



BIOL*1020 Introduction to Biology

Fall 2018
Section(s): C01

Department of Integrative Biology
Credit Weight: 0.50
Version 2.00 - August 31, 2018

1 Course Details

1.1 Calendar Description

This course will introduce concepts concerning the organization of life, from molecules to cells to ecosystems and discuss how they relate to day-to-day life. The dynamic and interactive nature of all living systems will be emphasized. The weekly tutorial will introduce students to the application of biology to daily life and emphasize critical thinking skills. This course will be valuable for students without Grade 12 or 4U Biology who are interested in environmental issues, medicine, agriculture, biodiversity and related topics.

Restriction(s): BIOL*1050, BIOL*1070, BIOL*1080, BIOL*1090

1.2 Timetable

Classes: Monday, Wednesday and Friday 9:30-10:20 in MCKN 031

Labs: once per week on Wednesday 10:30-12:30 (section 1), Wednesday 2:30-4:20 (section 2) or Thursday 2:30 – 4:20 (section 3) in SSC3315

1.3 Final Exam

Tuesday December 11, 2018 from 14:30-16:30. Location TBD.

Exam time is subject to change. Please see WebAdvisor for the latest information.

2 Instructional Support

2.1 Instructor(s)

Annette Nassuth

Email: anassuth@uoguelph.ca
Telephone: +1-519-824-4120 x58787
Office: SC1 4459

Office Hours: Best is to contact me directly after a lecture or during tutorials. You can also e-mail me to schedule an appointment.

Patricia Wright

Email: patwrigh@uoguelph.ca
Telephone: +1-519-824-4120 x52719

Office: SC1 3468

Office Hours: Best is to contact me directly after a lecture or during tutorials. You can also e-mail me to schedule an appointment.

2.2 Instructional Support Team

Lab Co-ordinator: Emily Martin
Email: emilym@uoguelph.ca
Telephone: 519-8244120 x52743
Office Hours: Contact me during the tutorials. If that does not work, e-mail me to schedule an appointment.

2.3 Teaching Assistant(s)

Teaching Assistant: Olivia Grafinger
Email: ografing@uoguelph.ca

Teaching Assistant: Shelby Bohn
Email: sbohn@uoguelph.ca

3 Learning Resources

3.1 Required Resource(s)

Biology: Science for Life (with Physiology) (Textbook)

Biology. Science for Life (with Physiology). 6th ed. © 2018. Belk and Borden-Maier.

Two copies are on reserve at the McLaughlin Library

Courselink (Website)

<https://courselink.uoguelph.ca>

This course will make use of the University of Guelph's course website on D2L (via Courselink). Consequently, you are responsible for all information posted on the Courselink page for BIOL*1020. Please check it regularly.

Undergraduate Calendar (Website)

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/>

The Undergraduate Calendar is the source of information about the University of Guelph's procedures, policies and regulations, which apply to undergraduate programs.

3.2 Campus Resources

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. B.Sc. Academic

Advising or Program Counsellors

If you are struggling to succeed academically:

- There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. The Learning Commons

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. Counselling Services
- Student Health Services is located on campus and is available to provide medical attention. Student Health Services
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. Stress Management and High Performance Clinic

4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Describe the difference between anecdotal and scientific based information.
2. Apply critical thinking skills to current environmental and medical issues in the news.
3. Identify the various building blocks that make up living cells.
4. Explain the process of evolution by natural selection.
5. Understand energy flow with respect to life on Earth.
6. Understand the interconnectedness of all organisms on Earth.
7. Describe how life is organized in different forms: bacteria, fungi, protists, plants and animals.

5 Teaching and Learning Activities

Course Structure

Lectures

The classroom time will be used for lectures on fundamental concepts of biology and discussions of biology in the news. Possible exam questions will be reviewed in class. Students are expected to attend all lectures and participate in class discussions.

Labs

You are expected to attend all laboratories. They are an important part of the course in which basic biological concepts and science literacy taught in the lectures are integrated. You will be engaged in discussions of how biology and science, in general, are presented in the media. You will participate in a field trip to the Arboretum on campus to collect your own data set. You will not be able to complete the assignments without attending. You can also be tested on material from the labs in the midterms and the final exam.

5.1 Lecture Schedule

Date	Topic	Biology in the news	Readings (textbook)
Sept. 7	Introduction to course		
Sept. 10			
Sept. 12	Biology is a science	Evaluating cures for common cold	Chap. 1. Can science cure the common cold?
Sept. 14			
Sept. 17	Water, biochemistry and cells	Can dead humans come back as zombies?	Chap. 2. Science fiction, bad science, pseudo science
Sept. 19			
Sept. 21	Nutrients and membrane transport	Do sports drinks enhance athletic performance?	Chap. 3. Is it possible to supplement your way to better performance and health?
Sept. 24	Enzymes, metabolism and cellular respiration	Are overweight people less healthy than thin people?	Chap. 4. Body weight and health
Sept. 26			
Sept. 28	MIDTERM I		
Oct. 1	Photosynthesis and climate change	Will there be polar bears in 2100?	Chap. 5. Life in the greenhouse
Oct. 3			
Oct. 5	DNA synthesis, cell cycle	What is a genome screen?	Chap. 6. Cancer
Oct. 10	Meiosis		Chap. 7. Fertility
Oct. 12	Mendelian genetics	How come siblings are not identical?	Chap. 8. Does testing save lives?

NOTE:

Are you the product of your genes?

Oct. 8 THANKSGIVING

Oct. 15	Complex genetic traits, heritability, and DNA profiling	What are your chances of inheriting a family trait?	Chap. 9. Biology of wrongful convictions
Oct. 17			
Oct. 19	Gene expression, mutation, stem cells and cloning	GMOs yes or no?	Chap. 10. Genetically modified organisms
Oct. 22	The evidence for evolution	Why are some people skeptical about evolution?	Chap. 11. Where did we come from?
Oct. 24			
Oct. 26	MIDTERM II		
Oct. 29			
Oct. 31	Natural selection	Antibiotics – take them all or ditch them if you feel well?	Chap. 12. An evolving enemy
Nov. 2			Chap. 13. Understanding race
Nov. 5			
Nov. 7	Biodiversity and classification	Are humans more “evolved”?	Chap. 14. The greatest species on Earth?
Nov. 9			
Nov. 12		Trafficking in Kidneys – good or bad?	Chap. 18. Organ donation
Nov. 14	Animal and plant tissues		
Nov. 16		Does agriculture cause environmental damage?	Chap. 25. Feeding the World
Nov. 19	Population ecology	Are we headed for a	Chap. 15. Is the human

Nov. 21		global famine?	population too large?
Nov. 23			
Nov. 26			
Nov. 28	Community and ecosystem ecology	Would you care if mosquitoes went extinct?	Chap. 16. Conserving biodiversity
Nov. 30			

5.2 Laboratories

The laboratories will start the first full week of classes; check Courselink for pre-lab assignments. **Please attend the laboratory section assigned to you** by the registrar. See us immediately if you are not scheduled into a laboratory section.

Section 01	Section 02	Section 03
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Wednesdays	Wednesdays	Thursdays
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10:30 – 12:20	2:30 – 4:20	2:30 – 4:20
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On Oct. 3/4 we will start at the **Information Kiosk of the Arboretum** ("K" on Arboretum Road off East Ring Road, see map at https://www.uoguelph.ca/arboretum/sites/uoguelph.ca.arboretum/files/public/ArboretumMap-09-09-16_000.pdf). Be there on time!

Come to SSC3315 for all other labs.

Week	Date	Topic
1	Sept. 12/13	Does chocolate cause weight loss?
2	Sept. 19/20	Why do people drink bottled water?
3	Sept. 26/27	Q&A session
4	Oct. 3/4	Evaluating claims in the Arboretum
5	Oct. 10/11	Is a gluten-free diet good for you?
6	Oct. 17/18	Feeding the world Part I

7	Oct. 24/25	Q&A session
8	Oct. 31/Nov. 1	Is antibiotic resistance a problem?
9	Nov. 7/8	Are polar bears endangered?
10	Nov. 14/15	Feeding the world Part 2
		Exam Review
11	Nov. 21/22	

5.3 Important Dates

- Sept. 7 (Friday): first lecture for BIOL*1020, 9:30 am, MCKN 031
- Sept. 28 (Friday): first midterm, in class
- Oct. 3/4: Arboretum Walk
- Oct. 26 (Friday): second midterm, in class
- Nov. 2 (Friday): 40th class day, final date to drop course
- Dec. 11 (Tuesday) Final Exam, 2:30 pm, place TBD

6 Assessments

6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Midterm Examination I	10
Midterm Examination II	20
Final Examination	30
Lab Assignments (8 X 5%)	40
Total	100

6.2 Assessment Details

Midterm Examination I (10%)

Date: Fri, Sep 28

Course Content/Activity: Lecture & Lab

Midterm Examination II (20%)

Date: Fri, Oct 26

Course Content/Activity: Lecture & Lab

Final Examination (30%)

Date: Tue, Dec 11, 2:30 PM - 4:30 PM

Course Content/Activity: Lecture & Lab

Lab Assignments (8 X 5%) (40%)

Course Content/Activity: Lab

6.3 Mid-term and final exams

Sample exam questions given weekly in lecture. Multiple choice and short answer questions covering lecture and lab materials.

6.4 Lab assignments

Includes a combination of on-line searches for information, surveys, self-monitoring and reading articles before the lab, designing posters, and final short write-ups, as outlined to you in lectures, labs and on courselink.

Some of the Pre-Lab Assignments and Lab Assignments will be done on an individual basis, and others will be done in groups. For Assignments that are to be done on an INDIVIDUAL basis you can discuss the answers with members of your group, but your submission must be YOUR OWN work, i.e. your answers should be different from the answers submitted by your group members. For Assignment that are done on a GROUP basis, it is expected that ALL members of the group should contribute information. If a group member did NOT participate and contribute to the submission then their name should NOT be listed on the assignment. For GROUP assignments all members of the group will get the same grade.

Pre-Lab Assignment Assignment

Lab 1 Individual	Individual
Lab 2 Individual	Individual
Lab 3 Individual	Individual
Lab 4 Individual	Individual
Lab 5 Individual	Individual
Lab 6 Individual	Group
Lab 7 Individual	Individual
Lab 8 Individual	Group

7 Course Statements

7.1 E-mail Etiquette

When emailing the course instructors, please use formal salutations: “Dear Prof. (name) or “Dear Dr. (name)”. Use proper spelling, grammar and punctuation. (It should not read like a text message!). Be polite and considerate. Do not email detailed questions about course content (see below “How do I find the answer?”)

7.2 How do I find the answer?

Your instructors want you to enjoy the course material and feel free to ask questions. If you have a question about lecture material, do not hesitate to raise your hand in class or see the Instructor before or after class. Also take the opportunity to ask your TA questions in the weekly labs. If you require more time to discuss course materials, please email the Instructor to request an appointment.

7.3 Academic Misconduct

If you have any concerns or questions about how to avoid plagiarism or other forms of academic misconduct, please contact Drs. Nassuth or Wright.

See below for additional information.

8 Department of Integrative Biology Statements

8.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

8.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the [Learning Commons](#) including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist.
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: [Chemistry & Physics Help](#) and [Math & Stats Help](#)

8.3 Wellness

If you are struggling with personal or health issues:

- [Counselling Services](#) offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.
 - [Student Health Services](#) is located on campus and is available to provide medical attention.
 - For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to [stress management and high performance situations](#).
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9 University Statements

9.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

9.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The regulations and procedures for [Academic Consideration](#) are detailed in the Undergraduate Calendar.

9.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate Calendar.

9.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

9.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas

9.6 Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The [Academic Misconduct Policy](#) is detailed in the Undergraduate Calendar.

9.7 Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

9.8 Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.
