College and Career Preparation

Winter 2022

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 CC205 S
780-791-8955
patricia.collins@keyano.ca

Office Hours

Day	Time
Monday	5:00 p.m. – 5:50 p.m.
Tuesday	10:00 a.m. – 10:50 a.m.
Wednesday	3:00 p.m. – 3:50 p.m.
Thursday	10:00 a.m. – 10:50 a.m.
Friday	10:00 a.m. – 10:50 a.m.

Hours of Instruction

Day	Time	Room
Monday	3:00 p.m. – 4:50 p.m.	Room CC235
Wednesday	1:00 p.m. – 2:50 p.m.	Room CC235
Thursday	1:00 p.m. – 2:50 p.m.	Room CC235

Required Resources

- *__Prentice Hall Biology__* by K. Miller & J. Levine, Prentice Hall (2010), ISBN 978-0-13-366951-0
  - this book just went out of print, so please double-check ISBN to ensure an exact match when ordering via Amazon, Facebook buy-and-sell, or other digital resale platforms
- *__Biology 025 Student Manual__*, available in print from the Keyano Bookstore
- **Pencil crayons**, **highlighters**, or other colouring tools
- **Computer** (laptop or desktop)—see page 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 with distinct biotic and abiotic factors.
- 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

Quizzes and Assignments	30%
Projects	30%
Midterm Exam (Ch 1 - 11)	20%
Final Exam (Ch 12 - 21)	20%

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
	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 Biology 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

Biology 025A   Winter 2022

Calendar of Important Events: shaded areas indicate no Biology 025 lessons.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	Jan 3 College Closed *(in lieu of New Year's Day)*	4	5 First day of classes; Ch 1	6 Ch 1	7
2	10 Ch 2	11	12 Ch 2	13 Ch 2 & 3	14
3	17 Ch 3	18	19 Ch 4	20 Ch 5	21
4	24 Ch 6	25	26 **Ecology Group Presentations**	27 Ch 7	28
5	31 Ch 7	Feb 1	2 Ch 8	3 Ch 8 & 9	4
6	7 Ch 9	8	9 Ch 10	10 Ch 10 & 11.4	11
7	14 Ch 11	15	16 Ch 11	17 Review	18
8	21 Family Day Holiday College Closed	22 Reading Day—No Classes	23 Reading Day—No Classes	24 Reading Day—No Classes	25 Reading Day—No Classes
9	28 **MIDTERM EXAM**	Mar 1	2 Ch 12	3 Ch 12 & 13	4
10	7 Ch 13	8	9 Ch 14	10 Ch 14	11
11	14 Ch 14/15	15	16 Ch 15	17 Ch 16	18
12	21 Ch 16 **Genetics Project Due**	22	23 17.1, 17.3	24 Ch 18	25
13	28 Ch 18	29	30 Ch 19	31 Ch 19	Apr 1
14	4 Ch 20	5	6 Ch 20	7 Ch 21	8
15	11 Ch 21	12	13 **Disease Presentations**	14 Last day of class **Presentations (cont'd);** Review	15 Good Friday Holiday College Closed
16	18 Easter Monday College Closed	19 FINAL EXAMS	20 FINAL EXAMS	21 FINAL EXAMS	22 FINAL EXAMS
17	25 FINAL EXAMS	26 FINAL EXAMS	27 FINAL EXAMS	28	29

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 28, 2022 for courses with final exams.

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

Course Specific Policies

1. **Attendance:** Biology 025 is designed as a ***face-to-face course***. Extended or frequent absences *for any reason* can impact your overall mark. Suggestions for handling occasional absences include:

    a. **finding a "classroom buddy"** whom you can contact for details regarding what you have missed.

    b. **using Moodle**: log into ilearn.keyano.ca to check the Calendar and see slide notes and pre-recorded audio PowerPoint lessons.

    c. **using OneNote:** this is the class notebook where I record daily lesson outlines and homework. Search your Keyano email during the first week of classes for an invitation from SharePoint, or use your Keyano credentials to log into onenote.com

    d. **using your Keyanomail** to get in touch with me. You will receive responses during office hours.

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

3. **Late Work:** for full marks, assigned work must be received in hard copy and in person, in class, on the due date. If you need extra time to get an assignment completed, it will receive

    a. the earned grade, minus 5%, if received after class on the due date.

    b. the earned grade, minus 20%, for each additional day late.

    c. a mark of zero if received after I have returned them, if pushed under my office door, or if left in an office door pouch.

4. **Other:**

    a. Any work showing evidence of copying or plagiarism will receive a mark of zero. (see page 6)

    b. Biology 025 has in-class quizzes and Moodle quizzes (see Moodle Calendar). Moodle quizzes are completed online, in one attempt, during a limited timeframe—**see Moodle for quiz opening and closing dates**. *Extensions and "make-ups" will not be granted for any quizzes..*

    c. 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) must be provided.

    d. 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.

    e. There will be no alternative, "make-up", or "extra credit" assignments provided for this course.

Performance Requirements and Student Services

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. Due to the continuing situation with the Covid-19 pandemic, the offered support services will be implemented through a model to respond to the restrictions in force at the time. In-person and virtual services will be offered. 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 College is closed for statutory holidays. If you require support outside of regular business hours, please inform the support service team, and we will do our best to accommodate your needs.

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 supports and to book an 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

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. Students may access services virtually and in-person.

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

Individual 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 online and in-person throughout the semester. For a detailed list of library supports and services, go to www.keyano.ca/library. For all inquiries, please email askthelibrary@keyano.ca or chat with us online.

Begin your research with the Library's FIND page. Search for information and sources for your assignments using the OneSearch, the Library's Catalogue, or by searching in a specific database selected from the A-Z Database List.

Individual support with us is available. For support with citations, research and other information needs, appointments can be booked using the online Book A Librarian Calendar. For support with Moodle, educational tools for assignments, Microsoft Office, Zoom, Teams and more, book an appointment using the online Educational Technology Support Calendar.

Research and subject guides are helpful resources when beginning your research, assignment, using new educational technology, or addressing other information needs. To view a subject or course-specific guide, check out the complete listing of online Subject Guides.

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

The Loanable Technology collection is available to support students in their learning pursuits, whether online, in person or both. Items available for borrowing include mobile projectors, webcams, noise-cancelling headphones, Chromebooks, and laptops. For an up-to-date list of technology available for borrowing as well as support available, go to the Library's Loanable Technology webpage.

Academic Success Centre: The Academic Success Centre is a learning space in the Clearwater Campus (CC-119) at Keyano College. Students can gather to share ideas, collaborate on projects, get new perspectives on learning from our Academic Content Specialists, or use the Centre's educational resources. The Academic Success Centre provides academic support services to students registered in credit programs at Keyano College in the form of individual tutoring, writing support groups, facilitated study groups, workshops, and study space. Services are **free** to Keyano students.

Academic Content Specialists are available in the areas of Math, Science, Human Services, and English/Humanities. This covers all courses offered at Keyano. The Academic Success Coach can also be found in the Academic Success Centre.

For the most up to date information on how to book a session, please view the Keyano Academic Success Centre homepage.

> **Academic Integrity:** The goal of the Academic Success Centre is to foster a student's ability to learn effectively and independently. Students registered at Keyano College are welcome to drop by the Centre to visit with any of our Academic Content Specialists to discuss their academic concerns.
>
> **Availability:** Monday to Friday: 8:30 a.m. – 4:30 p.m. Flexible times may be available upon request. Virtual and in-person sessions, please email to get in contact with our Academic Content Specialists. For the most up to date information on how to book a session, please view the Academic Success Centre homepage.

Academic Success Coach: 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 blended service delivery. The Academic Success Coach is located in the Skill Centre in CC-119 at the Clearwater Campus.

E-Learning
Technology and internet will impact your online learning experience. It's important that you can watch an online video and other course materials, take online quizzes and participate in a live class with your instructor and other students. Live/virtual classes will be hosted in Microsoft Teams or Zoom.

For all course delivery types, you will access your course resources on Keyano's learning management system, **Moodle (iLearn).** Login in using your Keyano username and password.

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.

Internet Speed
Minimum Internet speeds of 10 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
Minimum Requirements: 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). Microsoft Office 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	**Minimum Requirements:** 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). Microsoft Office 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.
Recommended Requirements · 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.	**Recommended Requirements** · 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.

Chromebooks are **not** recommended as they are not compatible with testing lockdown browsers.

A Microsoft Surface or iPad or iPad Pro may be possible alternatives in some program areas.

Computer Software
Students will be able to get access to Microsoft Office 365 for free using Keyano credentials by clicking here.

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 share, distribute, or publish any of the lectures or course materials, this includes any recordings, slides, instructor notes, etc. on any platform. Thus no student is allowed to share, distribute, publish or sell course related content (instructor, or students) without permission. It is important to recognize that the Canadian Copyright Act contains provisions for intellectual property. The Academic Integrity Policy provides additional information on Keyano College's expectations from students as members of the intellectual community.

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.