

BIOLOGY 1010.03

PRINCIPLES OF BIOLOGY PART I

COURSE INFORMATION

Course Co-ordinator: Todd Bishop

Laboratory Co-ordinators: Todd Bishop and Gillian Gass

Course Description and Goals

Biology 1010 introduces you to three sub-disciplines within the field of Biology: – Cell Biology, Genetics and Evolution. In essence, this is a course about you (and every other living thing as well), from the processes ongoing in each of the trillions of your microscopic cells to the evolutionary processes that have shaped our species and those around us.

The major objective of the course is to introduce the important concepts in each of these fields, laying a strong foundation for those students planning to pursue advanced classes, while also providing a comprehensive basic overview for those not going on in biology. While Biology 1010 does not require high school biology as a prerequisite, those with a strong high school background in biology should not assume the course will be easy. No matter what your background, you will be challenged by the material as you are exposed to the language, practice and ideas of Biology.

Each of the three professors presents a separate topic, and the lectures are accompanied by laboratory exercises designed to provide you with experience using laboratory tools and techniques while exposing you to research methods in Biology.

Biology is intricately linked to advances and important issues in our society, from medicine to ecology. We hope that Biology 1010 will provide you with the biological knowledge that you are seeking and stimulate your curiosity to delve further into the study of life.

Faculty and Support Staff

Professors	Office Telephone		Email	Topic
B. Pohajdak	LSC 5076B	494-1853	bill.pohajdak@dal.ca	Cell Biology
J. M. Wright	LSC 6087	494-6468	j.m.wright@dal.ca	Genetics and Molecular Biology
A. Simpson	LSC 5088	494-1247	alastair.simpson@dal.ca	Evolution

Laboratory Coordinators

T. Bishop	LSC 2089	494-1696	todd.bishop@dal.ca
G. Gass	LSC 2116	494-8445	gillian.gass@dal.ca

Technician

K. Smith	LSC 1027	494-2785	karen.smith@dal.ca
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Lectures

Lectures are 1.5 hours long and are given on Tuesdays and Thursdays throughout the term. Each professor will give seven or eight lectures. It is **very** important to attend lectures because this will help you understand course content and the material provided in lectures forms the basis of exams. Please contact the professor teaching the unit if you are uncertain about the information delivered in lecture or assigned readings.

Review Classes

Professors offer review sessions before exams. The sessions are not lectures, but rather an opportunity for you to ask questions about the lectures. The sessions are most effective if you have reviewed the lecture material and come prepared to ask questions.

Textbook

The textbook for this course is Reece, J.B., et al. *Campbell Biology*, Dalhousie Edition, Pearson Benjamin Cummings, Menlo Park, CA (2011), and is available at the Dalhousie University Bookstore. Secondhand copies of the textbook (8th edition) are suitable for the class. A few copies of the text are on reserve in the Killam Library.

The textbook, prepared by Drs. Jane Reece, and colleagues, is full of interesting information. What you read and how you make use of the textbook are important considerations: a skill you must develop is to read effectively. To help you focus on the critical material, professors will suggest particular sections of the book to read, thus highlighting the material in the text that must be covered in detail. Although assistance is available, you are the one who must do the reading, and for most students this is an essential way to obtain information and ideas in Biology 1010. **See the appropriate professor immediately if you are uncertain about assigned readings and use of the textbook.**

Evaluation

The exams in this course are multiple choice format and they evaluate several skills, including memorization, comprehension, application, and analysis of information. Success in the course requires that you both **understand and remember** the class material. Most professors will provide practice questions and, other questions and problems are also available at the end of each chapter in the textbook.

Of the 100 marks available in BIOL 1010, 66 are allotted to the lecture component and 34 to the laboratory as follows:

Midterm exam	October	22%
Exam (Christmas Final)	Scheduled by Registrar	44%
Laboratory *	Ongoing during term	<u>34%</u>
		100%

* The distribution of laboratory marks is described in the laboratory manual which must be purchased prior to your first laboratory session from the campus bookstore.

You must bring your Student ID card to all exams. All electronic devices, including calculators, cell phones, and electronic translators, are prohibited at exams. If English is not your first language and you require a dictionary, you may bring with you to exams a paper

language-to-language translation dictionary, which must be approved by an instructor prior to use. The midterm exam only covers lecture material from the Cell Biology unit I, while the Christmas exam only covers lecture material from the Genetics/Molecular Biology (II) and Evolution (III) units. The midterm exam is held during class time.

The Registrar's Office schedules the final examination period in December. The dates, times and locations of the Christmas exam are arranged by the Registrar's Office, and posted well in advance of the end of term. It is very important that you not make arrangements for travel during that time. Dalhousie's policy on alternative final exam times is as follows:

"A student requesting an alternative time for a final examination will be granted that request only in exceptional circumstances. Such circumstances include illness (with medical certificate) or other mitigating circumstances outside the control of the student. **Elective arrangements (such as travel plans) are not considered acceptable grounds for granting an alternative examination time...** This policy may also be applied at the discretion of the instructor to tests and examinations other than final examinations." (Undergraduate Calendar, 2011-12, p. 19)

There are many reasons for not doing well on an exam. The Course Coordinator would like to know about difficulties you cannot control that are affecting your studies and he will make every reasonable effort to accommodate your situation.

Make-up Examinations

Make-up exams will take place after the scheduled exam, with time and location of make-up exams announced on the course OWL site. Make-up exams are intended for students who miss a scheduled exam **because of illness or some other legitimate reason**. They are not available to students who do poorly on the regular examination and want to improve their mark. Students must provide documentation to the Course Coordinator within one week of the scheduled exam in order to write the make-up exam. Students who miss the make-up final exam due to ongoing illness may write a make-up during the first week of winter term.

Midterm/Exam Viewing Sessions

About two weeks after each midterm/exam you are given the opportunity to view your test and discuss the exam with the professor who set the questions. We **strongly recommend** that you review your exams. The process helps identify where you went wrong, which may improve your performance on the final exam. Viewing exams is also a way to check your mark against the posted mark and thereby ensure that it has been entered correctly into our database. Please make an appointment with your professor to see your exam if you cannot attend a viewing session.

Laboratories

Laboratories are two hours and are usually held each week. There are 24 students in each laboratory with one Teaching Assistant (TA) who answers questions and instructs students on how to conduct laboratory exercises. You must attend the laboratory in your scheduled room and time slot. There are quizzes and assignments to be completed throughout the term and a

laboratory exam at the end of term. Assignments must be handed in at the end of the laboratory period. **Late assignments will not be accepted** so you must study the laboratory and be prepared before you come to your session. If you find it difficult to finish laboratories in the allotted time, you may want to attend the practice laboratory held on Friday afternoon (specific time will be announced) of each week, in room 2100 of the Biology Department. In this session, students preview the laboratory scheduled for the following week, giving them an extra opportunity to discuss the material with an Instructor. Assignments are not accepted at this time so you must also attend your regular session. Seating is limited to 24 students.

Biology 1010 OWL (Online Web Learning)

The OWL site is accessible at the address: www.dal.ca. To access the site, login to My.Dal.ca, then select the Learning Resources tab. This site provides lecture information, study aids, Powerpoint presentations from lectures, marks for labs and exams, and important announcements. You are expected to check OWL, as well as your Dalhousie e-mail, frequently.

Absences

It is the responsibility of students who are absent from lectures and laboratories to ascertain what was missed, including announcements of tests and other information. If you miss one or more lectures for medical reasons, contact the course coordinator to discuss options for catching up on missed lecture material. Absence from a lab at which a quiz or assignment is due requires that you contact your TA or Instructor within 48 hours of your absence to avoid losing marks.

Departmental Guidelines Should You Miss Either a Midterm or Exam Due to Illness or Other Exceptional Circumstance

- A. A student who misses an examination because of illness must notify his/her physician at the time of illness. A message regarding the illness must be left at the Department of Biology Office (494-3515) for either Todd Bishop or Gillian Gass on the examination day, and the student must provide at the time of the make-up examination, a medical certificate signed by a physician.
- B. A student who anticipates missing an examination for medical reasons such as scheduled day surgery must notify either Todd Bishop or Gillian Gass at least one week in advance and provide at the time of the make-up examination, a medical certificate signed by a physician.
- C. A student who is absent due to other exceptional circumstances must notify the Course Coordinator either on or before the day of the exam and be willing to produce appropriate documentation upon request. Alternative arrangements are at the discretion of the Course Coordinator.

Dalhousie Accommodation Policy for Students, effective July 1, 2010

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic under the Nova Scotia Human Rights Act. Students who require academic accommodation for either classroom participation or the writing of tests, quizzes and exams should make their request to the Office of Student Accessibility & Accommodation (OSAA) prior to or at the outset of each academic term (with the exception of X/Y courses).

Please see www.studentaccessibility.dal.ca for more information and to obtain Form A - Request for Accommodation.

A note taker may be required to assist a classmate. There is an honourarium of \$75/course/term. If you are interested, please contact OSAA at 494-2836 for more information.

Please note that your classroom may contain specialized accessible furniture and equipment. It is important that these items remain in the classroom so that students who require their usage will be able to participate in the class.

Guidelines for Letter-Grade Equivalents

Mark (percent)	Letter Grade
90 - 100	A+
85 - 89.9	A
80 - 84.9	A-
75 - 79.9	B+
70 - 74.9	B
65 - 69.9	B-
62 - 64.9	C+
58 - 61.9	C
55 - 57.9	C-
50 - 54.9	D
Below 50	F

Please note: a grade of C- or better is required for entry into second year biology classes.

Stairs' Commandments (From Dr. D. Stairs, Dalhousie University)

- 1. Pester your professors.** "If you have questions or problems, for heaven's sake, don't hesitate to see your professor."
- 2. Remember that professors have biases like everyone else and watch out for them.** "Be a doubter...carry around some grains of salt and take a few with every lecture you hear."
- 3. Come to class and TAKE NOTES.** "I swear I can give you no more immediate practical advice than this...except, maybe, the Fourth Commandment..."
- 4. Do not procrastinate.** "Try to pace yourselves. No one else will do the pacing for you."
- 5. Treat the library as a resource, not an oppression.** "...ask, ask sweetly, but ask. It's their job to answer, and they will be happy to do so."
- 6. Take your assignments and examinations seriously, but not out of proportion.** "...I don't suggest that you relax. But I do suggest that you try to keep it all in perspective."

Intellectual Honesty

“A University should be a model of intellectual honesty. Failure to meet the University’s standards in this regard can result in an academic offense. The length of time a student has attended university, the presence of a dishonest intent and other circumstances may all be relevant to the seriousness with which the matter is viewed. Violations of intellectual honesty are offensive to the entire academic community, not just to the individual faculty member and students in whose class an offence occurs.” (Undergraduate Calendar 2011-12, p. 22).

It is extremely important that all students, particularly those beginning their university careers, understand the gravity of academic offences such as plagiarism, falsification of data or inadequate attribution. The Dalhousie University Calendar provides detailed information on the definition of these offences and the associated penalties. You should read this section of the calendar carefully. Please ask any of the Biology 1010 team for advice if you have concerns regarding the nature of these offences. Ignorance of the rules will not be considered an acceptable justification for committing an academic offense. A useful website maintained by Dalhousie University dealing with plagiarism and related issues is: <http://academicintegrity.dal.ca/Policies/>. There are links to several other sites which assist with library research and essay writing.

Biology 1010 Outline of Lectures Fall

Unit	Lecture	Topic	Readings in Campbell/Reece	Professor
CELL BIOLOGY	1	Introduction	Ch. 1	Pohajdak
	2	Cells I	Ch. 6	
	3	Cells II	Ch. 6	
	4	Macromolecules Membrane Structure and Function I	Ch. 5, 7	
	5	Membrane Structure and Function II	Ch. 7	
	6	Mitochondria and Energy Production I	Ch. 8, 9	
	7	Mitochondria and Energy Production II	Ch. 8, 9	
	8	Cell Communication	Ch. 11	
	9	The Cell Cycle	Ch. 12	
	Cell Biology Midterm Exam (In Class) - October 11, 2010			
GENETICS & MOLECULAR BIOLOGY	10	Mitosis and Meiosis	Ch. 12,13, 19	Wright
	11	Patterns of Inheritance	Ch. 13, 14	
	12	Human Genetics	Ch. 14, 15	
	13	DNA: The Genetic Material	Ch. 5, 16	
	14	Genes and How They Work	Ch. 17	
	15	Regulation of Gene Expression; Mutation	Ch. 16, 17, 18	
	16	Gene Technology	Ch. 20	
EVOLUTION	17	History of Biological Evolution	Ch. 1, 22	Simpson
	18	Evidence of Evolution; More on selection	Ch. 22, 23	
	19	Evolution of Populations	Ch. 23	
	20	Origin of Species	Ch. 24	
	21	Phylogenetics and Systematics	Ch. 26	
	22	Macroevolution:	Ch. 25	
	23	Tree of Life & Microbial Diversity	Ch. 25, 27, 28	
	24	To be announced		

Lab Exam: (time and location to be announced)

FREQUENTLY ASKED QUESTIONS

1. I am having trouble accessing the OWL site. How do I get help?

Contact Todd Bishop (Todd.Bishop@dal.ca) or Gillian Gass (Gillian.gass@dal.ca) and they will help you access the course website.

2. I missed my laboratory. What should I do?

You should talk to either Todd or Gillian as soon as possible so you can make up the laboratory later the same week. If that isn't possible, then you must contact one of the laboratory coordinators to explain your absence in order to avoid losing marks. If you miss more than one laboratory you must provide a medical certificate or other valid documentation.

3. I missed an exam because I was sick. What should I do about writing the make-up exam? Do I need a doctor's note?

You should contact Todd or Gillian concerning permission to write the make-up exam. A note from your doctor indicating the period you were ill is required and should be brought to the make up exam.

4. My team is playing a game out of town the day of the mid-term exam. What should I do about writing the make-up exam?

You should contact the Course Coordinator for permission to write the make-up exam. He will need a signed note from your coach to verify the reason for your absence.

5. I have questions about the lecture material. How do I get help?

You should contact the professor teaching the unit.

6. I'm not sure what material will be on the lecture exam. How do I get this information?

You should contact the professor teaching the lecture unit.

7. I have trouble with multiple choice exams. What should I do?

You may wish to attend a Study Skills Workshop on "Writing Multiple Choice Exams" offered through the Studying for Success program. Students sometimes find certain types of multiple choice questions more difficult than others. By reviewing your Biology 1010 midterm exam, you can determine whether you tend to get a particular type of question wrong more often than other types. If so, then you should make an effort to get as much practice as possible with that form of question (e.g. do questions at the end of text chapters, talk to the professor teaching the unit regarding sample exam questions, work with friends and create practice questions).

8. I can't attend the exam review session because I have class at that time. How do I arrange to see my exam?

You should contact your professor and he will arrange a time for you to see your exam.

9. I need a copy of my Biology 1010 marks before the course is over. How do I get my marks?

You can print out your mark from the website, or if that is not acceptable, you may request a formal letter with your grades from either Todd or Gillian.

10. May I make an audio recording of the lectures?

Yes, you can record the lectures for personal use, but under no circumstances are you to distribute that recording to anyone. A professor's lectures are created by the professor and are therefore considered intellectual property under copyright laws and are protected by those laws accordingly.

11. I'm not satisfied with my grade in the course. Can I do an extra assignment to get more marks?

No. The labs, quizzes and exams are the only graded material in the course, so treat each and every one seriously.