

BIO A01

Life on Earth: Unifying Principles

Summer 2020

COURSE SYLLABUS

Objectives and Outcomes

The primary goal of BIOA01 is to provide students with the strong foundation needed to become a successful biologist. During the term you will learn:

1. the fundamentals of evolution, speciation and population genetics, the major principles of cellular organization and metabolic processes, and the principles of gene action and inheritance;
2. the essential skills to become an active learner of science;
3. some basic laboratory techniques that are required to pursue your chosen field of science;
4. some approaches for finding and reading relevant biology research articles;
5. the proper approach to collecting and analyzing data and then communicating the results using the writing and critical thinking skills presented in labs

Course Personnel

Name	Title	How to contact ¹	Remote Office Hours ²
Dr. Mark Fitzpatrick	Instructor	Email biolife@utsc.utoronto.ca (include Fitzpatrick in subject)	See Quercus for more information
Karolyn Keir	Lab/Course Coordinator for BIOA01 and BIOA02 - contact regarding late enrollment, missed tests or labs, marks management and general advising as related to the course	E-mail: biolife@utsc.utoronto.ca (include Keir in subject) ²	See Quercus for more information
Katherine Balasingham	BIO Help TA	katherine.balasingham@mail.utoronto.ca (include Biohelp in subject)	Please see Quercus
	Laboratory TA	TBA in the first week of classes	

¹All e-mails must be sent from your University – issued e-mail account (@mail.utoronto.ca)

²Karolyn Keir will only respond to e-mails during regular business hours (Mon – Fri, 9am – 5pm)

Communicating information within BIOA01

Quercus (q.utoronto.ca)

As this is an online course, all information will be posted on the BIOA01 Quercus course page. Information such as contact information and virtual office hours, lectures, videos and notes, online labs, test date, and grades will be posted on Quercus throughout the semester. Information related to your lab practical will also be posted here. It is your responsibility to check the BIOA01 Quercus page frequently and set notifications so you do not miss any important information.

Log onto Quercus by clicking the “Quercus” link under Quick Links on the UTSC homepage and using your UTORid and password.

E-mail

To help your professor stay organized and answer your e-mails more quickly and effectively, one central e-mail address serves BIOA01. To communicate with your Instructor and the Course Coordinator, please e-mail:

biolife@utsc.utoronto.ca

Include the name of the person you wish to e-mail, and your student number in the subject line of the e-mail to help direct it. **If there is no name listed in the subject line, your e-mail will not be answered.**

Please do not use professor's e-mail addresses for BIOA01 communication!

Remember to always contact the Instructors, Course Coordinator and TAs using your UofT issued e-mail address.
E-mails from other addresses (@gmail, @hotmail, @yahoo, etc.) will not be answered.

Required course materials:

1) Textbook

The complete e-textbook package can be purchased remotely from the UTSC Bookstore. The purchase of a textbook is required for BIOA01.

The textbook for BIOA01 is:

Morris J, Hartl D, Knoll A, Lue R, Michael M. 2019. Biology How Life Works (3rd ed.) W.H. Freeman & Company: Macmillan Education Imprint.

2) LaunchPad Access (online learning tool)

LaunchPad is an additional, online learning tool to help you master the material presented in BIOA02. You can purchase and access LaunchPad through the UTSC Bookstore website or directly through the MacMillan website (<http://www.macmillanlearning.com/catalog>)
For technical support, please call: 1-800-936-6899

The BIOA01 Summer 2020 LaunchPad site can be found at:
<https://www.macmillanhighered.com/launchpad/morris3e/13518480>

3) Labster Lab Simulations

Labster will host simulated labs and is required for you to complete the laboratory portion of BIOA01. Directions as to how to access these simulations will be posted to Quercus.

Course Evaluation

The final grade in BIOA01 will be determined as follows:

Laboratory component of final grade = 26% (see breakdown below)

Labs: 6 online labs with associated Labster questions and assignments x 3% = 18%

Every two weeks you will be responsible for completing 0-3 Labster lab simulations as well as additional exercises that will be posted to Quercus. Your mark for each lab will be comprised of your Labster score/scores (if applicable), as well an additional assignment.

Formal Lab Report (FLR) = 8%

You will complete a formal lab report write up for a lab that will be described to you in detail. Real data will be collected from this experiment by a laboratory technician and you will be responsible for analyzing and interpreting these data. This lab report will be submitted online through Quercus. Due date and time will be posted on Quercus.

Writing Assignments = 15% (see breakdown below)

You will be responsible for completing 3 x three part writing assignments that relate to the lecture and lab content. Part 1 will be worth 1%, Part 2 will be worth 2% and Part 3 will be worth 2%. You must complete all three parts to obtain a grade for these assignments. More information regarding these writing assignments will be posted to Quercus.

Module 1 Writing Assignment = 5%

Module 2 Writing Assignment = 5%

Module 2 Writing Assignment = 5%

Lecture component of final grade = 59% (see breakdown below)

LaunchPad Assessments = **9%**

Midterm = **20%**

Final Exam = **30%**

Statement regarding use of Turnitin

In BIOA01, we will be using Turnitin (through Quercus) for the submission of the lab assignments and the FLR. Failure to submit or failure to submit a Turnitin readable document will result in a grade of 0. You should be aware of the following policy for the use of Turnitin at the University of Toronto:

“Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their reports to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University’s use of the Turnitin.com service are described on the Turnitin.com website.”

Course Content

A. Lecture Topics (tentative) and Lecture Schedule

BIOA01- Life on Earth: Unifying Principles		Morris 3	
Date	Topic	Chapter	Module
	Introduction & Syllabus		
Lec 01	Life & the Universe	1	
	Molecules of Life	2	
	DNA	3	
Lec 02	DNA Replication & Editing	12	Genetics
	Mitosis & Meiosis	11	
	DNA: transcription	3	
Lec03	Translation & Central Dogma	4	Genetics
	DNA Regulation & Manipulation	12	
Lec04	Genetic & Epigenetic Regulation	18	Genetics
	Mutation & Genetic Variation	14	
	Mendelian Inheritance	15	
Lec05	Sex Chromosomes & Linkage	16	Genetics
	Genes, Environment & Complex Traits	17	
	Microevolution & Population Genetics		
Lec06	Hardy-Weinberg & Agents of Evolution	20	Evolution
	Selection & Maintaining Variation		
	Darwin & Evolution		
Lec07	Evidence for Evolution 1	22	Evolution
	Evidence for Evolution 2		
	TOL: Classification, Phylogeny & Species	21	
Lec08	Speciation		Evolution
	Evolution & Development	23	
	TOL: Viruses & Prions		
Lec09	TOL: Prokaryotes	24	Cells
	Organizing Principles of Cells	5	
	Capturing & Using Energy	6	
Lec10	Cellular Respiration	7	Cells
	Photosynthesis	8	
	Cell Signaling	9	
Lec11	Cell & Tissue Architecture	10	Cells
	TOL: Eukaryotic Diversity - the Protists	25	

B. Lab Topics and Lab Schedule

Details of labs will be posted to Quercus.

Course Regulations

Lectures

To get maximum benefit from the lectures in this course, students are advised to:

- **read the relevant sections in your textbook before the lecture** (see lecture schedule). Do not take extensive notes or memorize the material at this stage – just read and become familiar with the terms and concepts to be covered
- **download posted lecture material** from Quercus before each lecture
- **actively engage while attending/watching lectures**
- **during lectures, take your own notes** with the aim of understanding the main concepts covered
- re-read the relevant sections in your textbook as needed after lecture and create your own study notes; review your notes frequently
- **arrange to speak with the Instructor** during scheduled office hours or by appointment if having difficulties understanding material covered in lectures

Attendance in Labs

Completion of lab simulations, online lab exercises, and any associated work is mandatory in BIOA01. ***There will be no make-up labs in BIOA01.*** NO late assignments will be accepted without proper documentation (see next page).

Late formal lab reports will have a late penalty automatically applied (10% of the mark per day including weekends); work will not be accepted if more than 5 days late. Times and dates to hand in late material will be posted on Quercus.

Procedures for accommodation requests:

In order to be eligible for consideration for a missed term test or to submit lab assignments or FLR late, students must provide a valid documented reason to the Course Coordinator.

1. To submit late lab assignments or FLR (without academic penalty):

*****You must contact the Course Coordinator before the end the relevant due date to be eligible for accommodation. Please include a scanned copy of your self-declaration form with this email or indicate when you plan to submit this form*****

If you are ill during the term, and this illness influences your ability to meet a deadline for submission of a term assignment, you can submit a Self-Declaration of Student Illness form, indicating the days in which you were ill. This form is meant to take the place of the more typical medical form, and is available on the department's website www.utsc.utoronto.ca/biosci.

Please note the following aspects related to this Self-Declaration of Student Illness form:

1. Similar to the submission of a medical form, YOU ARE RESPONSIBLE for contacting the Course Coordinator to make arrangements for an accommodation for your absence.
2. You may use the Self-Declaration of Student Illness form ONLY for lab absences or term assignments. For any term exams in this course you will need to submit a Verification of Student Illness form (See "For Missed Midterm"). For the final exam you will need to follow the typical procedures for petitioning to write a deferred exam.
3. You may use the Self-Declaration of Student Illness form up to **two times** in this course. If you require an additional accommodation for a term assignment you must then use the standard Verification of Student Illness form.
4. Submitting a false Self-Declaration of Student Illness form constitutes academic misconduct, and could be subject to sanctions under the Code of Behaviour on Academic Matters.

Please submit any Self-Declaration of Student Illness forms to the Course Coordinator as soon as possible.

2. For Missed Midterm:

***** You must contact the Course Coordinator within 72 hours of the end of your scheduled midterm to be eligible to write a make-up term test*****

Please submit a completed University of Toronto Verification of Illness or Injury Form. Form can be found here:

<http://www.utsc.utoronto.ca/registrar/verification-illness-or-injury>

The date/time of the original test that was missed must be clearly indicated as well as a clear statement of the medical issue.

If you cannot attend Friday evening or Saturday midterm tests for religious reasons, please notify the Course Coordinator in writing by e-mail within one week of the announced midterm test date; an alternative time will be presented if approved by the Instructor.

3. For missed Final Exam:

Students must contact the Registrar's office (www.utoronto.ca/registrar/deferred-exams) and follow the procedures outlined in order to arrange to write a Deferred Final Exam (DFE). The DFE will be scheduled during the Fall 2020 Exam Period. Please note that the format of the DFE may differ from the original while covering the same content.

Important UTSC Policies

UTSC is dedicated to fostering an academic community in which the learning and scholarship of every member may flourish, with vigilant protection for individual human rights and a resolute commitment to the principles of equal opportunity, equity and justice.

1) Information on Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a University, and to ensure that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters outlines behavior that constitutes academic dishonesty and the process for addressing such offenses (see <http://www.governingcouncil.utoronto.ca/policies/resourcesforstudents.html>).

2) Information Regarding AccessAbility Services at UTSC

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach the instructor in BIO A01 and/or the AccessAbility Services Office (Room SW302) as soon as possible. Please note that all inquiries are confidential. You can contact AccessAbility Services at 416-287-7560, by e-mailing ability@utoronto.ca or visiting their website (www.utoronto.ca/ability).

3) Information on Religious Observances

It is policy at UTSC to provide special consideration for recognized holy days which may be observed by our students. Though not all holy days require students to be absent from school, accommodations may still be necessary in some cases. As a student, it is your responsibility to check the due dates for all course work and scheduled dates for tests/exams on a regular basis. Inform the Course Coordinator of any potential conflicts at least 7 days prior to the date of the test/assignment. Failure to do so may result in special consideration not being granted (documentation may be required).

4) Procedures Regarding Final Marks

The final mark in BIOA01 is based on term work; the evaluation breakdown is given in this syllabus. After the final exam, marks are calculated and submitted to the Department for review. Once approved, the final mark for each student in the course will be released on ROSI/ACORN.

Final marks are not negotiable and instructors are not permitted to discuss final marks with students. If students have concerns about their final mark, they should consult the proper procedures to be followed as outlined by the Registrar's office:

<https://www.utoronto.ca/registrar/petitions>

Once final marks are posted, it is an academic offense to ask for your mark to be changed (See Academic Handbook).