

University of Guelph
College of Biological Science
Integrative Biology and Molecular & Cellular Biology

COURSE OUTLINE

Introduction to Biology –
BIOL*1020 Fall 2016

Course description

BIOL*1020 Introduction to Biology F (3-2) [0.50]

This course will introduce important concepts concerning the organization of life on our planet, from cells to ecosystems. The target student group for this course is students in an Arts and Humanities Program or a non-biology Science Program. The dynamic and interactive nature of all living systems will be emphasized. This course will be valuable for students without 12U Biology who are interested in environmental issues, medicine, advances in biotechnology and related topics.

Prerequisite(s): None

Department(s): Department of Integrative Biology

Teaching team

Professor Patricia Wright Office - SSC3468, patwrigh@uoguelph.ca, ext. 52719

Professor Annette Nassuth Office - SSC4459, anassuth@uoguelph.ca, ext. 58787

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

Teaching Assistant Zhinchao Jiao zjiao@uoguelph.ca

Teaching Assistant Alexander Weiss weissa@uoguelph.ca

Course schedule

Classes: 9:30-10:20 – Monday, Wednesday, Friday - MacKinnon Rm. 120

Labs: once per week on Wednesday or Thursday - SSC3315

Learning Outcomes

By the end of this course, students 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.

Course Resources

Textbook: Biology. Science for Life (with Physiology). 5th ed. © 2016. Belk and Maier.
Two copies are on reserve at the MacLaughlin library

Courselink: 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: is the source of information about the University of Guelph's procedures, policies and regulations, which apply to undergraduate programs. It can be found at:
<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/>

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.

Lecture Schedule

Date	Topic	Biology in the news	Readings (textbook)
Sept. 11	Introduction to course		
Sept. 14 Sept. 16 Sept. 18	Biology is a science	Evaluating cures for common cold	Chap. 1. Can science cure the common cold?
Sept. 21 Sept. 23 Sept. 25	Water, biochemistry and cells	Can dead humans come back as zombies? Do sports drinks enhance athletic performance?	Chap. 2. Science fiction, bad science, pseudo science Chap. 3. Is it possible to supplement your way to better performance and health?
Sept. 28 Sept. 30 Oct. 2	Enzymes, metabolism and cellular respiration MIDTERM I	Are overweight people less healthy than thin people?	Chap. 4. Body weight and health
Oct. 5 Oct. 7	Photosynthesis and climate change	Will there be polar bears in 2100?	Chap. 5. Life in the greenhouse
Oct. 9 Oct. 14 Oct. 16 NOTE: Oct. 12	DNA synthesis, cell cycle, inheritance THANKSGIVING	What is a genome screen? Are you the product of your genes?	Chap. 6. Cancer Chap. 7. Are you only as smart as your genes?
Oct. 19 Oct. 21 Oct. 23	Complex patterns of inheritance and DNA profiling Gene expression, mutation, stem cells and cloning	What are your chances of inheriting a family trait? GMOs yes or no?	Chap. 8. DNA detective Chap. 9. Genetically modified organisms
Oct. 26 Oct. 28 Oct. 30	The evidence for evolution MIDERM II	Why are some people skeptical about evolution?	Chap. 10. Where did we come from?
Nov. 2 Nov. 4 Nov. 6	Natural selection, species and races	Antibiotics – take them all or ditch them if you feel well?	Chap. 11. An evolving enemy Chap. 12. Who am I?
Nov. 9 Nov. 11 Nov. 13	Biodiversity and classification	Are humans more “evolved”?	Chap. 13. The greatest species on Earth?
Nov. 16 Nov. 18 Nov. 20	Animal and plant tissues	Trafficking in Kidneys – good or bad? Does agriculture cause environmental damage?	Chap. 7. Organ donation Chap. 24. Feeding the World
Nov. 23 Nov. 25 Nov. 27	Population ecology	Are we headed for a global famine?	Chap. 14. Is the human population too large?
Nov. 30 Dec. 2 Dec. 4	Community and ecosystem ecology	Would you care if mosquitoes went extinct?	Chap. 15. Conserving biodiversity

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
Wednesdays 10:30 – 12:20	Wednesdays 2:30 – 4:20	Thursdays 2:30 – 4:20

On Oct. 7/8 we will start at the **Information Kiosk of the Arboretum** (on Arboretum Road off East Ring Road, see the Information Guide and Map handed out to you in class). Be there on time!

Come to SSC3315 for all other labs.

Week	Date	Topic
1	Sept. 16/17	Does chocolate cause weight loss?
2	Sept. 23/24	Does ionized water heal?
3	Sept. 30/Oct. 1	No Lab
4	Oct. 7/8	Arboretum Walk
5	Oct. 14/15	Is there a cure for cancer?
6	Oct. 21/22	GMOs – are they dangerous?
7	Oct. 28/29	No Lab
8	Nov. 4/5	Can you recover from drug-resistant tuberculosis?
9	Nov. 11/12	Are polar bears endangered?
10	Nov. 18/19	Can we feed the world?
11	Nov. 25/26	Exam Review

Methods of Assessment

Form of Assessment	Weight of Assessment	Date of Assessment	Course Content /Activity	Learning Outcome Addressed
Mid-term examination I	10%	Oct. 2, 2015	Lecture, Lab	1-5
Mid-term examination II	20%	Oct. 30, 2015	Lecture, Lab	4-6
Final examination	30%	Dec 15, 2015	Lecture, Lab	1-7
Lab assignments (8 x 5%)	40%		Lab	1-7
TOTAL	100%			

Description of Assessment

Mid-term and final exams

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

Lab assignments

Include a combination of on-line searches for information, video viewing and reading before the lab and final short write-ups, as outlined to you in lectures, labs and courselink.

Important Dates

- Sept. 11 (Friday): first lecture in BIOL*1020, 9:30 am
- Oct. 2 (Friday): first midterm, in class
- Oct. 7/8: Arboretum Walk
- Oct. 30 (Friday): second midterm, in class
- Nov. 6 (Friday): 40th class day, final date to drop course
- Dec. 15 (Tuesday): Final Exam, place TBD, 11:30-13:30

Course and University Policies

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, and be prepared to provide supporting documentation. See the undergraduate calendar for information on regulations and procedures for Academic Consideration: [Academic Consideration](#)

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: [Centre for Students with Disabilities](#)

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 be aware that the BIOL*4010 instructor will use electronic means for detection of academic misconduct on written assignments.

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: [Academic Misconduct](#)

E-mail Communication

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

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 (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?”

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 you TA questions in the weekly labs. If you require more time to discuss course materials, please email either Instructor to request an appointment.

Drop Date

The last date to drop one-semester courses, without academic penalty, is the 40th class day. To confirm the actual date please see the schedule of dates in the Undergraduate Calendar. For regulations and procedures for Dropping Courses, see the Undergraduate Calendar: [Undergraduate Calendar - Dropping Courses](#)

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.

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.

Campus Resources

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

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](#)

If you have a documented disability or think you may have a disability:

- The Centre for Students with Disabilities (CSD) can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability. For more information, including how to register with the centre please see: [Centre for Students with Disabilities](#)