Course Outline

College and Career Preparation

Fall, 2017

BIOL 030B, Biology 030
5 Credits, 6 hours lecture + 2 hours lab

Topics studied include the scientific method, principles of classification and population ecology, biological macromolecules, DNA and protein synthesis, cells and cell membranes, enzyme structure and function, human body systems (anatomy and physiology) and the concept of homeostasis.

Prerequisites & Corequisites

Biology 20 or 25 (with a grade of 60% or better) & *English 10*

Instructor

Linda Milette
CC-205R
780-791-4830
linda.milette@keyano.ca

Office Hours

Mondays	9:00 – 9:50 AM
Tuesdays	3:00 – 3:50 PM
Wednesdays	9:00 – 9:50 AM & 12:00 – 12:50 PM
Thursdays	3:00 – 3:50 PM

Hours of Instruction

Monday Labs (Sec Y)	2:00 – 3:50 PM	Room CC234 (*lab dates noted on Calendar, page 4*)
Tuesday Lectures	8:00 – 9:50 AM	Room S110
Thursday Lectures	8:00 – 9:50 AM	Room S110
Friday Lectures	8:00 – 9:50 AM	Room S110

Required Resources

Inquiry into Life by S. S. Mader & M. Windelspecht, 14th Ed., McGraw Hill, ISBN 978-0-07-352552-5
Biology 030 Student Course Package, available in the Keyano Bookstore

Other Required Supplies:
Calculator - scientific
Lab Coat—must be knee-length *(available at Keyano Bookstore)*
Lab Pants that cover the ankle
Extra-Large Zip Lock Bag *(for lab, available at Keyano Bookstore)*

Course Outcomes

Upon successful completion of this course, students will be able to:

- Describe the chemical nature of carbohydrates, lipids, proteins, and nucleic acids, including enzyme action and factors influencing their action.
- Describe how genetic information is contained in the sequence of bases in DNA molecules in chromosome, how the DNA molecules replicate themselves, and how genetic information is transcribed into RNA and translated into sequences of amino acids in proteins.
- Explain, in quantitative and qualitative terms, how gene pools change over time.
- Describe the general characteristics of the three domains of life and the fundamental principles of taxonomy and binomial nomenclature.
- Explain population growth patterns and the interactions of individuals within and between populations.
- Explain the relationship between developments in imaging technology and the current understanding of cell types and structures, including the functions of cell organelles and membranes in maintaining homeostasis.
- Describe the levels of organization of matter in creating human tissues and systems.
- Explain the role of the circulatory and defense systems in maintaining an internal equilibrium.
- Explain how the human digestive, respiratory, and excretory systems exchange energy and matter with the environment.
- Explain the role of the musculoskeletal system in the function of other body systems.
- Explain how the nervous system controls physiological processes.
- Explain how the endocrine system is a chemical control system that contributes to homeostasis.
- Explain how survival of the human species is ensured through reproduction, and how reproduction is regulated by chemical control systems.
- Show concern for safety in planning, carrying out and reviewing laboratory activities in a biohazard level II laboratory, referring to WHMIS and consumer product labels.
- Work collaboratively in planning and carrying out laboratory investigations and in generating and evaluating scientific ideas.

Evaluation*

Assignments, Activities, Quizzes	20 %
Prelab Quizzes / Projects / Lab Checklists / Formal Report	15 %
Lab Exam	5 %
Midterm Exam	30 %
Final Exam	30 %
TOTAL	100 %

***** *as per the Classroom Policies and Procedures posted on the Moodle Course page: late assignments / projects / report will receive a grade deduction or a zero grade if submitted after assignments are returned to the class. In class quizzes cannot be written at a later date, and Moodle quizzes will not be reopened after they close.*

The minimum pre-requisite for progression is 1.7 (refer to Grading System below)

Grading System

Descriptor	4.0 Scale	Percent
	4.0	96 – 100
Excellent	4.0	90 – 95
	3.7	85 – 89
	3.3	81 – 84
Good	3.0	77 – 80
	2.7	73 – 76
	2.3	69 – 72
Satisfactory	2.0	65 – 68
Minimum Prerequisite	**1.7**	**60 – 64**
Poor	1.3	55 – 59
Minimum Pass	1.0	50 – 54
Failure	0.0	0 – 49

Proposed Schedule of Topics

Units of Study	Text References	Labs
Unit 1 – The Organization of Life		
▪ the study of life	Ch. 1	
▪ the molecules of cells	Ch. 2	
▪ DNA structure and gene expression	Ch. 25	
▪ evolution and diversity	Ch. 27	**#1**
▪ population and community ecology	Ch. 34	
Unit 2 – The Organization of Cells		
▪ cell structure and function	Ch. 3	**#2**
▪ membrane structure and function	Ch. 4	
▪ energy and enzymes	Ch. 6	
▪ human organization	Ch. 11	
MIDTERM EXAM (Unit 1 & 2)		
Unit 3 – The Organization of Human Support Systems		
▪ circulation, blood	Ch. 12	**#3**
▪ lymphatics and immunity	Ch. 13	
▪ digestion	Ch. 14	
▪ respiration and excretion	Ch. 15, 16	**#4**
Unit 4 – The Organization of Human Control Systems		
▪ nervous system and senses	Ch. 17, 18	**#5**
▪ musculoskeletal system	Ch. 19	
▪ endocrine system	Ch. 20	
▪ reproduction and development	Ch. 21	

LAB EXAM (based on all five labs) & FINAL EXAM (Unit 3 & 4)

Calendar of Important Events

Dates on the following calendar are tentative; shaded areas indicate no Biology 030 classes/labs.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	**September 4** ***Labour Day – College Closed***	5 **Orientation Day**	6 *First day of classes*	7 Intro & Ch.1	8 Ch. 3
2	11	12 Ch.3	13	14 Ch.4	15 Ch.4
3	18 **LAB INTRO** Room: TBA	19 Ch.25	20	21 Ch. 25	22 Ch.27
4	25	26 Ch.27	27	28 Ch. 27	29 Ch.34
5	**October** 2 **LAB #1**	3 Ch.34	4	**5** Ch. 2	6 Ch. 2
6	**9** ***Thanksgiving Day – College Closed***	10 Ch. 6	11	12 Ch. 6	13 Ch. 11
7	16 **Lab # 2**	17 Ch.11	18	19 Ch.12	20 Ch.12
8	23 **MIDTERM EXAM**	24 **Ch. 12/13** **IMMUNITY ASSIGN.**	25	26 Ch.14	27 Ch. 14
9	30	31 Ch. 15	**November** 1	2 Ch. 15	3 Ch. 16
10	6 **Lab # 3**	7 **Ch. 16**	**8**	**9** ***Reading Day – No Classes***	**10** ***Reading Day – No Classes***
11	13 ***Remembrance Day (in lieu of) – College Closed***	14 Ch.17	15	16 Ch.17	17 Ch. 17/18
12	20 **Lab # 4**	21 Ch.19	22	23 Ch. 19	24 Ch.20
13	27 **Lab # 5**	28 Ch.20	29	30 Ch.20	**December** 1 Ch. 21
14	4 **LAB EXAM**	5 Ch. 21	6	7 Ch. 22/Review **Last Day of Classes**	8
15	**11** **Final Exams**	**12** **Final Exams**	**13** **Final Exams**	**14** **Final Exams**	**15** **Final Exams**

Please Note:

Date and time allotted to each topic is subject to change.

****Final exam dates are scheduled by the College.***

Do not book travel before December 16th, 2017.

Performance Requirements

Student Responsibilities

It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms. Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College credit calendar.

More specific details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

Laboratory Safety

In the science laboratories, safety is important.

Students must complete the *WHMIS for Students* online training course on Moodle before entering the science laboratories.

Students must comply with the mandatory laboratory safety rules for this course as provided in the laboratory manual. Failure to do so will result in progressive discipline such as a verbal warning, refused entry into the laboratory, or suspension from the College.

Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a student's learning experience. Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams). Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes. Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar.

It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, **you must successfully complete the online tutorial** found on ilearn.keyano.ca. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate.

Specialized Supports

Counselling and Accessibility Services

Counselling Services provides a wide range of specialized counselling services to prospective and registered students, including personal, career and academic counselling.

SKILL Centre

The SKILL Centre is a learning space in the Clearwater Campus at Keyano College where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.

The SKILL Centre, through a variety of delivery methods, provides assistance in skill development to Keyano students. Assistance is provided by instructors, staff and student tutors. Individuals wishing to improve their mathematics, writing, grammar, study, or other skills, can take advantage of this unique service.

Authorization

This course outline has been reviewed and approved by the Program Chair.

Linda Milette, Instructor

Lisa Turner, Chair — Date Authorized

Vincella Thompson, Dean — Date Authorized

Signed copies to be delivered to:
Instructor
Registrar's Office