

**Columbia College**

**Biology Skills for Health Care Professionals 1 (BIO0101)**

**Lecture 1**

**Course Outline**

Semester Dates: February 06, 2017 to March 11, 2017

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: Dr. Sabahat Zia

Email: [sabahatz@columbia.ab.ca](mailto:sabahatz@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 review of human systems such as the digestive, respiratory, motor, circulatory, excretory, and the immune systems. 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 cellular respiration.
- 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.

**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. 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.

You are expected to take a very active part in class discussions and take responsibility for your 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 your learning. The expectation is that you will come to class prepared with pre-class homework completed. Your facilitator will engage you in activities that are based on your completed homework and readings. Your 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 you conduct yourself in our classes will, to a large extent, mirror your conduct in society and your future work site. For example, if you have a tendency to ask questions, challenge the ideas of others in a respectful manner, draw out the best from your colleagues, and encourage both group development and task accomplishment in this class, it is likely you will do the same at work. A high level of student involvement and developing professionalism is expected in the classroom as you work towards your goal.

### **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

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

GALE InfoTrac Custom Journals

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

### **Homework Assignment Due for the First Class:**

1. Read Chapter 7.
2. 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.

<b>Title of Assignment/Examination</b>	<b>Due Date</b>	<b>Weight</b>
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 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 student 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:**

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 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](mailto: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)*.

## Important Dates:

<b>Description</b>	<b>Date</b>
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 dates, times, and location are posted by the main office Bldg. 802 and by the library in Bldg. 4. <u>It is the student's responsibility to check this exam posting.</u>

## 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 Disability Services by making an appointment with a Disability 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)*.

## 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.

<b>Class Session</b>	<b>Topics</b>	<b>Pre-Class Readings/Homework</b>
<b>1</b> <b>February 7</b>	<b>The importance of Biology</b> <b>The importance of cellular respiration</b>	<ul style="list-style-type: none"> <li>• Read Chapter 7.</li> <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>
<b>2</b> <b>February 9</b>	<b>Digestive System 1</b> 8.1 Essential Nutrients 8.2 Enzymes	<ul style="list-style-type: none"> <li>• Read Chapter 8 p.242 -258</li> <li>• Create 3 questions based on your reading to hand in to the facilitator.</li> </ul>
<b>3</b> <b>February 14</b>	<b>Digestive System 2</b> 8.3 Ingestion 8.4 Digestion	<ul style="list-style-type: none"> <li>• Read Chapter 8 p. 259-270</li> <li>• Create 3 questions based on your reading to hand in to the facilitator.</li> </ul>
<b>4</b> <b>February 16</b>	<b>Respiration System</b> 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"> <li>• Read Chapter 9</li> <li>• Create 3 questions based on your reading to hand in to the facilitator</li> </ul>
<b>5</b> <b>February 21</b>	<b>The Circulatory System 1</b> 10.1 Blood Vessels 10.2 The Heart	<ul style="list-style-type: none"> <li>• Read Chapter 10 p,310-327</li> <li>• Create 3 questions based on your reading to hand in to the facilitator.</li> </ul>
<b>6</b> <b>February 23</b>	<b>The Circulatory System 2</b> 10.3 Regulation of Blood Flow 10.4 Capillary Fluid Exchange	<ul style="list-style-type: none"> <li>• Read Chapter 10 p.328-339</li> <li>• Create 3 questions based on your reading to hand in to your facilitator.</li> </ul>
<b>7</b> <b>February 28</b>	<b>The Immune System</b> 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"> <li>• Read Chapter 11</li> <li>• Create 3 questions based on your reading to hand in to your facilitator.</li> </ul>
<b>8</b> <b>March 2</b>	<b>The Excretory System</b> 12.1 Waste Excretion and Internal Equilibrium 12.2 Kidney Dysfunction	<ul style="list-style-type: none"> <li>• Read Chapter 12.</li> <li>• Create 3 questions based on your reading to hand in to your facilitator.</li> </ul>
<b>9</b> <b>March 7</b>	<b>Review</b>	<ul style="list-style-type: none"> <li>• All chapters</li> </ul>
<b>10</b> <b>March 9</b>	<i>Final Exam – Location to be announced.</i> <i>3 hr. exam</i>	

## Appendix 1 Assignment Outlines

### In class Activities – Value 10%

Your facilitator will ask you to take part in a variety of specific learning activities. You will be evaluated on how well you do these activities. Please review the rubric that is attached to this syllabus to learn about this area of evaluation.

### **BIO 101 STUDENT GROUP ASSIGNMENT: STUDY PACKAGE AND PRESENTATION**

**Value: 10% of final grade (Please see rubrics appended.)**

**Due: Class 9**

- Topics declared on Class 2
- The goal of this assignment is for students to learn how to work together and to learn how to prepare study guides from assigned text chapters.
  - In the nursing program, group work will be an essential component.
  - You must have the skills to work well in a group setting.
  - In study cohorts, students rely on one another in order to make studying for exams easier.
  - In order to have successful study cohorts, students must learn to trust one another's work.
- In groups of 2, students will prepare a study review package from one of the topics covered in class
  - Must include a handout for each member of the class and for the instructor
  - This study package must contain **ALL** relevant material that your peers will need to study for the final exam
- Groups will also present a 10 minute oral presentation to the class, **summarizing one or two key points** from their review package
  - Must include a visual component (i.e. PPT, overheads, use of board, poster, etc.)

**Appendix 2  
Rubrics**

**Columbia College  
Student Presentation and Study Guide Assignment  
Last Revised: April 2014**

Student's Name	Course Code	Date	Facilitator/Evaluator's Name	
<b>CRITERIA</b>	<b>SUPERIOR (10.0)</b>	<b>ADEQUATE (7.5)</b>	<b>MINIMAL (5.0)</b>	<b>SCORE</b>
<b>CONTENT (50%)</b>	<ul style="list-style-type: none"> <li>Begins with a clear and concise overview of the topic and ends with a clear and concise summary of key points.</li> <li>Significantly increases audience understanding and knowledge of topic.</li> <li>All key points from the chapter are included.</li> </ul>	<ul style="list-style-type: none"> <li>Begins with an overview of the topic and ends with a summary of key points.</li> <li>Raises audience understanding and awareness of most key points.</li> <li>Most of the key points from the chapter are included.</li> </ul>	<ul style="list-style-type: none"> <li>The overview and/or summary of key points is missing or incomplete.</li> <li>Raises audience awareness and understanding of some key points.</li> <li>Many key points from the chapter are missing.</li> </ul>	
<b>ORGANIZATION (20%)</b>	<ul style="list-style-type: none"> <li>The information is presented in a logical, interesting sequence which the audience can follow.</li> <li>Visual aids enhance understanding and capture the audience's attention. Font sizes, spacing and headings are used effectively.</li> </ul>	<ul style="list-style-type: none"> <li>The information is presented in a logical sequence which the audience can follow.</li> <li>Visual aids are used, but the structure is somewhat distracting. Font sizes may be too small, spacing may be cluttered or headings are unclear.</li> </ul>	<ul style="list-style-type: none"> <li>Audience has difficulty understanding the information because there is no clear or logical sequence of material.</li> <li>Visual aids are not used or they detract from audience understanding. Poor use of spacing, font sizes and headings.</li> </ul>	
<b>MECHANICS (5%)</b>	<ul style="list-style-type: none"> <li>There are no misspellings or grammatical errors.</li> </ul>	<ul style="list-style-type: none"> <li>There are no more than three misspellings and/or grammatical errors.</li> </ul>	<ul style="list-style-type: none"> <li>There are four or more misspellings and/or grammatical errors.</li> </ul>	



CRITERIA	SUPERIOR (10.0)	ADEQUATE (7.5)	MINIMAL (5.0)	SCORE
<b>DELIVERY (25%) PRESENTATION</b>	<ul style="list-style-type: none"> <li>The speaker delivers the message in a confident, poised, enthusiastic manner.</li> <li>The volume and rate varies to add emphasis and interest.</li> <li>Pronunciation and enunciation are very clear.</li> <li>The speaker exhibits very few disfluencies, such as “ahs”, “uhms”, or “you knows”.</li> <li>The speaker holds the attention of the entire audience with the use of direct eye contact, seldom looking at notes.</li> <li>Visual aids enhance understanding and capture the audience’s attention. Font sizes, spacing and headings are used effectively.</li> <li>Presentation length is within 2 minutes of allotted time.</li> </ul>	<ul style="list-style-type: none"> <li>The volume is not too low or too loud and the rate is not too fast or too slow.</li> <li>The pronunciation and enunciation are clear.</li> <li>The speaker exhibits few disfluencies, such as “ahs”, “uhms”, or “you knows”.</li> <li>Consistent use of direct eye contact with audience, but still returns to notes.</li> <li>Visual aids are used, but the structure is somewhat distracting. Font sizes may be too small, spacing may be cluttered or headings are unclear.</li> <li>Presentation length is within 4 minutes of allotted time.</li> </ul>	<ul style="list-style-type: none"> <li>The volume is too low or too loud and the rate is too slow or too fast.</li> <li>The pronunciation and enunciation are unclear.</li> <li>The speaker exhibits many disfluencies, such as “ahs”, “uhms”, or “you knows”.</li> <li>The listener is distracted by problems in the delivery of the message and has difficulty understanding the words in the message.</li> <li>Displays minimal eye contact with audience, while reading mostly from notes.</li> <li>Visual aids are not used or they detract from audience understanding. Poor use of spacing, font sizes and headings.</li> <li>Presentation is at least 5 minutes above or below allotted time.</li> </ul>	

**Total Score out of 40:**

**Facilitator/Evaluator’s Comments:**