

SC/BIOL 1001 3.0
Biology II – Evolution, Ecology, Biodiversity & Conservation Biology

Note: All policies herein are binding and apply to all students registered in the course.

COURSE DIRECTOR / INSTRUCTORS / LAB DIRECTOR / TA COORDINATOR:

Dr. Alex Mills	[Course Director, Instructor in Sections M, P]	b1001lec@yorku.ca
Dr. Mark Vicari	[Instructor, Section O]	b1001lec@yorku.ca
Dr. Roberto Quinlan	[Instructor, Section N]	b1001lec@yorku.ca
Dr. Julie Clark	[Lab director]	b1001lab@yorku.ca
Melanie Goral	[TA Lab Coordinator]	b1001lab@yorku.ca

Email Etiquette

- Use only the **course email addresses** to contact the Instructor, Lab Director, and TA Coordinator. Emails pertaining to the course that are sent to personal YorkU addresses will not receive a response.
- Email contact **must be from a YorkU email address** and must include your name, student number and **section** (M, N, O, or P) in the subject line. Emails sent from non-YorkU email addresses or missing required information in the subject line will not receive a response.
- TAs will provide contact information in the first lab; when contacting your TA by email, **please include the course code (BIOL 1001) in the subject line, in addition to your name and student number.**
- We will try to respond to email within two working days, but this is not always possible.
- We may also answer your question in the next class if appropriate. Questions and answers we deem of interest to the entire class will be posted on the appropriate discussion board or sent via course announcements if urgent.
- Each Instructor will announce drop-in hours during class.

COURSE INFORMATION:

Calendar Description: A continuation of Biology I, exploring major unifying concepts and fundamental principles of biology, building on earlier concepts. Topics include mechanisms of evolution, ecology, a survey of biodiversity and conservation biology. **The laboratory and lecture components must be passed independently to pass the course.** Three credits. *Prerequisites:* SC/BIOL 10003.0. *Course credit exclusions:* SC/BIOL 1410 6.0

*You will be de-enrolled from the class if you do not have the appropriate pre-requisites or transfer credits.

Lectures:

You **MUST** attend your **registered** section. Clicker marks will only be assigned to students registered in the section attended.

Section M (Mills): Mon/Wed./Fri. 1:30–2:30 PM, LAS A

Section N (Quinlan): Mon./Wed./Fri. 1:30–2:30 PM, CLH L

Section O (Vicari): Wed. 7–10 PM, LAS C

Section P (Mills): Mon./Wed./Fri. 8:30–9:30 AM, VH A

Please note: BIOL 1001 sections (*i.e.*, sections M, N, O, and P) are **NOT** interchangeable. Although the same concepts will be explored in each section, tests are independent to each section, and midterm or final exam questions will differ between sections.

Classes begin the week of Jan. 5th, 2015. Should you miss the first week, it is your responsibility to find information regarding the course from Moodle, your fellow classmates, *etc.*, **not** your instructor.

Labs:

- If you are repeating BIOL 1001, you must also repeat the laboratory component. There are no lab exemptions.
- You **MUST** attend your registered section. **Groups 1, 2, and 3** start week of Jan. 12th; **Groups 4 and 5** start the week of Jan. 19th. See BIOL 1001 W/2015 Lab Manual and Moodle site for full schedule details and to determine your group (*i.e.*, your lab section's timetable, policies, lab exercises, assignments), and all things related to the lab.
- **Permanent lab switches must be made by Sun. Jan. 11th at 11:59pm.** You must do this yourself through the Registrar's system. These switches are not handled by the BIOL 1001 instructors or the First Year Office.

- In addition to purchasing the BIOL 1001 Lab Manual (2015 version), please retain your BIOL 1000 lab manual for reference.
- McMillan (2012) "Writing Papers in the Biological Sciences" 5th Ed, is also required.
- Any student NOT following lab safety regulations or disrupting the lab will be asked to leave the lab. Makeup labs will not be granted. See the lab manual for all lab safety regulations. Note: "Laboratory Safety and Student Conduct Agreement" completed for BIOL 1000 *also applies to BIOL 1001*. Any questions contact the Lab Director at b1001lab@yorku.ca
- Students should contact the TA Lab Coordinator (Melanie Goral) at b1001lab@yorku.ca regarding missed labs.

Course Website: The BIOL 1001 Moodle site will include all announcements, course materials, online quizzes, resources, and discussion forums. <http://www.yorku.ca/moodle/> There is a separate Moodle for labs.

COURSE OVERVIEW:

Welcome to Biology 1001! Biology II is a continuation of Biology I, and examines major concepts and ideas in the study of life, with a focus on evolution, how populations can be studied, how populations interact, and how these ideas link to conservation biology. In combination with Biology I, it is a prerequisite for nearly all other courses in Biology, and is required for all Biology and Biochemistry majors.

In this course, you are introduced to biological terminology and major concepts that underlie this field and continue to develop a foundation for further courses/work in biology and related areas. While the scope of material in this course is very broad, **students are encouraged to consider common threads and themes** that extend across the various topics, including those presented in BIOL 1000. This course is intended to help develop scientific literacy and critical thinking skills required of citizens in modern society.

Introductory survey courses often seem to be composed of a huge set of known, static facts, but the science of Biology (and other areas) is *dynamic, questioning, and continually changing over time*. In science, we are constantly challenging existing hypotheses and models through experimentation as new observations are made. Thus, you should feel comfortable asking questions in class and in the laboratory. We may not always be able to answer your questions, but we can usually help you find out more. Asking questions is an important skill in science (and it's always good to practise!). We also encourage you to seek answers to your questions on your own—another important skill to practise!

The **lab** is a key part of this course, as experimentation, observations and communication of biological phenomena are important aspects of doing, and understanding, science. Skills gained in the labs are valuable in future lab courses, and often can be applied in other academic or workplace situations.

You are provided with a list of course and topic-specific learning outcomes (see below), upon which tests are based. Some of these outcomes are addressed through assigned readings (posted on Moodle), while others will be addressed, or expanded upon, during class time. You are expected to read relevant sections of the text prior to class or lab. To help you to stay on top of your lecture readings, there are weekly reading quizzes (on Moodle). (Material from this course outline will be tested during Quiz 1.) You are expected to complete the readings and quizzes and come to class prepared. Class time will involve lectures, clicker questions, and group discussion. **You are expected to bring your clicker to the first class.** Midterm tests will be based on learning outcomes, and will consist of multiple choice (70-90%), with some short answer questions (10-30%). The final exam will be a similar format, but during a time scheduled by the Registrar's Office.

COURSE LEARNING OUTCOMES (additional LOs will be provided for individual topics):

Upon successful completion of BIOL 1001, students will be able to:

- Relate concepts from BIOL 1000 to those in BIOL 1001.
- Use the process of scientific inquiry to make effective decisions/arguments about real-world biological issues, including assessment of information in the media using scientific reasoning.
- Describe the nature of science, how scientific knowledge is iterative and cumulative, the process by which scientific knowledge comes to be accepted as valid, including the roles of prediction, evidence, consensus, and authority and what is, and is not, appropriate subject matter to scientific study.
- Explain and illustrate the predictive power of scientific theories and how acceptance or rejection of hypotheses takes place.
- Use proper biological terminology with correct scientific meaning and appropriate context.
- Explain, in basic terms, how evolution (via mechanisms not limited to natural selection) shapes life on Earth, the necessity of genetic variation (e.g., through mutation), and how many behavioural traits are adaptive.
- Describe how populations can change over time and space through intraspecific interactions and environmental constraints.

- Describe the history of evolutionary thought, and the evidence for evolution and the common ancestry of life.
- Explain how phylogenetics are used to generate hypotheses about the history of life on Earth.
- Describe the mechanisms by which speciation can occur, difficulties in assigning a universal definition of the term ‘species’, and why the term can vary between groups of organisms.
- Describe the different factors that can influence population growth, explaining differences in their effects.
- Describe how interspecific interactions can shape populations and the communities these populations comprise.
- Relate conservation plans with evolutionary processes and population dynamics.
- Describe how energy and matter flow and/or are recycled in ecosystems, and how ecosystems may change over time due to natural or human-induced processes.

LAB LEARNING OUTCOMES:

- Upon successful completion of the lab component of BIOL 1001 3.0, students will be able to:
- Carry out basic biological laboratory activities with safety and reliability.
 - Develop hypotheses and make predictions in a variety of simple biological laboratory experiments (real or simulated).
 - Make descriptive observations of biological specimens (via microscope and/or eye).
 - Prepare clear, appropriately labelled and formatted figures and tables for presentation of results from biology experiments (real or simulated).
 - Perform basic literature searches and find library resources relating to biological topics.
 - Organize and display multiple reference courses in a requested format (relating to an acceptable biological journal)
 - Prepare a basic biology laboratory report in the appropriate format, (including several of the items above) citing and listing references correctly.
 - Describe what constitutes plagiarism.
 - Prepare written work that paraphrases (and cites) reference sources appropriately (and otherwise abides by principles of academic integrity).
 - Effectively and collegially work with others in the biology laboratory and class setting.

COURSE TOOLS & LEARNING MATERIALS:

Required:

- Freeman *et al.*, 2013. ‘Biological Sciences’, 2nd Canadian Ed. Pearson. (NOT the same text as BIOL 1000).
 - Copies of the text are available on [short-term reserve in Steacie Library](#).
 - Other introductory Biology texts and writing guides may be used, but **students are responsible for using the index/table of contents to determine relevant portions of those other books.**
 - Students are expected to read relevant sections of the text/other assigned readings prior to class or lab. (There will be short quizzes completed on Moodle, based on these readings.)
- McMillan. 2012. ‘Writing Papers in the Biological Sciences’, 5th Ed. WH Freeman Publishing. (Same as BIOL 1000)
 - Sold separately from text package; valuable writing resource for your academic scientific career.
- BIOL 1000 Lab Manual - Retain this manual for reference.
- BIOL 1001 Winter 2015 Lab Manual - **ONLY** available in the York Bookstore.
- Turning Point clicker (with or without an LCD screen can be used). You **CAN** use the clicker you used for BIOL 1000 (if so it should already be registered).
 - **Clickers should be registered by Jan. 5th; they will be used during the first week of classes.** See <http://www.yorku.ca/prs/students/register.htm>. See General Clicker Information document on course Moodle site for additional information. New/used clickers can be purchased through Computing Services (<http://www.yorku.ca/prs/students/purchase.htm>) (submit order online).
- **Course Website:** <http://www.yorku.ca/moodle/> (Check frequently for announcements, lecture notes, quizzes, etc.)

EVALUATION: [tentative - will be finalized by Jan. 20th]

Both the lecture and lab components **MUST** be passed, independent of one another, to pass the course. The W term drop date is March 6th, 2015. **NOTE: there are NO extra credit assignments.**

Midterm I:	17%	}	100%
Midterm II:	23%		
Final Exam:	33% (cumulative)		
Laboratory:	22% (mandatory, even if repeating the course)		
Activities*:	<u>5%*</u>		

- * Many items in this category will include points for participation/completion (e.g., clicker questions), while others are marked on the basis of a correct answer (e.g., quizzes). **The lowest 20% of clicker questions/quizzes (including zeroes) will be dropped from the student's score** to account for missed classes (e.g., due to illness, or other reasons), forgotten clickers, technical issues with quizzes, etc. Because this marking scheme takes into account potentially missed classes, doctor's notes, etc., will not be accepted.
- Midterms are primarily multiple choice, but will contain short answer questions.** Midterms will be held during class time (Vicari, Section O) or on **Friday evenings (Mills and Quinlan, Sections M, N, and P)**. Midterms are ~50 minutes. The April exam will include cumulative questions. Dates/times/rooms for April exams are scheduled and published by the Registrar's Office (RO); instructors find out when the exam is the same day you do. You must write midterms and the final exam for the section in which you are registered.

Test/Exam Schedule (Tests must be written in the section in which you are registered.)

	Section M (Mills)	Section N (Quinlan)	Section O (Vicari)**	Section P (Mills)
Midterm I	Fri. January 30 th (6:30 pm - Evening)	Fri. January 30 th (6:30 pm - Evening)	Wed. February 4 th (In class)	Fri. January 30 th (6:30 pm - Evening)
Midterm II	Fri. February 27 th (6:30 pm - Evening)	Fri. February 27 th (6:30 pm - Evening)	Wed. March 4 th (In class)	Fri. February 27 th (6:30 pm - Evening)
April Exam	Final exam period in April (to be determined by RO; April 8-24, 2015)			

**Section O: on midterm dates, the midterm will take place during the first hour, followed by lecture until the end of class time.

COURSE POLICIES:

1. E-MAIL ETIQUETTE:

- You **MUST** use your @yorku.ca email address when emailing instructors and others within the university. Other email addresses (e.g., Hotmail, Gmail) are filtered out by the university's email system and do not reach their intended recipient. **Emails from addresses other than an @yorku.ca email will NOT receive a response.**
- Subject line:** your name, student number, your section (M/N/O/P) and a brief indication of topic (e.g., 'Question regarding natural selection'). We receive a lot of email and this practise helps us sort emails efficiently. **Emails without the required information will not receive a response.**
- Include your NAME at the end of each email.** It's just polite.
- Remember, you are in a professional environment, and thus all your written correspondence, including emails, should be professionally conducted.** Text-messaging language is UNACCEPTABLE in emails to anyone (instructors, TAs, staff, etc.) within the university, as are emails written entirely in upper-case letters, etc.
- Please allow 48 hours (2 work days) to respond.
- Before emailing your instructor, **consider the nature of your question and whether another resource should be consulted first.** For example, lab-related queries should be directed to the Lab Director/TA Coordinator/TA. **Don't be surprised if you don't receive a response to a question that could be easily answered by looking at the Course Outline or the Moodle site.** Also, don't write to the instructor to ask what you missed in class—ask classmates instead.
- If you have a question that is long and convoluted, then attend your instructor's drop-in hours. Many questions can't be answered adequately via email, so don't be surprised if your instructor suggests coming by during drop-in hours.

2. MISSED MIDTERMS/FINAL:

- If you are ill, do not enter the exam room; once you have written an exam, you mark will stand regardless of the reason you may have once the exam is over. Please note, you will be required to present acceptable documentation (see below).
- You MUST contact (email) your instructor **within TWO (2) days (48 hours) of missing a midterm exam** (the sooner the better).
- Valid and appropriately detailed documentation supporting the events (typically medical or emergency related) preventing your attendance must be received at the First Year Biology Office (102 LSB) **within ONE (1) WEEK (7 calendar days) of the missed test** (as soon as you are able to return to school if sick for more than a week). Documentation should cover the date of the missed test.
 - o Medical related: you **MUST** see a physician within 24 hours of the missed test—ideally on the same day—such that the physician can confirm that you are too ill to attend the test **based on medical examination.** Valid documentation for medical situations consists of an 'Attending Physician's Statement'

(http://www.registrar.yorku.ca/pdf/attend_physician_statement.pdf). A note that simply says you were seen in the clinic will not be accepted.

- Death of an immediate family member requires a death certificate or letter from the funeral director.
 - See #9 (Accommodations) for other possible non-medical reasons that may be accommodated.
 - If you miss a test with a legitimate documented reason, permission *may* be granted to take a makeup test (if applicable). Makeup tests may differ in format from the original test (i.e., include more short/long answer questions). **If appropriate documentation is NOT provided within ONE (1) week (7 calendar days), a zero will be earned on the missed midterm.**
 - NOT all situations will be accommodated; those that aren't will earn a zero on the missed midterm. Circumstances not accommodated include, but are not limited to: schedule confusion, sleeping in, missing the bus, rain or snow/ice causing increased travel time to campus, personal endeavours (including a job), busy lives (including too many assignments or tests that same week/day, etc.)
 - **ALL students** who miss the **FINAL EXAM** MUST petition to their home faculty, via a petition, if they are seeking deferred standing. No student will be granted deferred standing by the instructor via a Deferred Standing Agreement Form. It will be the Petition Committee's decision whether deferred standing is granted; if it is, the committee will also set the deadline for writing the deferred exam. **Denied petitions will result in a zero on the final exam.** See <http://www.registrar.yorku.ca/petitions/academic/> for information.
 - The format of the make-up final exam may be essay, short answer, and/or multiple choice.
3. **CLICKERS:**
- Write down your clicker ID number and keep it in a safe place.
 - It is your responsibility to register your clicker online (see <http://www.yorku.ca/prs/students/register.htm>). Your clicker **MUST** be registered by Jan. 5th. Failure to register your clicker will result in the loss of clicker participation marks, until you do so.
 - If you **replace** your clicker, you **must register it immediately**, and inform your instructor (by email) within 1 day of replacing your clicker.
 - Your email must include your name, student number, and section (in the subject line, as per #1), your **old clicker ID number, and your new clicker ID number.** Both ID numbers are required to transfer your clicker marks to the new ID number. Failure to communicate this information will result in the loss of participation marks until you have done so.
 - Clicker marks are gained on the basis of participation. Because the nature of the clicker/quiz marking scheme takes into account missed classes for various reasons (ill, appointments, etc.) by dropping the lowest 20% (i.e., you must participate in at least 80% of the questions to receive full marks), doctor's notes and other documentation will **NOT** be accepted for missed classes. This Activities marking scheme also takes into account (temporary) technical glitches involving clickers and quizzes. It is your responsibility to seek technical assistance regarding clickers at the UIT Helpdesk at William Small. (<http://www.yorku.ca/prs/students/help.htm>); your instructors are not trained to repair small electronic devices beyond suggesting that you check the batteries.

4. QUIZZES:

- Quizzes will occur more or less weekly and will mostly deal with readings to prepare you for the upcoming week of classes, however, some review questions may be included.
- With the exception of a participation point in each quiz (you must complete the appropriate question to gain this point), marks are awarded for quizzes on the basis of a correct answer.
- You have one try and a limited amount of time in which to complete the quiz. Please note the deadline for the quizzes (different depending on section). If you are completing a quiz when the deadline passes, you will receive no marks for that quiz.
- Save your quiz answers as you work your way through the quiz.
- Together, clicker and quiz marks comprise the Activities portion of your grade (5%). In order to get the full 5%, you must earn 80% of the total number of points (each clicker question is worth 1 point and based on participation; each quiz question is worth 1 point and awarded on correctness).
- If you are having issues with a quiz (can't see questions), please check your browser settings (particularly if you have done a software update).
- Every year, numerous students don't bother to use clickers or complete the reading quizzes. This lack of participation (and resulting low Activities mark) often had consequences on the final grade (e.g., a student would receive a B instead of a B+)

5. EXAM MARKS & REVIEWING EXAMS:

- Exams typically take at least 2 weeks to mark. This is because even for tests with only multiple choice questions, Scantron files must be reviewed. Posting impatient remarks (in email, forums, etc.) about exam marks doesn't make the process move any faster. Marks will be posted in Moodle. Exam marks are not negotiable. Please see #6 if you think there has been an error in your exam mark calculation.
- Exams will not be handed back to students, but you will have opportunities to review your exams. These dates will be posted on Moodle. If you have a concern about marking of a short-answer question, please see #6.

6. REGRADING/MARK CALCULATION ERRORS:

- If you believe a written answer on a test was marked incorrectly you must submit a reappraisal request form, available from 102 LSB, detailing your rationale (based on academic merit) and paper to the First Year Biology Office (102 LSB) within 5 business days of the test mark being made available to you. **ONLY** those answers written in ink are eligible for re-marking. **NOTE: re-marking can result in the mark being raised, confirmed, or lowered.**
- To be fair and consistent with regards to the entire class, **individual grades are NOT negotiable**. We cannot provide 'extra credit' assignments. Marks for assignments and tests are not 'rounded' or 'bell-curved'. **Contact the section instructor about marks ONLY if there is a clear error in your mark (calculation, clerical, etc.) as soon as possible within ONE (1) week of the test score being made available to you.** It is highly unlikely that you will receive a response regarding any other mark-related queries.
- Please see the BIOL 1001 Lab Manual for reappraisal information pertaining to lab assignments.

7. FORUM CODE OF CONDUCT:

- Students are encouraged to participate in the online Moodle Forums to discuss course concepts, organize study groups, and ask questions relating to Biology. The discussion on the forums has typically been polite and respectful, and we hope this will continue. Students are expected to follow these guidelines while using the Moodle forums:
 - i. Before posting a question, **read other threads** to see if your question has already been answered. (You can search the forums—you don't have to read each post!). If your question hasn't already been asked, please post in the most appropriate forum. (E.g., if your question is about a lab submission, your post should be in the "Lab" forum.) Posts put in the inappropriate forum will be deleted.
 - ii. Use a clear, informative subject line. Try to be as specific as possible.
 - iii. Post comments appropriate to the particular discussion. Off-topic posts may be moved or deleted.
 - iv. **Be respectful**: your instructors have provided this space for you to discuss course material with your classmates. Posts containing personal insults/attacks/intimidation/inappropriate language/profanity will be removed. **(It is worth remembering that your instructors read forum posts!)**
 - v. Post only material relevant to BIOL 1001/Biology. Other posts are likely to be deleted.
 - vi. While it is appropriate to engage in debate/discourse on biological topics, such discussions should be respectful and evidence-based. Evidence should be from trusted sources—consult with the library or your instructor if you are not sure. (See: <http://www.yorku.ca/webclass/module4a.html>)
 - vii. Any posts that appear to violate our code of conduct may be edited, moved to a hidden forum, or deleted at the discretion of instructors/moderators. If posts give indications of violations of academic honesty or the York University Student Code of Conduct (: <http://www.yorku.ca/oscr/codeofrr.html>) further action will be taken.
 - viii. If you notice any inappropriate threads please contact the Course Director.

Disclaimer: While Moodle moderators/instructors will attempt to remove/edit objectionable/inappropriate material as quickly as possible, it is not always possible to review every post in a timely manner. All posts made on the forums express the views and opinions of the post's author and not the moderators/instructors (except for posts by these people) and they cannot be held liable.

8. LAB POLICIES:

- Students must follow lab policies outlined in the lab manual and discussed above. Students are expected to read these policies, and sign the laboratory code of conduct agreement before the first lab session.

9. ACCOMMODATIONS:

- Submit CDS Accommodation letters to both your Section Instructor and the Lab Director by January 9, 2015. These can be dropped off to the First Year Biology Office (102 LSB), with instructions to place them in the Section Instructor (indicate which instructor you have) and Lab Director's mailboxes. Please email both your instructor and lab director to make us aware of accommodation letter submissions. Please note you must submit this information for BIOL 1001, even if you already did so previously for BIOL1000!
- Please make the instructors (and TA Coordinator if labs are affected) aware of any **religious observance conflicts** occurring at any point during the term, for which accommodations will be required (no accommodations will be made for clicker questions; please see above), **by January 9, 2015**. Submit supporting documentation to the First Year Biology Office (102 LSB). <https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs>
- Students who feel that there are extenuating circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with the Course Director as soon as possible. <http://www.yorku.ca/univsec/senate/committees/sac/sturesp.htm>
- **Please note:** "Senate policy states that students are expected to monitor their progress in courses, taking into account their personal and academic circumstances, and to make the necessary adjustments to their workload to meet the requirements and deadlines." (from Senate Policy of Students' Responsibilities in the Petition/Appeal Processes). **The drop deadline is March 6, 2015.**
- Students with physical, learning or psychiatric disabilities who require reasonable accommodations in resources or evaluation methods are encouraged to consult with the Office for Persons with Disabilities (OPD) and ensure that requests for appropriate accommodations are arranged with the Section Instructor early in the term.

10. ACADEMIC INTEGRITY:

- Students are expected to be familiar with and follow York University's policies regarding academic integrity. Please consult the lab manual and website below for more details: <http://www.yorku.ca/academicintegrity/students/index.htm>
- Student information sheet, see: <http://www.yorku.ca/secretariat/policies/document.php?document=69>

11. RECORDING LECTURES:

- **Photographs or video recordings of any portions of the lectures (including the slides) are PROHIBITED. Images and material presented are subject to Canadian copyright law.**
- You must ask your instructor if audio recordings are permitted in their classroom. If allowed, audio recordings are permitted provided they are used **ONLY** as a personal study aid, and are **NOT** sold, passed on to others, or posted online. Remember the lectures are the intellectual property of the professor and cannot be distributed without permission.

12. BIOL 1001 CLASS COVENANT OF CIVILITY

- We will discuss civil behaviour in class and establish a Covenant of Civility, a list of what we consider to be acceptable (civil) behaviour—which enhances teaching and learning opportunities—and unacceptable (disruptive or uncivil) behaviour—which diminishes the teaching and learning opportunities for everyone in the class.

RECOMMENDATIONS FOR SUCCESS:

- **Watch your vocabulary!** Your biology vocabulary that is. Biology uses words that may seem quite familiar to you, in very specific ways. This can create confusion, particularly with respect to words that are often used in everyday language. Make sure when you are reading the text, listening in lecture, and studying that you are thinking of the appropriate scientific definition. You should practise your biology vocabulary, just like you would a foreign language.
- **Look up words you don't know in the text glossary.** If you look up words online, make sure the definitions come from a reliable source.
- **Study in groups!** What one person doesn't understand, another may be able to teach. Research has shown that helping each other to learn (*i.e.*, study) improves marks on both sides: for the person being helped and the person explaining the concept.
- **Draw it out!** Take problems and sketch them out. This is especially useful when discussing movement between populations. Don't try and rely on keeping everything straight in your head.

- **Take notes in class.** Instructors will discuss/explain concepts that are not elaborated upon in the text or in the PowerPoint notes. Lecture notes provided by the instructor are there only as a skeleton guide; they are not a complete set of notes.
- **If you have a question in class, take note of it and ask it.**
- **This course will test your knowledge and understanding of fundamental evolutionary and ecological concepts, in addition to your ability to read/interpret test questions. Read test questions carefully and answer the question being asked.** For short answer questions, do NOT simply look for a keyword and then regurgitate all you ever learned, or wish you learned, about that word.
- **Use the learning outcomes to prepare for tests.** For your tests/exams, you will need to know the learning outcomes. **Do NOT memorize your text and/or lecture notes.** Rather, work through the learning objectives using your notes from the text and lectures.
- **Tempted to defer?** History says you shouldn't. On average, deferred exam marks are 10-15% lower, even if writing the exact same test. Sure, you might feel a bit unprepared, but students don't study given more time. Face it, we're all human and procrastination is one of those things we're quite attached to.
- **Prioritize!** Use the weightings of course assessments to prioritize your time and effort. University is about learning to manage your time—it takes practice!
- **Guidelines for answering exam questions:** exams will consist of multiple choice questions (*i.e.*, choose the best answer), and short answer questions (that may include defining terms, explaining, and application of concepts) All will require more than regurgitation of information. Keep in mind the following as you answer questions:
 - To answer exam questions correctly, you must read them carefully and consider exactly what is being asked. The importance of knowing exactly what a question is asking cannot be overstressed. Ask an instructor if you are unsure (but remember, we can only guide you so much). The key here is to practise answering questions throughout the term [*e.g.*, clicker and quiz questions, those from your textbook (multiple choice AND conceptual, short answer questions), and questions that you and your peers create].
 - **Multiple choice questions** – each question is worth 1 mark. Thus, you should work your way through your test answering all questions that you can. Mark those that you cannot answer, and return to these later. You do not have to answer the questions sequentially—this means that you shouldn't spend 15 minutes on a question early on in the test to the detriment of answering other questions.
 - **Short answer** – provide answers in clear, legible writing/printing (if we can't read it, we can't mark it), and in sentence form. Point form is acceptable, but you are responsible for demonstrating the link between points, and each point must be a complete idea (*i.e.*, sentence). A question worth 2 points typically requires 2 clear and pertinent points that are clearly linked, demonstrates coherence, and do not repeat each other.
 - Don't think that simply regurgitating information from the text/lecture provides a suitable answer. You must answer the question being asked and in your OWN words.
 - Brevity, while still answering the question, is rewarded. We try to limit how much you can write by providing you with a space that reflects the length of the answer required. Don't try to squeeze in 14 lines for a question worth 2 marks (and in a space that looks like it would only comfortably accommodate 2 or 3 lines). Don't re-write the question—this takes up precious space and time!

We wish you great success in BIOL 1001! If you need any help, please contact the appropriate individual.