

BIO A02S - *Life on Earth: Form, Function and Interactions* - Winter 2013

COURSE SYLLABUS

Welcome to Introductory Biology at UTSC!

Objectives and Outcomes

The primary goal of this UTSC course (BIO A02S) is to provide students with the strong foundation needed to become a successful biologist. During the term you will learn:

- (1) the major principles of plant and animal form and function;
- (2) the key concepts of ecology focusing on the interactions among organisms and between organisms and their environment;
- (3) an examination of the diversity of life in the plant, animal and fungal kingdoms;
- (4) the essential skills to become an active learner of science;
- (5) some basic laboratory techniques that are required to pursue your chosen field in science;
- (6) some approaches for finding and reading relevant biology research articles;
- (7) the proper approach to collecting and analyzing data and then communicating the results using the writing and critical thinking skills presented in labs.

Overview

BIO A02S is taught in the Winter Term (January to April) and consists of thirty-six lectures on Biology content (three 50-minute lectures per week) and six labs (one 3-hour lab practical every two weeks throughout the term).

The **Biology Lectures are on Tuesday, Thursday and Friday** (at times depending on your Lecture Section (LEC01 or LEC02). There are **three modules consisting of 12 lectures per module**. The **first module** of the course will introduce students to plant form and function and examine the diversity of the plant kingdom. The **second module** will focus on animal form and function and explore the diversity of the animal kingdom. The **third module** will examine ecological relationships at the population, community and ecosystem level and outline the applications for conservation biology. The diversity of fungal kingdom will also be covered in this module. The diversity of life is emphasized throughout this course with emphasis on the plants, animals and fungi but should be related to the examination of prokaryotes, viruses/prions and protists covered during the “Tree of Life” lectures from BIO A01F (Fall 2011).

The **Biology Labs are scheduled on Tuesdays, Wednesdays and Thursdays** (at times depending on your Practical Section (P0001 to P0034). These labs are led by teaching assistants (TAs) and are designed to provide students with opportunities to develop a variety of important skills that will be beneficial throughout their university experience in biology. Key concepts in science writing, math, statistics and critical thinking will be integrated into the course content.

Course Personnel

There are several key people you should get to know in this course: (1) the Instructors, (2) the Course Coordinator, (3) the Bio-Help TA and (4) your Lab TA.

(1) Instructors

- **Dr. Ivana Stehlik is the Instructor for the first module of the Winter 2012 term.**

Office: **SW-421E** (only during office hours)

Office Hours: **TBA or by Appointment** (use your U of T email account for all emails)

Email: biolife@utsc.utoronto.ca (include *Stehlik* in subject line)

- **Dr. Stephen Reid is the Instructor for the second module of the Winter 2012 term.**

Office: **SW-526** (only during office hours)

Office Hours: **TBA or by Appointment** (use your UofT email account for all emails)

Email: biolife@utsc.utoronto.ca (include *Reid* in subject line)

- **Dr. Connie Soros is the Instructor for the third module of the Winter 2012 term.**

Office: **SW- 540B** (only during office hours)

Office Hours: **TBA or by Appointment** (use your U of T email account for all emails to arrange appointments)

Email: biolife@utsc.utoronto.ca (include *Soros* in subject line)

(2) Course/Lab Coordinator

- **Dr. Robin Marushia is the Course Coordinator for BIO A02S for the Winter 2013 term.** In addition to delivering the lectures, she is will deal with matters such as late enrollment, missed tests, missed labs, marks management and general advising as related to the course as a whole.

Office: **SY-246** (by appointment)

Office Hours: **by Appointment** (use your U of T email account for all emails).

Email: biolife@utsc.utoronto.ca (include *Marushia* in subject line)

(3) Teaching Assistant (TA) – Bio-Help TA

There is **one** Teaching Assistant who will attend lectures, and who will be familiar with the lab content. This **Bio-Help TA will be available in the Library to answer your questions about course content and help with problems encountered with lab assignments.** The **times and locations when the Bio-Help TA is available in the Library will be posted on the Course Webpage (Blackboard and Intranet)** throughout the Winter 2012 Semester. Check for updates as the available hours will change as students' needs change during the term.

(4) Teaching Assistant (TA) – Practical TA

The **BIO A02S Labs are located in Rooms SW-237 and SW-240.**

Students must attend the specific Practical (Lab Section) in which they are registered.

Each lab is led by a **Teaching Assistant (= TA)**, who will guide you through the lab exercises/experiments. Learn your Teaching Assistant's name and use the email address provided by your TA on your section's Blackboard page to contact your TA if you have questions/concerns regarding your labs or lab assignments.

Communication within BIO A02S

The key source for information for BIO A02S is on the Course Webpage provided on both Blackboard. Information such as contact information and office hours, lecture outlines and notes, assignment instructions, test dates and locations and other useful resources will be posted on Blackboard throughout the course. Announcements and the video-taped lectures (see Weboption and FS² links) for BIO A02S will be posted on Blackboard. Exam Marks will also be posted to the Blackboard Course Webpage.

Each Practical section also has its own Blackboard webpage; TA's will post information related to Practicals and Assignments on this webpage. Practical marks will be posted on the Blackboard Practical webpage. Please check the BIO A02S Course Webpages frequently!

Always check the BIO A02S Course Webpages for information before contacting the Instructors/Lab Coordinator, or your TA.

Some events, such as Exam Viewings, are visible through the Events function of the UTSC Intranet. Official announcements of these events will come through Blackboard once confirmed.

Students should use their UTORid to log on to BIO A02S Webpages. Log onto Blackboard by clicking the "Portal" link on the UTSC Homepage. Log onto the Intranet by clicking the "Intranet" link on the UTSC Homepage.

NOTE: You will need a UTSC computer account in order to logon onto Blackboard and the UTSC Intranet. The instructions for setting up your account are given on the **UTSC Intranet Logon Homepage**.

One central email address serves BIOA02: biolife@utsc.utoronto.ca.

This is to help professors stay organized and answer your emails more quickly and effectively.

Please do not use professors' email addresses for BIOA02 communication!

Always use your UTSC or U of T email address for contacting the Instructors, the Course/Lab Coordinator, and the Teaching Assistants (TAs).

Emails from other email addresses will not be answered.

Include the Instructor's name you wish to email in the "Subject Line"

Course Materials:

(A) Textbooks and Lab Manual

1. The complete **Textbook Package** can be purchased at the **UTSC Bookstore** located above Tim Horton's in the Bladen Wing. It includes the following items:

(1) The **Textbook** for BIO A02S is:

Russell PJ, Wolfe SL, Hertz PE, Starr C, Fenton B, Addy H, Maxwell D, Haffie T, Davey K. 2012. *Biology: exploring the diversity of life. (2nd Canadian ed.)* 3-volume paperback. Toronto: Nelson Education Ltd.

The 1st Edition may be acceptable for some students; however, references to text will be incorrect.

(2) The **Textbook Website (Coursemate)** developed by the Publisher of the textbook has additional resources that students will find useful in both introductory biology courses (BIO A01F and BIO A02S). An Access Code to this site is included in the purchase.

2. The **Lab Manual** is a separate publication that is required for all Lab Practicals. It is entitled:

Olaveson M, Rush S., Gladilina E., Marushia, R. 2013. *BIO A02S - Life on earth: form, function and interactions - Lab Manual for Winter 2013*. Toronto, Ontario: University of Toronto Scarborough Printing Services. 146 p.

There are major changes in the new Winter 2013 Lab Manual. Photocopies of old, and now out-of-date, lab manuals are NOT ACCEPTABLE. Assignments (purple pages) for 2013 are unique to this version of the Manual, and originals from the Manual are required to receive credit for your Practicals.

The **Lab Manual can be obtained**

- (1) **at the UTSC Bookstore** (available in mid-December 2012)
- (2) **from the Blackboard course page** (in the folder entitled "Lab Manual" under "Lab Information") – this is provided primarily for reference purposes.

STUDENTS MUST HAVE THEIR OWN COPY OF THE APPROPRIATE LAB INFORMATION when they come to their Practical. It is the responsibility of each student to read each lab in advance and bring the Manual to each of their scheduled Practicals.

(B) Lab Coats / Protective Eyewear

Lab coats are required for all Biology labs at UTSC; protective eyewear is required for some labs as indicated in your Lab Manual. **Lab coats and protective eyewear are sold in various locations on campus (BioSA, EPSA, Bookstore). Refer to your Lab Manual (and BIO A02 webpages) for details for locations and times.** Plastic gloves and other supplies will be provided in the labs as needed. Students should bring pencils, pens, markers, rulers, erasers, and calculators to all labs. **Always check your Lab Manual for any special requirements for each of your labs.**

(C) Statement regarding Use of Turnitin

During the Winter 2013 Semester, we will be using the website “Turnitin.com” for the submission of assignments (e.g. Formal Lab Reports) in BIO A02S. More information will be provided once all of the details have been worked out. For now, 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 essays 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 web site”.

Course Organization

The content in **BIO A02S** will be delivered through thirty-six 50-minute Biology Lectures and six 3-hour labs. Students will be evaluated through lab quizzes and reports, one assignment, one formal lab report, two midterm tests and a non-cumulative final exam.

The students’ understanding of the material covered in each Module will be assessed by an exam using a multiple-choice question format. The exams will be scheduled in the week following the conclusion of each Module; the date/time and location will be announced later and posted on the BIO A02S Course Webpages.

The final exam is **noncumulative**; *however*, as in BIOA01H3 F, the final exam *will include synthetic questions relating to the Tree of Life and other themes important to all 3 modules*. The final exam will also use a multiple-choice question format and will be scheduled in the UTSC Exam Period in April-May 2012; the details will be announced later and posted on the BIO A02S Course Webpages.

Course Evaluation

The final grade in BIO A02S will be determined as follows:

<i>Practicals:</i>	Each Practical:	~3%
		<u>x 6 Practicals</u>
	Practicals:	= 18%
	Assignment:	4%
	Formal Lab Report:	8%
<i>Lecture:</i>	Module 1 Midterm:	20%
	Module 2 Midterm:	20%
	Module 3 + Synthesis Exam:	30%

Course Content

1. Lecture Topics (*tentative; may change over course*)

Module 1: Plant Form and Function

- Tree of Life – Plants
- Plant Cells and Plant Tissues
- From Seed to Tree – The Plant Body
- From Tree to Seed – Reproduction and Development in Flowering Plants
- Transport in Plants
- Plant Nutrition and Soils
- Plant Defense
- Plant Life ‘on the Edge’

Module 2: Animal Form and Function

- Introduction to Physiology
- The Nervous System
- The Endocrine System
- Skeletal Muscles
- Hearts and Circulatory Systems
- Respiratory Systems
- Cardiorespiratory Regulation
- Metabolic Rate
- Thermal Regulation
- Osmotic and Ionic Regulation
- Digestive Physiology
- The Immune System

Module 3: Ecology

- Biology of Animal Behaviour
- Population Ecology
- Population Interactions
- Community Ecology
- Tree of Life – Fungi
- Ecosystem Ecology
- Plant and Animal Ecophysiology
- The Biosphere and the Human Animal
- Tree of Life – Conservation Biology and the Importance of Biodiversity

2. Lab Topics

- Lab 1:** A Survey of Plant Diversity and an Examination of the Vegetative Structure of Plants
- Lab 2:** A Survey of Plant Diversity with an Examination of Angiosperm Flowers
- Lab 3:** Behavioural Responses in Terrestrial Isopods
- Lab 4:** Physiological Responses to Temperature using *Daphnia* spp.
- Lab 5:** Population Sampling Methods
- Lab 6:** Population Growth Experiment using an Aquatic Plant Bioassay

Course Regulations**1. Attendance at Lectures**

Attendance at the Lectures is very highly recommended. In order 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 with Textbook references; 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
- **to download any posted LECTURE material** from the BIO A02S Webpage before each Lecture
- **to come to the Lecture and take your own notes** with the aim of understanding the main concepts covered
- **to re-read the relevant sections in your Textbook** as needed after the Lecture and **create your own study notes; review your notes frequently**
- **to arrange to see the Instructor(s) and/or Bio-Help TAs**, during scheduled Office Hours or by appointment, if you realize that you do not understand the concepts covered in the lectures or the labs.

2. Attendance at Labs

Attendance in the Labs is required in order to get credit for that lab and any work associated with the lab. Most labs will start with a Quiz on the Lab Background Information so **be ON TIME!!** If you arrive at your lab late (within 10 minutes of the scheduled Lab start time), you may write the Quiz in the time remaining. The Lab door will be closed at the end of the Quiz while the TA introduces the lab. **If the door is closed – you are late and will be excluded from Practical!**

If you are more than 10 minutes late for a Lab or if you miss a Lab entirely, you **must discuss your situation(s) with the Course Coordinator**, Dr. Robin Marushia. You will not be allowed to submit Lab Reports/Assignments for Labs that you have not attended **without a valid documentable and verifiable reason**. Any Lab Reports/Assignments allowed to be submitted late must be given to the Lab Coordinator and will be assessed the appropriate late penalty (10% of the value of the work per day); **work will not be accepted if more than 5 days late without permission of the Course Coordinator.**

3. Tests / Exams

If you cannot attend Friday evening or Saturday Tests/Exams for religious reasons, please **notify the Course Coordinator**, Dr. Robin Marushia, **in writing (by email) within one week of the announced Exam date**; **an alternative time will be presented if approved by the Instructor.**

If you miss a the Midterm Exam, the Course Coordinator, Dr. Robin Marushia, **must be contacted within 72 hours (or 3 days) of the scheduled exam (by email)**. Only students with a valid, documented and verifiable medical reason, or a personal documented excuse (of an extreme nature) will be given any consideration for a Makeup Exam. ***Documentation must apply to the date/time of the originally scheduled Test.*** (Note: The format of the makeup midterm exam may differ from the original midterm while covering the same content).

Students who miss the Final Exam must contact the Registrar's Office (at http://www.uts.utoronto.ca/~registrar/current_students/deferred_exams) and follow the procedures outlined in order to arrange to write a Deferred Final Exam. The Deferred Final Exam will be scheduled during the August 2012 Exam Period. (Note: The format of the Deferred Final Exam may differ from the original Final Exam while covering the same content).

4. Required Documentation for Missed Term Work (e.g. Assignments /Labs /Tests)

In order to be eligible for consideration for a missed Midterm Exam or to receive credit (whole/partial) for missed Labs (and associated Assignments), students **must** provide a valid documented reason **to the Course Coordinator within 1 week of the missed evaluation.**

For medical reasons, the **attending physician** (who must be registered with the College of Physicians and Surgeons) **must complete** the Standard University of Toronto Medical Certificate. Copies of the standard University of Toronto Medical Certificate are available on the UTSC Registrar's Website. The **date/time of the original lab or test that was missed MUST BE CLEARLY INDICATED** as well as a clear statement of the medical problem. Make sure that the Student's Name and UTSC Student Number are clearly indicated.

For other reasons (death in family, car accident/problems, transportation issues), students must provide verifiable documentation as appropriate to the situation and **discuss the situation with the Course Coordinator**, Dr. Robin Marushia, **as soon as possible**. **Students should always get valid and verifiable documentation for any situations that causes them to miss any course marked work in the course.**

NOTE: Reasons such as work, vacation, sleeping-in, other tests/exams and assignments in other courses are NOT ACCEPTABLE reasons for not completing work in BIOA02 S.

Important University of Toronto Scarborough (UTSC) Policies

The University of Toronto Scarborough 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 ensuring 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 cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters outlines behaviours that constitute academic dishonesty and the processes for addressing such offences (see <http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) Potential offences include, but are not limited to:

(1) in term-work (e.g. papers, reports and assignments):

- using someone else's ideas or words without appropriate acknowledgement
- submitting your own work in more than one course without the permission of the instructor
- making up sources or facts
- obtaining or providing unauthorized assistance on any assignment

(2) on tests and exams:

- using or possessing unauthorized aids
- looking at someone else's answers during an exam or test
- misrepresenting your identity

(3) in academic work:

- falsifying institutional documents or grades
- falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your Instructor(s) or from other institutional resources (see <http://www.utoronto.ca/academicintegrity/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 Instructors in BIO A02S and/or the AccessAbility Services Office as soon as possible. BIO A02S personnel will work with you and AccessAbility Services to ensure you can achieve your learning goals in this Course. The **UTSC AccessAbility Services Office** is located in **Room SW-302**. Qualified staff is available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. Note all enquiries are confidential. You can contact **AccessAbility Services** at 416-287-7560 or ability@utsc.utoronto.ca. The sooner you let us know about your needs, the quicker we can arrange the assistance need in achieving your learning goals in this Course.

3. Information on Religious Observances

It is a 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/Lab Coordinator** of any potential conflicts **at least 7 days prior to the date of the test or due date of the assignment**. Failure to do so may result in special consideration not being granted; documentation may be required.