.ehsan@columbia.ca

Class Time: 5:30 PM - 9:30 PM (Tues/Thurs.)

Room: Online class (MS Teams)

Credit: Non-Credit Course

Prerequisite: None

Note: It is the student's responsibility to be familiar with the information contained in the Course Outline and to clarify any areas of concern with the facilitator.

When a holiday falls on a scheduled class day or a class needs to be rescheduled, a make-up class will be scheduled for Friday. Students are required to be present at the rescheduled class.

Course Description:

The Pre-Nursing Professional student will focus on the basic Biology knowledge and skills required by persons employed in a variety of Health Care contexts. These include a study of human systems such as digestion, respiration, the circulatory system, the immune system, the excretory system, the nervous system, the senses, the endocrine and reproductive systems. Additional topics may be covered on an as needed basis. (5 weeks, 40 hrs.)

Classes are held online. Students will need access to a computer, a microphone, a camera, and a reliable internet connection during the scheduled class times. Instructions and login information for Microsoft Teams (online classroom) and Moodle will be provided to new students before classes begin.

The final exam will be held on campus. All students living within a 130 km radius of Calgary are expected to attend in person. The college is committed to following Alberta Health protocols for pandemic safety. Depending on public health measures, the exam may be moved online. Should this change occur, adequate notice will be provided to the students. Students who live more than 130km from Calgary should notify the principal of Academic Upgrading by the end of Class 1 if alternative arrangements are needed.

Learning Outcomes:

As a result of active participation in these sessions, a student can expect to:

- Identify carbohydrates, lipids, proteins.
- List and explain the basic functions and types of enzymes.
- Describe the importance of the oxygen delivery system; explain the functioning of the gas exchange and transport system.
- Describe the key features of the circulatory system, including the components of blood, the functioning of the heart and regulation of blood flow; explain the effects of exercise on blood pressure and pulse.
- Explain the functioning of the key features of the immune system.
- Identify the central components of the excretory system; discuss filtration and internal equilibrium.
- Describe kidney dysfunction.
- Describe the general functions of the nervous system.
- Identify the parts and functioning of the senses (ear, eye and nose).
- Describe the endocrine glands and the functions of their hormones.

- Describe the male and female reproductive system – anatomy and functioning.

Course Format:

This course uses a variety of teaching/learning methods including discussion, personal reflection, experiential exercises, student presentations, role-plays, group activities and especially case studies. Our faculty aims to create a learning environment where the learner is actively engaged in inquiry, critical thinking and problem solving. The classroom provides you with a place where you can learn with and from others in a cooperative and collaborative manner.

Learners are expected to take a very active part in class discussions and take responsibility for their own learning. Be a positive and co-operative team member. Columbia College uses a facilitation model of instruction where the facilitator's role is to facilitate learning. The expectation is that students will come to class prepared with pre-class homework completed. The facilitator will engage learners in activities that are based on their completed homework and readings. An enthusiastic and positive approach in the classroom will create an atmosphere that will help every student develop the knowledge, skills and attitudes that are needed for success.

How students conduct themselves in our classes will, to a large extent, mirror their conduct in society and at a future work site. For example, if they tend to ask questions, challenge the ideas of others in a respectful manner, draw out the best from their colleagues, and encourage both group development and task accomplishment in this class, it is likely they will do the same at work. A high level of student involvement and developing professionalism is expected in the classroom as learners work towards their goals.

Required Textbooks and Equipment:

Ritter, B., Burley, K. & Frazer, D. (2007). *Nelson Biology 20 – 30*: Nelson Education

Please call the Main Office (403-235-9300) to make arrangements for payment and textbook pick up.

Homework Assignment Due for the First Class:

Read Chapter 8 pages 242 – 270, The Digestive System and be prepared for a quiz on this homework.

Prepare 3 questions that have arisen from your reading that you would like to have answered. You will be instructed on how to submit these questions to your facilitator on the first day of your course.

Please note: You will not be reading the text in class. Columbia College follows a facilitation model that requires everyone to participate in the class. Please ensure that you know as much as possible before the class begins because there is not time to go over everything before writing a quiz.

Evaluation - Assessment of Student Performance:

The final grade in the course will be based on the following elements. Wherever possible facilitators will use rubrics to assess your performance and offer feedback.

| Title of Assignment/Examination | Due Date | Weight |
|---------------------------------|-------------|--------|
| Daily Tests | Every Class | 35% |
| In-class Learning Activities | Every Class | 15% |
| Final Exam | Class 10 | 50% |

Please note that all homework and assignments are due at the beginning of each class.

Grading:

Grades for each component will be added together at the end of the semester. The final total will be translated to the Columbia College's 4.0 grading scale as follows:

Marking and Grading Conversion:

| Description | Letter Grade | Grade Points | Percentage Scale | |
|--------------|--------------|--------------|------------------|----|
| Excellent | A+ | 4.0 | 100 | 95 |
| | A | 4.0 | 94 | 90 |
| | A- | 3.7 | 89 | 85 |
| Good | B+ | 3.3 | 84 | 80 |
| | B | 3.0 | 79 | 75 |
| | B- | 2.7 | 74 | 70 |
| Satisfactory | C+ | 2.3 | 69 | 65 |
| | C | 2.0 | 64 | 60 |
| | C- | 1.7 | 59 | 55 |
| Poor | D | 1.0 | 54 | 50 |
| Failure | F | 0.0 | 49 | 0 |

Please note that the passing grade is "C+" in this course.

Submission and Completion of Assignments:

You are expected to submit assignments by the due date. Any late assignments may be assessed a marking penalty of 5% per day. If you are unable to submit an assignment on the due date, you must request an extension **before** the due date by filling out an *Application for Assignment Extension form* (SSPP-F012) that is to be submitted to the Department Chair for approval. This form is available on Columbia's website, Bldg. 802 – Main Office and from Department Chairs.

Requesting an Examination Deferral:

If you are requesting an exam to be deferred, you must submit an Application for *Deferred Examinations form* (SSPP-F012) to the Department Chair **within 48 hours of the missed examination date and time**. Applications for deferred examinations will only be considered due to medical or personal emergency. A medical certificate or other appropriate documentation may be required. This form is available on Columbia's website, Bldg. 802-Main Office and from Department Chairs.

Attendance Requirements:

Columbia College believes that students are committed to their program and learning experiences. However, it is understood that there are times when students may be absent. Any absences can be viewed as a potentially serious disruption of the learning process and necessary achievement of the learning objectives. Being late is also considered unacceptable as it interferes with the learning opportunities of others. Unavoidable absences or lateness must be reported to the course facilitator in advance. Please refer to Columbia College's *Attendance Policy and Regulations (ADM-P151)* for detailed information on Attendance Requirements.

Academic Integrity:

Academic dishonesty is a serious offence and can result in suspension or expulsion from Columbia College.

There is no tolerance for academic dishonesty and any student caught plagiarizing is subject to serious sanctions as outlined in the *Student Code of Conduct Policy (ADM-P229)*. Students are encouraged to familiarize themselves with this policy and avoid any behavior that could possibly be seen as cheating, plagiarizing, misrepresenting, or putting into question the integrity of one's academic work.

Student Conduct:

It is the responsibility of each student to uphold the expectations and responsibilities outlined in the *Student Code of Conduct Policy (ADM-P229)* and any additional requirements established by your program.

Generally, each student will:

- be respectful and courteous toward others.
- demonstrate appropriate and supportive communication skills, and coach, assist, advise and otherwise support other students in their studies.
- manage any personal stress and conflict in a positive and resourceful manner and assist others to do the same.
- be dressed in a manner appropriate for their workplace or learning environment, as established by the program.
- conduct themselves in a professional manner with regard to their communication with others and their behavior in class.
- conduct themselves with academic integrity in all of their learning activities, tests, exams, and assignments.
- keep up with day-to-day classroom and course expectations.

Important Dates:

| Description | Date |
|---|--|
| Last to add/drop courses | 5 school operating days from the start of the semester OR before the third scheduled class, whichever is greater |
| Last day to withdraw without academic penalty | 50% or less of the semester has been completed |
| Final Examination | A final exam may take many formats. If a final exam is scheduled, it will be taken in an assigned room under the supervision of a Test Proctor. <u>Students must be on time as they will not be permitted to enter once the exam has started.</u> Exam schedules are available in each building on a bulletin board, as well |

as online at www.columbia.ab.ca/exams. It is the student's responsibility to check this exam posting.

Appeals:

Please refer to the *Student Appeal Policy (ADM-P177)*.

Students with Temporary or Permanent Disabilities:

Students with temporary or permanent disabilities or medical condition may apply for accommodations. To be considered for an accommodation, a student must register with Columbia College's Accessibility Services by making an appointment with a Accessibility Services Advisor – Main Office – Bldg. 802 or emailing accessibilityservices@columbia.ab.ca. The Department Chair or facilitator is not able to provide you with any accommodations without you taking this step. Please refer to Columbia College's website to review *the Accommodation Policy and Handbook (ADM-P188)*.

Student Support:

Students should be aware that Life Coaching, Career and Disability Services, and Student Support Services (i.e., tutoring, academic strategists, etc.) are provided by Columbia College. Inquire how to request these services at the Main Office in building 802. It is the student's responsibility to discuss their specific learning needs with the appropriate service provider.

Class Schedule/Overview:

Please note that this schedule is subject to change. Any changes or cancellations will be emailed to you. It is your responsibility to check the email address you have given to the school on a daily basis for any messages from the Department Chair/designate, facilitator or College Administration. It is the student's responsibility to be familiar with the information contained in the Course Outline and to clarify any areas of concern with the facilitator.

Additional homework may be assigned in class.

| Class Session | Topics | Pre-Class Readings/Homework |
|---------------|--|---|
| 1 | Digestive System 8.1 Essential Nutrients 8.2 Enzymes 8.3 Ingestion 8.4 Digestion | <ul style="list-style-type: none"> • Read Chapter 8 • Create 3 questions based on your reading to hand in to the facilitator. Bring these to class and hand in to the facilitator. This is a facilitation model; therefore, you will need to participate in the class. You will not be reading the text in class. You will have a quiz on your reading. |
| 2 | Respiration System 9.1 The Importance of an Oxygen Delivery System 9.2 Gas Exchange and Transport 9.3 Regulation of Breathing Movements | <ul style="list-style-type: none"> • Read Chapter 9 • Create 3 questions based on the reading. |
| 3 | The Circulatory System 10.1 Blood Vessels 10.2 The Heart 10.3 Regulation of Blood Flow 10.4 Capillary Fluid Exchange | <ul style="list-style-type: none"> • Read Chapter 10 • Create 3 questions based on the reading. |
| 4 | The Immune System 11.1 Components of Blood 11.2 The Body's Lines of Defence 11.3 Malfunctions of the Immune System | <ul style="list-style-type: none"> • Read Chapter 11 • Create 3 questions based on the reading. |
| 5 | The Excretory System 12.1 Waste Excretion and Internal Equilibrium 12.2 Kidney Dysfunction | <ul style="list-style-type: none"> • Read Chapter 12 • Create 3 questions based on the reading. |
| 6 | The Nervous System <ul style="list-style-type: none"> • 13.1 The Importance of the Nervous System • 13.2 Electrochemical Impulse • 13.2 Central Nervous System • 13.4 Peripheral Nervous system | <ul style="list-style-type: none"> • Read Chapter 13. • Create 3 questions based on the reading. |
| 7 | The Senses <ul style="list-style-type: none"> • 14.1 Sensory Information • 14.2 Structure of the Eye • 14.3 Hearing and Equilibrium | <ul style="list-style-type: none"> • Read Chapter 14 • Create 3 questions based on the reading. |
| 8 | Endocrine System <ul style="list-style-type: none"> • 15.1 Homeostasis, Hormones, and the Endocrine System • 15.2 Hormones that Affect Blood Sugar • 15.3 Hormones that Affect Metabolism • 15.4 Hormones Affecting Water and Ion Balance • 15.5 Adjustments to Stress | <ul style="list-style-type: none"> • Read Chapter 15 • Create 3 questions based on the reading. |
| 9 | Reproduction and Development <ul style="list-style-type: none"> • 16.1 The Male Reproductive System • 16.2 The Female Reproductive System • 16.3 Fertilization, Pregnancy, and Birth | <ul style="list-style-type: none"> • Read Chapter 16 • Create 3 questions based on your reading to hand in to the facilitator |

| Class Session | Topics | Pre-Class Readings/Homework |
|----------------------|--|------------------------------------|
| 10 | 3-hour In Person Final Exam – location to be announced | |