

**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.
Tuesday	1:00 p.m. – 1:50 p.m.
Wednesday	3:00 p.m. – 3:50 p.m.
Thursday	10:00 a.m. – 10:50 a.m.
Friday	12:00 p.m. – 12:50 p.m.

**Hours of Instruction**

Tuesday	8:00 a.m. – 9:50 a.m.	Room S214
Thursday	8:00 a.m. – 9:50 a.m.	Room S214
Friday	8:00 a.m. – 9:50 a.m.	Room S214

**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**

<b>Descriptor</b>	<b>4.0 Scale</b>	<b>Percent</b>
Excellent	4.0	96 – 100
	4.0	90 – 95
	3.7	85 – 89
Good	3.3	81 – 84
	3.0	77 – 80
	2.7	73 – 76
Satisfactory	2.3	69 – 72
	2.0	65 – 68
	<b>Minimum Prerequisite</b>	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
2. The Chemistry of Life

Chapter 1  
Chapter 2

**UNIT 2: Ecology**

1. The Biosphere
2. Ecosystems and Communities
3. Populations
4. Humans in the Biosphere

Chapter 3  
Chapter 4  
Chapter 5  
Chapter 6

**UNIT 3: Cell Biology**

1. Cell structure and function
2. Photosynthesis
3. Cellular Respiration and Fermentation
4. Cell Growth and Division

Chapter 7  
Chapter 8  
Chapter 9  
Chapter 10

**UNIT 4 Part 1: Genetics**

1. Introduction to Genetics

Chapter 11

**MIDTERM EXAM****UNIT 4 Part 2: Genetics**

1. DNA
2. RNA and Protein Synthesis
3. Human Heredity
4. Genetic Engineering

Chapter 12  
Chapter 13  
Chapter 14  
Chapter 15

**UNIT 5: Evolution**

1. Darwin's Theory of Evolution
2. Evolution of Populations
3. Classification
4. History of Life

Chapter 16  
Chapter 17  
Chapter 18 & DOL 1-5  
Chapter 19

**UNIT 6: Overview of Kingdoms of Life**

1. Viruses and Prokaryotes
2. Protists and Fungi

Chapter 20 & DOL 6-9  
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	Jan 8	9 First day of Biol 025	10	11	12
2	15	16	17	18	19
3	22	23	24	25	26
4	29	30 Ecology Proj. Due	31	Feb 1	2
5	5	6	7	8	9
6	12	13	14	15	16 MIDTERM EXAM
7	19 Family Day Holiday College Closed	20 Reading Day— No Classes	21 Reading Day— No Classes	22 Reading Day— No Classes	23 Reading Day— No Classes
8	26	27	28	Mar 1	2
9	5	6	7	8	9
10	12	13	14	15	16
11	19	20	21	22	23
12	26	27	28	29	30 Good Friday Holiday College Closed
13	Apr 2 Easter Monday College Closed	3	4	5	6
14	9	10	11	12	13 Diseases Proj. Due Last day of Biol 025
15	16 Final Exams	17 Final Exams	18 Final Exams	19 Final Exams	20 Final Exams

***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 April 21, 2018.***

### 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](http://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 notices posted to the ilearn forum automatically go there.
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. 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.
  - e. 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 [ilearn.keyano.ca](http://ilearn.keyano.ca), please contact Keyano College Information and Technology Services ([its.helpdesk@keyano.ca](mailto: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.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online tutorial found on [ilearn.keyano.ca](http://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.

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Patricia Collins, Instructor

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Lisa Turner, Chair

Date Authorized

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Vincella Thompson, Dean

Date Authorized

**Signed copies to be delivered to:**

Instructor  
Registrar's Office