

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

Office CC205S

Office Phone: 780-791-8955

Email: patricia.collins@keyano.ca**Office Hours**

Individual meetings are available **Thursdays, 3:00 – 4:50 pm via Zoom** on a first come, first served basis. Students will be admitted into the Zoom “waiting room” until it is their turn for one-on-one attention.

Other times may be available Monday – Friday, between 9:00 am and 5:00 pm; please call or email to set up an appointment.

Hours of Instruction

Mondays	1:00 – 2:50 pm	Synchronous tutorial (group)
Wednesdays	3:00 – 4:50 pm	Synchronous tutorial (group)
Thursdays	3:00 – 4:50 pm	Office hours (individual)

Instruction is flexible; tutorials are meant to go over the previous day’s work and explain the new lesson.

Required Resources

- ***Prentice Hall Biology*** by K. Miller & J. Levine, Prentice Hall (2010), ISBN 0-13-369009-1, available in print from the Keyano Bookstore.
- ***Biology 025 Student Course Package***, available in print from the Keyano Bookstore.
- **Computer** (laptop or desktop)—see pages 8 and 9 for details

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.
- 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

Chapter Quizzes	70%
Projects	30%

A grade of 60% (1.7, or C-) is required for progression. The minimum standard for passing this course is a grade of 50% (1.0, or D).

Grading System

Descriptor	4.0 Scale	Percent
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
	Minimum Prerequisite	1.7
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
2. DNA
3. RNA and Protein Synthesis
4. Human Heredity
5. Genetic Engineering

Chapter 11
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

Calendar of Important Events

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

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	Aug 31 Orientation Day	Sept 1	2 First day of Biol 025! Chapter 1	3 Office Hours 3-4:50	4
2	7 Labour Day Holiday	8	9 Chapter 2	10 Office Hours 3-4:50	11
3	14 Chapter 3 Chapter 1 & 2 Quiz	15	16 Chapter 4	17 Office Hours 3-4:50	18
4	21 Chapter 5 Chapter 3 & 4 Quiz	22	23 Chapter 6	24 Office Hours 3-4:50	25
5	28 Chapter 7 Chapter 5 & 6 Quiz	29	30 Chapter 8	Oct 1 Office Hours 3-4:50	2
6	5 Chapter 9 Chapter 7 Quiz	6	7 Chapter 10	8 Office Hours 3-4:50 Chapter 8 & 9 Quiz	9
7	12 Thanksgiving Day Holiday	13	14 Chapter 11 <i>Science Project Due</i>	15 Office Hours 3-4:50	16
8	19 Chapter 12	20	21 Chapter 13 Chapter 10 & 11 Quiz	22 Office Hours 3-4:50	23
9	26 Chapter 14 Chapter 12 & 13 Quiz	27	28 Chapter 14	29 Office Hours 3-4:50	30
10	Nov 2 Chapter 15	3	4 Chapter 16	5 Office Hours 3-4:50 <i>Genetics Project Due</i>	6
11	9 Chapter 17 Chapter 14 & 15 Quiz	10	11 Remembrance Day Holiday	12 Reading Day	13 Reading Day
12	16 Chapter 18 Chapter 16 & 17 Quiz	17	18 Chapter 19	19 Office Hours 3-4:50	20
13	23 Chapter 20 Chapter 18 & 19 Quiz	24	25 Chapter 21	26 Office Hours 3-4:50	27
14	30 <i>LIVE via Zoom: Your Disease Presentations</i>	Dec 1	2 <i>LIVE via Zoom: Your Disease Presentations</i>	3 Office Hours 3-4:50 Chapter 20 & 21 Quiz	4
15	7 EXAMS	8 EXAMS	9 EXAMS	10 EXAMS	11 EXAMS
16	14 EXAMS	15 EXAMS	16 EXAMS	17 EXAMS	18 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 December 19, 2020 for courses with final exams.

Deferred exams will NOT be approved for travel, even if the travel was booked prior to enrolling in the course.

Course Specifics

Remote delivery: Biology 025A is designed as an *asynchronous, remote delivery course*. Prepare to devote **2-4 hours each day a lesson is given** to self-directed study and completion of assessments. With this format, success is improved by keeping up with the material on a daily basis and asking questions.

Each lesson date, you are expected to do the following:

- check your Keyano email.** This is how the College, and I, will get in touch with you. Always use your Keyano email to get in touch with me.
- check Moodle by logging into ilearn.keyano.ca.** Check the following areas each weekday: Calendar (daily lessons), Assessments (assignments and unit quizzes), and Announcements.
- complete the coursework, in the order in which it is covered.** You will need your textbook, the Student Course Package, and the electronic resources on Moodle.

Synchronous **ZOOM tutorials** will be provided on scheduled days to serve as a check-in place where you can virtually meet with me and your classmates to ask questions and discuss items from recent self-directed lessons. **Regular attendance** at ZOOM tutorials will help with staying motivated and feeling connected to your community of scholars ☺. Click **Link to ZOOM tutorials** when you're on Moodle.

ZOOM tutorials may also be used as presentation dates for assignments. On these dates, attendance is mandatory.

Electronic devices: please refer to pages 8 and 9 for detailed hardware and software requirements.

For the best experience in ZOOM tutorials and one-on-one meetings, a **headset or earbuds with a microphone is recommended**.

You will also need to know how to create and upload electronic documents to Moodle (PDF or Word format), and be prepared to create and upload audio PowerPoints (MP4) and videos (MP4) for some assignments. *Students can download MS Office, for Windows or Mac, for free through Moodle.*

Late Work: your **projects** will receive

- the earned grade in full when received by the due date and time. ☺
- the earned grade, **minus 20%**, for **each** additional day late, during the 2-day marking period.
- a mark of **zero** if submitted after the 2-day marking period.

Each **1-hour Chapter Quiz** will be completed online through Moodle, in one attempt, during a limited timeframe. Extensions and "make-ups" will not be granted. Some written response questions will be provided in advance so that you can upload these responses during the quiz time.

****Please note:** there will be no alternative, "make-up", or "extra credit" assignments provided.**

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](#). The Keyano College credit calendar also has information about Student Rights and Code of Conduct. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and 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 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; and
- 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 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 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 may not be graded until you show this signed certificate.

Specialized Supports

The Student Services department is committed to Keyano students and their academic success. There are a variety of student supports available at Keyano College. Due to the continuing situation with the Covid-19 pandemic, the offered support services will be implemented differently this semester by being provided mostly virtually. In-person service can be requested as needed. All Alberta Health Services guidelines will be followed for in-person appointments—wear a mask, maintain two meters of physical distance, use hand sanitizer, and stay home if you are unwell.

All student services are available during Keyano business hours: Monday to Friday, 8h30-16h30. The Library has evening and weekend hours. Please check keyano.ca/library for current hours.

Accessibility Services: provides accommodations for students with disabilities. Students with documented disabilities, or who suspect a disability, can meet with a Learning Strategist to discuss

their current learning barriers and possible accommodations. Students who have accessed accommodations in the past are encouraged to contact us to request them for the semester. Please note that requesting accommodations is a process and requires time to arrange. Contact us as soon as you know you may require accommodations. For accessibility services supports and to book a virtual appointment, please contact accessibility.services@keyano.ca.

Accessibility Services also provides individual and group learning strategy instruction for all students, as well as technology training and supports to enhance learning. Meet with a Learning Strategist to learn studying and test-taking strategies for online classes. Schedule an appointment with the Assistive Technology Specialist to explore technology tools for learning. Book an appointment today by emailing accessibility.services@keyano.ca

Academic Success Coaching: offers you support and access to resources for your academic success to help you to find the Keys to your Success. The Academic Success Coach will work with you to develop an academic success plan, develop your study and time management skills, and connect you with the right resources here at Keyano. Academic.success@keyano.ca is the best way to access resources during virtual service delivery.

Wellness Services: 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. All individual appointments will continue virtually.

Wellness Services welcomes students to participate in any of the virtual group sessions offered throughout the academic year addressing topics including mindfulness and test anxiety.

Individual virtual appointments can be made by emailing wellness.services@keyano.ca.

Library Services: provides students with research and information supports as they engage in their studies. Library staff are available to support you both virtually and in person during the fall semester. For library service supports and inquiries, please email askthelibrary@keyano.ca.

Individual support with the Information Librarian will be provided virtually. Appointments can be requested by email or by placing a [Book a Librarian](#) request using the online form found [here](#).

Research and Subject Guides are helpful resources when conducting research or addressing your information needs. To view a subject or course specific guide, use the following [Subject Guides link](#)

To access additional research resources, including Citation Guides (APA, MLA, Chicago, or IEEE), go to the [Research Help Library page](#).

Skill Centre: provides academic support services to students registered in credit programs at Keyano College in the form of tutoring, writing support groups, facilitated study groups, workshops and study space. Tutoring services are **free** to Keyano students. Tutoring is available for Math, Writing, English, and Science subject areas.

While most courses are being offered online, the Skill Center will be offering mostly virtual tutoring services and in-person sessions as requested. Please email Skill.centre@keyano.ca to get in contact with our tutoring staff.

For the most up to date information on how to book a tutoring session, please view the [Keyano Skill Centre homepage](#).

E-Learning

Technology and internet will impact your online learning experience. It's important that you are able to watch an online video and other course materials, take online quizzes, and participant in a live class with your instructor and other students.

Keyano College operates in a Windows based environment and having the correct tools for online learning is important. Here's a list of recommended system requirements for Fall 2020.

Internet Speed

Minimum Internet speeds of 5 Mbps.

Recommended Internet speeds of 25 Mbps (especially if you are sharing your internet at home).

Check your internet speed with Fast.com.

System requirements:

Microsoft Windows	Apple
<p>Minimum Requirements:</p> <ul style="list-style-type: none"> · A Windows 10 computer/laptop · Minimum 4GB of RAM. · 10GB+ available hard drive storage. · Enough available hard drive space to install the Microsoft Office suite (approximately 3GB). <u>Microsoft Office</u> software is free to all Keyano students and employees. · Microphone, webcam and speakers. A headset with a microphone is recommended. · System updates must be regularly installed. · Anti-Virus / Anti-Malware software 	<p>Minimum Requirements:</p> <ul style="list-style-type: none"> · A Macintosh (V10.14 and above) computer/laptop · Minimum 4GB of RAM. · 10GB+ available hard drive storage. · Enough available hard drive space to install the Microsoft Office suite (approximately 3GB). <u>Microsoft Office</u> software is free to all Keyano students and employees. · Microphone, webcam and speakers. A headset with a microphone is recommended. · System updates must be regularly installed. · Anti-Virus / Anti-Malware software.
<p>Recommended Requirements</p> <ul style="list-style-type: none"> · 8GB of RAM · A method of backing up/synchronizing to local or cloud-based storage such as OneDrive is highly recommended. This is included if you complete the setup of KeyanoMail and download MS Office using your Keyano email for free. 	<p>Recommended Requirements</p> <ul style="list-style-type: none"> · 8GB of RAM · A method of backing up/synchronizing to local or cloud-based storage such as OneDrive is highly recommended. This is included if you complete the setup of KeyanoMail and download MS Office using your Keyano email for free.
<p>Chromebooks are not recommended as they are not compatible with testing lockdown browsers.</p> <p>A Microsoft Surface or iPad or iPad Pro may be possible alternatives in some program areas.</p>	

Computer Software

Students will be able to get access to Microsoft Office 365 for Free using Keyano Credentials through Moodle; the link is <https://www.keyano.ca/en/student-services/software.aspx>

Recording of lectures and Intellectual Property

Students may only record a lecture if explicit permission is provided by the instructor or by Accessibility Services. Even if students have permission to record a lecture or lecture materials, students may not publish any of the lectures or lecture materials, this includes any recordings, slides, instructor notes, etc. on any platform. Thus no student is allowed to publish or sell instructor notes without formal written permission. It is important to recognize that the Canadian Copyright Act contains provisions for intellectual property.

ITS Helpdesk

If you are having issues with your student account, you can contact the ITS Helpdesk by emailing its.helpdesk@keyano.ca or calling 780-791-4965.