Course Outline

College and Career Preparation

Fall, 2019

BIOL 025A, Biology 25
6 Credits, 6 hours lecture

Topics studied include an introduction to biology and the scientific method; the biosphere, ecosystems and communities; cell structure and function, including photosynthesis, cellular respiration, and cell division; principles of genetics and genetic engineering, and evolutionary theory, including biological classification methods and the domains of life.

Alberta Education Course Equivalency: Science 10 (Biology unit) and Biology 20
Co-requisites: ENGL 10-2 or ENGL 10-1 or permission from the Program Chair

Instructor

Patricia Collins
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780-791-8955
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Office Hours

Monday	3:00 p.m. –	3:50 p.m.
Wednesday	1:00 p.m. –	2:50 p.m.
Thursday	3:00 p.m. –	3:50 p.m.
Friday	9:00 a.m. –	9:50 a.m.

Hours of Instruction

Monday	1:00 p.m. –	2:50 p.m.	Room CC235
Tuesday	3:00 p.m. –	4:50 p.m.	Room CC235
Wednesday	3:00 p.m. –	4:50 p.m.	Room CC235

Required Resources

Prentice Hall Biology by K. Miller & J. Levine, Prentice Hall (2010), ISBN 0-13-369009-1

Course Outcomes

Upon successful completion of the course, the student shall be able to:

- appreciate that scientific understanding evolves from the interaction of ideas involving people with different views and backgrounds.
- seek and apply evidence using the scientific method when evaluating alternative approaches to investigations, problems and issues.
- explain the cycling energy and matter through the biosphere and ecosystems.

Course Outcomes (cont'd)

- explain how the biosphere is composed of ecosystems, each with distinctive biotic and abiotic characteristics.
- demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment.
- describe the cell theory, and function of cell organelles and structures in a cell, in terms of life processes, and use models to explain these processes and their applications.
- relate photosynthesis to storage of energy in organic compounds.
- compare and contrast the roles of glycolysis, respiration, and fermentation in releasing potential energy from organic compounds.
- describe, in words and in diagrams, the processes of mitosis and meiosis.
- explain the basic rules and processes associated with the transmission of genetic characteristics.
- explore classical genetics at the molecular level, including several human genetic disorders.
- explain several mechanisms involved in the change of populations over time.
- describe a community as a composite of populations in which individuals contribute to a gene pool that can change over time.
- explain the types of interaction of individuals within and between populations.
- describe the fundamental principles of taxonomy and binomial nomenclature, and the defining characteristics of the six kingdoms of life.

Evaluation

Daily Work and Quizzes	30%
Projects	20%
Midterm Exam (Unit 1 through Unit 4, Part 1)	25%
Final Exam (Unit 4, Part 2 through Unit 6)	25%

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

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	**Textbook References**
UNIT 1: The Nature of Life	
1. The Science of Biology	Chapter 1
2. The Chemistry of Life	Chapter 2
UNIT 2: Ecology	
1. The Biosphere	Chapter 3
2. Ecosystems and Communities	Chapter 4
3. Populations	Chapter 5
4. Humans in the Biosphere	Chapter 6
UNIT 3: Cell Biology	
1. Cell structure and function	Chapter 7
2. Photosynthesis	Chapter 8
3. Cellular Respiration and Fermentation	Chapter 9
4. Cell Growth and Division	Chapter 10
UNIT 4 Part 1: Genetics	
1. Introduction to Genetics	Chapter 11
MIDTERM EXAM	
UNIT 4 Part 2: Genetics	
1. DNA	Chapter 12
2. RNA and Protein Synthesis	Chapter 13
3. Human Heredity	Chapter 14
4. Genetic Engineering	Chapter 15
UNIT 5: Evolution	
1. Darwin's Theory of Evolution	Chapter 16
2. Evolution of Populations	Chapter 17
3. Classification	Chapter 18 & DOL 1-5
4. History of Life	Chapter 19
UNIT 6: Overview of Kingdoms of Life	
1. Viruses and Prokaryotes	Chapter 20 & DOL 6-9
2. Protists and Fungi	Chapter 21 & DOL 10-19
FINAL EXAM	

Calendar of Important Events

Dates on the following calendar are tentative; shaded areas indicate no Biology 025 classes.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	Sept 2 Labour Day Holiday	3 Orientation Day	4 First day of Biol 025!	5	6
2	9	10	11	12	13
3	16	17	18	19	20
4	23	24	25	26	27
5	30 Ecology Project Due	Oct 1	2	3	4
6	7	8	9	10	11
7	14 Thanksgiving Day Holiday	15	16 MIDTERM EXAM	17	18
8	21	22	23	24	25
9	28	29	30 Keyano College PD Day—no classes	31	Nov 1
10	4	5	6	7 Reading Day—no classes	8 Reading Day—no classes
11	11 Remembrance Day Holiday	12 Genetics Project Due	13	14	15
12	18	19	20	21	22
13	25	26	27	28	29
14	Dec 2	3	4 Disease Project Presentations Last day of Biol 025!	5	6
15	9 EXAMS	10 EXAMS	11 EXAMS	12 EXAMS	13 EXAMS
16	16 EXAMS	17 EXAMS	18	19	20

Please Note:

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

Final exams are scheduled by the College. Do not book travel until December 18, 2019.

Please note that deferred exams will NOT be approved for travel, even if the travel was booked prior to enrolling in the course.

Course Specific Policies

1. **Attendance Policy**: Biology 025 is designed as a ***face-to-face course***, so success is improved by being on time and regularly attending. Extended or frequent absences *for any reason* cannot be accommodated and can impact your overall mark. Some suggestions for handling occasional lecture absences include:

   a. checking the Calendar of Events, News Forum and slide notes by logging into ilearn.keyano.ca
   b. finding a "classroom buddy" whom you can contact for details regarding what you have missed. *I do not use ilearn to post exact slides and daily homework from the lectures.*
   c. check your Keyano email frequently, as this is how the College—and your instructors—reach you.

2. **Electronic devices policy:** some students find usage of tablets and laptops very helpful during lectures, so you are welcomed to bring these to class. Sounds on all cell phones should be turned off during class and if you need to take an important call, please leave the room to avoid disrupting others. *Using electronic devices to record the class in any way (audio, video, photos, etc.) is not permitted.*

3. **Late Work Policy:** assigned work must be received in hard copy and in person. It will receive

   a. full marks when received in class, on the due date. ☺
   b. the earned grade, minus 5%, if received during office hours on the due date.
   c. the earned grade, minus 20%, for each additional day late, if received during our scheduled class time or during office hours.
   d. a mark of zero if received after I have returned them. I do not accept work pushed under my office door or left in an office door pouch.

4. **Other Course Policies and Procedures:**

   a. Work submitted by non-attending students may not be marked.
   b. Any work showing evidence of copying or plagiarism will receive a mark of zero. (see "Student Rights and Responsibilities" in the Credit Calendar).
   c. In-class quizzes cannot usually be rewritten, as these are meant to give you immediate feedback on your progress.
   d. There are no "make-up assignments" or extra credit assignments for this course.
   e. A missed exam may be written at an alternate time only under certain exceptional circumstances, *at the instructor's discretion*. The instructor must be contacted within 24 hours of the scheduled exam, and documentation (e.g. a doctor's note) provided.
   f. The final exam will be written on the date scheduled by the College; otherwise, the procedure for "Deferred Final Examination" in the Credit Calendar is to be followed.

Should you have trouble logging into your Keyano email, SelfService, or **ilearn.keyano.ca**, please contact Keyano College Information and Technology Services (its.helpdesk@keyano.ca or 780-791-4965).

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.

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.

Specialized Supports

The Student Academic Support Services (SASS) department: Accessibility Services, Skill Centre, Wellness Services and Student Life Department work together to support student success at Keyano College.

Accessibility Services (CC167) supports student success through group and individualized instruction of learning, study and test taking strategies, and adaptive technologies. Students with documented disabilities, or who suspect a disability, can meet with the Learning Strategists to discuss accommodation of the learning barriers that they may be experiencing. Students who have accessed accommodations in the past are encouraged to visit our office at their earliest opportunity to discuss the availability of accommodations in their current courses. Individual appointments can be made by calling 780-791-8934.

Skill Centre (CC119) provides a learning space where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff. Students visiting the centre have access to one-to-one or group tutoring, facilitated study groups, and assistance in academic writing. The Skill Centre's Peer Tutor program provides paid employment opportunities for

students who have demonstrated academic success and want to share what they have learned. Tutoring is available free to any students registered at Keyano College on a drop in basis, from 8:30 am to 5:00 pm Monday through Friday. Additional evening hours are subject to tutor availability and are posted in the Skill Centre.

Wellness Services (CC260) offers a caring, inclusive, and respectful environment where students can access free group and individual support to meet academic and life challenges. Mental Health Coordinators offer a safe and confidential environment to seek help with personal concerns. The Mindfulness Room in CC260 is available as a quiet space for students to relax during regular office hours. Wellness Service welcomes students to participate in any of the group sessions offered throughout the academic year addressing such topics as Mindfulness and Test Anxiety. Individual appointments can be made by calling 780-791-8934.

Student Life Department (CC210) is a place for students to go when they don't know who else can answer their questions. The staff will help students navigate barriers to success and if they don't know the answer, they will find it out. Student success is directly affected by how connected a student feels to their college. The student life department is there to help students get connected.

Please watch your Keyano email for workshop announcements from our Student Academic Support Services team.