

**Columbia College**  
**Biology Skills for Health Care Professionals 2 (BIO102)**

**Lecture 1**

**Course Outline**

Semester Dates: May 24 to June 25, 2016

Please note that when a holiday falls during the week, your class will be rescheduled for the Friday of that week. Students are required to make arrangements to be present at the rescheduled class.

Facilitator: Tanvir Burni

Email: tanvirb@columbia.ab.ca

Class Time: 5:30 PM - 9:30 PM (Tue./Thur.)

Room: 4-159

Credit: Non-Credit Course

Prerequisite: None

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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.

**Course Description:**

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

**Learning Outcomes:**

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

- 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.
- Understand the field of genetics as the study of the inheritance of particular characteristics that are passed on through the family generations.
- Understand that all organisms require DNA in each cell to encode the instructions necessary to live and produce.
- Understand the genetic basis for population change.
- Understand how to measure and account for changes in populations.

### Course Overview:

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. The classroom provides you with a place where you can learn with and from others in a cooperative and collaborative manner.

You are expected to take a very active part in class. Be a positive and co-operative team member.

### Required Textbooks and Equipment:

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

### Recommended Readings and Resources:

*Students may access these sources from the College and from home.*

ProQuest Nursing and Allied Health, Canadian Business and Current Affairs, and Canadian Newsstand

- <http://proquest.umi.com/login>  
Username: cc-library  
Password: welcome

GALE InfoTrac Custom Journals

- <http://infotrac.galegroup.com/itweb/calg145?db=SP00>  
Password: cclibrary09

### Homework Assignment Due for the First Class:

- Read Chapter 13.
- Create 3 questions based on the reading. 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

### 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 Quizzes	Every Class	30%
In-class Learning Activities	Every Class	10%
Review Assignment	Day 9	10%
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

**For Practical Nurse and Dental Assistance students who are provisionally accepted into their respective programs at Columbia College, the passing grade for this course is a B. Please note that these students must also score a B on the final exam..**

**Submission and Completion of Assignments:**

You are expected to submit assignments by the due date. Any late assignments will be assessed a marking penalty of 5% per each class late.

**Requesting an Examination Deferral:**

If you are not able to do an exam on the scheduled date, you may request that the exam be deferred to another date. The fee for a Deferred Exam is \$50 plus facilitation costs for a minimum cost of \$100.00.

**Attendance Requirements:**

Please come to each class on time and stay to the end of the class.

**Academic Integrity:**

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

**Student Conduct:**

Generally, each student is expected to:

- 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.

**Appeals:**

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

**Students with Temporary or Permanent Disabilities:**

Students with temporary or permanent disabilities 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 [disabilityservices@columbia.ab.ca](mailto:disabilityservices@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)*. Please note that there are fee-based services related to accessibility needs.

**Student Support:**

Tutoring is available as a fee-based service.

**Class Schedule/Overview:**

Please note that this schedule is subject to change

Class Session	Topics	Pre-Class Readings/Homework
1	<b>The Nervous System</b> 13.1 The Importance of the Nervous System 13.2 Electrochemical Impulse 13.2 Central Nervous System 13.4 Peripheral Nervous system	Read Chapter 13. <ul style="list-style-type: none"> <li>Create 3 questions based on the reading. 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.</li> </ul>
2	<b>The Senses</b> 14.1 Sensory Information 14.2 Structure of the Eye <ul style="list-style-type: none"> <li>14.3 Hearing and Equilibrium</li> </ul>	Read Chapter 14 <ul style="list-style-type: none"> <li>Create 3 questions based on your reading to hand in to the facilitator.</li> </ul>
3	<b>Endocrine System</b> 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 <ul style="list-style-type: none"> <li>15.5 Adjustments to Stress</li> </ul>	Read Chapter 15 <ul style="list-style-type: none"> <li>Create 3 questions based on your reading to hand in to the facilitator.</li> </ul>
4	<b>Reproduction and Development</b> 16.1 The Male Reproductive System 16.2 The Female Reproductive System <ul style="list-style-type: none"> <li>16.3 Fertilization, Pregnancy, and Birth</li> </ul>	Read Chapter 16 <ul style="list-style-type: none"> <li>Create 3 questions based on your reading to hand in to the facilitator</li> </ul>
5	<b>Cell Division</b> 17.1 The Cell Cycle 17.2 Applications of the Cell Cycle 17.3 Meiosis <ul style="list-style-type: none"> <li>17.4 Abnormal Meiosis</li> </ul>	Read Chapter 17 <ul style="list-style-type: none"> <li>Create 3 questions based on your reading to hand in to the facilitator.</li> </ul>
6	<b>The Basis of Heredity</b> 18.1 Gregor Mendel – Pioneer of Genetics 18.2 Probability and Inheritance of Single Traits 18.3 Pedigree Charts 18.4 Other Patterns of Inheritance <ul style="list-style-type: none"> <li>18.5 Dihybrid Crosses and Polygenic Traits</li> </ul>	Read Chapter 18 <ul style="list-style-type: none"> <li>Create 3 questions based on your reading to hand in to your facilitator.</li> </ul>
7	<b>Beyond Mendel</b> 19.1 Chromosomes and Genetics 19.2 Gene Linkage and Crossover <ul style="list-style-type: none"> <li>19.3 DNA is the Hereditary Material</li> </ul>	Read Chapter 19 <ul style="list-style-type: none"> <li>Create 3 questions based on your reading to hand in to your facilitator.</li> </ul>
8	<b>The Genetic Basis for Population Change</b> 21.1 Characteristics of Populations 21.2 Genetic Drift including Case Study Antibiotic Resistant Bacteria <ul style="list-style-type: none"> <li>21.3 Factors Affecting Population Change</li> </ul>	Read Chapter 21. <ul style="list-style-type: none"> <li>Create 3 questions based on your reading to hand in to your facilitator.</li> </ul>
9	<b>Review</b>	<ul style="list-style-type: none"> <li>All chapters</li> </ul>
10	<ul style="list-style-type: none"> <li><b>Final Exam – Location to be announced 2 hr.</b></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>