

**Department of Biology Course Outline**

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| SC/BIOL 1500 3.00 Introduction to Biology**Some components of this course are online**There are in-person classes after Jan. 31st on campus that may or may not be recorded.This course is presented in Toronto time (Eastern Time Zone) |
| **Technology Requirements:** You **must have access to reliable high-speed internet connection (wi-fi) and a computer** in order to take this course. The following are also required:* Access to audio (including microphone) and a web cam. Some aspects of the course will involve video conferencing software (*e.g.* Zoom).
* Reliable access to eClass and ability to stream videos from eClass.
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| Course Description |
| An introductory course in biology for students needing adequate preparation for SC/BIOL1000 and SC/BIOL1001. The course explores underlying theories and the unity and diversity of life. Topics include evolution, cell theory, introductory **biochemistry**, inheritance, biodiversity, and ecology. One term. Three credits. |

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| Prerequisites |
| None. NOTE: May not be taken by any student who has taken or is currently taking another university course in biology. Not eligible for Biology credit towards a Biology, Biochemistry or Environmental Biology program |

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| Course Instructors and Contact Information |
| Course Director: Dr. Mike GadsdenHabitat: Room My home – for now!Email: b1500lec@yorku.caPhone: Unavailable now.Office appointments by request. Please use email to book a time. I do not schedule strict office hours as they may not be accessible to all but we can certainly make time to Zoom meet or when we are back on campus, I can meet in my office.  |

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| Schedule |
| Two 90 minute lecture hours. When we are remote, one 45 minute period per week will usually be live.Mondays and Wednesdays at 2:30Lecture Hall – ACW 109 (Mondays); VH A (Wednesdays) when we are back on campusIt is essential that you keep up with the work and do not fall behind. I suggest you develop a personal schedule that permits you to complete all aspects of the course within the recommended time-lines and/or deadlines. * Refer to the Lecture eClass sites daily.
* This course runs on Toronto time (Eastern Time Zone). Accommodations for other time zones unfortunately are not possible.
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| Evaluation |
| Midterm 1: 20%  **Feb. 2nd 2:30 - 4 pm; May be online if we are still remote OR in class if we are back on campus**Midterm 2: 25% **March 16th** **2:30 - 4 pm; May be online if we are still remote OR in class if we are back on campus**Activities and Quizzes (in class during live sessions and weekly): 20%Final exam: 35%\*\* Tests include Multiple Choice and Short answer.Details regarding the midterm/exam format, project components and mini-assignments and activities will be provided in class.  |

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| Important Dates |
| Test Dates are listed under “Evaluation” above. Assignment specifics and dates will be discussed in class. The assignment information will be found on the course Moodle site under Quizzes/Edpuzzles**First Class: Jan. 10th 2022 (online LIVE Zoom)****Last day to Drop the course**: There are 2 dates – the first is March 18th and you will not receive a grade or note on your transcript. After that you have until the last day of classes (April 10th). This part is new “*You may withdraw from a course using the registration and enrolment system after the drop deadline until the last day of class for the term associated with the course. When you withdraw from a course, the course remains on your transcript without a grade and is notated as "W". The withdrawal will not affect your grade point average or count towards the credits required for your degree*.”**Reading days: Feb 21st to Feb. 25th**. No classesNOTE: for additional important dates such as holidays, refer to the “Important Dates” section of the Registrar’s Website at http://www.yorku.ca/yorkweb/cs.htm |

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| Resources |
| **Courses will be conducted in a remote format. You are required to have access to a computer and the internet to complete the course.** Several platforms will be used in this course (e.g., eClass, Zoom, etc.) through which students will interact with the course materials, the course director / TA, as well as with one another. Please review the syllabus to determine how the class meets (in whole or in part), and how office hours and presentations will be conducted.1. **Course eClass Site:** The main online platform for this course is eClass. You will be automatically granted access to our eClass page once you enrol in the course (there can be a slight delay between enrolling and being granted eClass access).

All mandatory course components will be accessible through or linked from eClass; assignments and term tests will be submitted through eClass. Your marks, and critical course announcements will also be made through eClass. eClass will be updated frequently, please check it often.1. **Textbook: Biology:** There will be no assigned textbook(**I will be providing links to free/or otherwise accessible resources** as described in Open Stax link on eClass and in *Material Lists*, below). If you prefer having one book to use, then you may want to purchase this textbook (available in hardcopy and e-text through the bookstore) or any first year Biology text.

*The Essentials, 3rd Edition, by Hoefnagels (McGraw-Hill publishers).* 1. **Material Lists:** **Required material** will consist of concept videos and readings. Videos and readings will be available on, or linked to from, eClass.

**There is no required textbook, and all required material will be open access or otherwise freely available to you.** 1. **Zoom:** Zoom will be used for virtual “live” sessions including any classes and office hours. Zoom may also be used for private meetings. You should be able to access Zoom sessions through eClass.

**Live/virtual sessions should be attended *for your benefit*.** Class sessions will be recorded while we are remote. Class sessions ***may be***recorded when we return to campus. During class time we will also have time to review material, ask and answer questions, and work through problems with your peers.1. **Learning Objectives (LOs): Each ppt slide serves as a new LO. Also, a list of topic LO’s can be found under each lecture on eClass.**

**Remote Proctoring Services:** Exams and other assessments may be conducted with the aid of an online proctoring service |

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| Learning Outcomes |
| These are general course Learning Outcomes. On eClass you will find detailed Learning Objectives which break down these broader outcomes into more detail. Use those Learning Objectives (on eClass) to guide your studying.Upon successful completion of this course, students should be able to:* Know the difference between a Hypothesis and a Theory as used in the Scientific Method
* Know the basic structure of an atom (protons and electrons)
* Know how bonds between atoms occur based on their chemistry (polarity mainly)
* Know the difference between Covalent, Polar Covalent, Ionic, and Non-polar interactions
* Understand how pH and temperature can affect chemical bonding.
* Discuss the process of evolution and describe how evolution is used to explain the unity and diversity of life.
* Describe the properties and processes of life and the differing scales at which life is studied.
* Discuss the process of science and biological inquiry.
* Describe the chemical nature of life and how biological macromolecules interact at a cellular level.
* Describe the major cellular processes of replication, metabolism and communication (with other cells and the environment), relating form and function in multiple cell types (animal, plant, prokaryote).
* Discuss the role of genetic information and the environment in shaping an organism’s phenotype.
* Relate genetic principles to population structure, speciation and evolution of organisms.
* Describe the evolution of biological diversity and identify major features and properties of prokaryotes, protists, fungi, invertebrates and vertebrates.
* Describe the biosphere and identify defining features of aquatic and terrestrial biomes.
* Discuss principles of population ecology, community structure and ecosystem structure, placing them in an evolutionary context and applying them to modern conservation and restoration ecology.
* Understand the COVID virus and methods of testing such as antigen and PCR tests.
* Understand what a vaccine is and how they are made.
* **Learn to think and apply knowledge in order to analyze scenarios and solve problems.**
* Work effectively, within a group and individually, to gather, review, analyse and present biological information.

*Detailed learning objectives will be posted to eClass.* |

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| Course Content |
| In this course, we’ll explore and apply a broad range of foundational biology concepts and you’ll gain a deeper understanding of the scientific process. **For students, one of the most challenging aspects of remote or online learning can be remaining engaged in, and keeping up with, material throughout the term.** You may want to check out the [Online Learning Resources from Learning Skills Services](https://lss.info.yorku.ca/online-learning/) for some tips.Our course has been designed to help you establish good studying habits, engage with myself and your peers, and practice and check your understanding of material before larger assessments like tests. NOTE! We do accept Evolution as a theory and if you don’t personally, that doesn’t allow you to ignore it for test questions etc!Further information is available on eClass (LOs, assignment outlines, etc.). |

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| Experiential Education and E-Learning |
| Students will be expected to search resources in Literature and on the internet to comment/discuss the latest biological trends. Guest may address the class to relate real life experience. |

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| Other Information |
| **Some information about BIOL1500 from the course director.**The main questions driving this course are:•What do you need to know about biology as ac educated citizen?🡪 Some notes about this course:• You’ll learn about key issues and concepts in biology by dealing with ***real world,***current issues/examples.• You will need to delve into additional reference sources. (We ***won’t be*** marching linearly through a textbook.• Class time should be focused on interesting/complicated/problematic topics, ratherthan material that is easy to learn (e.g. from reading the text).• ***To deal with complex issues, you will need to be able to apply and integrate******information, and use problem-solving skills*.**• I’ll happily share the resources I’ve got, but you’ll need to seek, read and understandall resources.• Please ask me for guidance – I’m here to help you learn. I’ll try to highlight what Ithink students might have trouble with anyhow, but you can (and should) direct meto concepts you find problematic so that we can explore them in class.🡪 If/when you encounter problematic concepts – you can:• talk to your fellow students (After class, in Moodle, in study groups)• seek and read additional reference sources• Ask questions of me in class**What will we do in class?**Specific examples or issues will be reviewed/discussed in class in the context of real-worldproblems, news stories, issues and/or recent research reports. Class time will provide anopportunity to discuss and explore aspects of topics that might be more difficult to learn on yourown. Thus, it will be most effective if you have read the appropriate portions of the textbookand other recommended references prior to class. Confusing or problematic aspects can bebrought up ahead of time or in class. (Mini-assignments/activities may be based on these topics,or others.) We may also have some guest experts in some classes.A few ***example*** topics are listed below with the concepts that will be used in understanding anddiscussing the particular item/issue. **We will look at additional topics, and even the example****topics are subject to change.*****Medical topics in the news – what are those crazy “germs” up to now?***- Microbiology in the news- COVID!***General Biology topics***- Cell structure/function- Evolution- Genetics- Genetic Engineering and applications- Immunology- Epidemiology- Biodiversity- Man made impacts on ecosystems and Biodiversity- Social impact***Cell Structure and Lifestyle***- Cell structure/function- Growth/environmental factors- Themes in biology-Humans and pathogenic bacteria (e.g. *S. aureus*)- Regulation of gene expression- How do Vaccines work? - Do all humans react the same to medications and pathogens?***Biosphere**** How do animals (like us) connect with other life forms and the non-living environment?
* What is a GMO – really?
* How do different body parts work and connect?
* How do plants convert sumlight into energy that we can use?
* How have different species (including Humans!) evolved to make the best use of their environments?
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| Course Policies |
| 1. If you miss a test or exam with a legitimate documented reason, you must bring in acceptable documentation PROMPTLY (**within 1 week**)! **Only the newest version of the "York Attending Physician's Statement Form**" (can be downloaded as part of the Petitions Package) OR ***a similarly detailed*** doctor’s note (i.e. not a form stating that the student visited a clinic) will be accepted for medical excuses. All documentation supporting your excuse for missing a test must be received by me **within 1 week** of the missed test. **YOU MUST ALSO CONTACT ME ON THE DAY OF THE TEST/EXAM NOTIFYING ME THAT YOU WILL NOT BE ATTENDING – JUST AS YOU WOULD AT A JOB.** Your final exam mark will be used for the missed test grade. If the final is missed, you must write a deferred exam (if granted) as scheduled by the department. Late assignments will be assessed a 10% penalty (of the total grade value) a day for a maximum of 5 days late (including weekends). After that it will not be accepted**. *If an extension*** has already been granted then late assignments **will not** be accepted after the extended due date.2. The tests and final exam will include written questions. If you believe that an answer on a test was marked incorrectly, you must submit your (written) rationale and paper for remarking within 1 week of the test being made available to you (if you completed your test in ink). ***Note: Remarking can result in the mark being raised, confirmed or lowered.***3. In order to be fair and consistent with regards to the entire class, individual grades are notnegotiable. **Contact me about marks ONLY if there is a clear error in your mark** (calculation, clerical, etc.) as soon as possible. It is highly unlikely that you will receive a response regarding any other mark-related queries.4. Your exam grade can replace one test mark if the exam grade is higher. However, if you miss a test, the exam can ONLY replace that missed grade.5. Students who do not write the final exam, but have completed all midterms, and project assignments by the scheduled dates, must contact me for permission to write a deferred exam (i.e. sign the Deferred Standing Agreement form). It is Senate Policy that "*Normal requests for deferred standing must be* ***communicated within one week following a missed examination****, or on the last day to submit course work whichever comes first*". Please check out the Registrar’s Office Deferred Standing FAQs:(http://www.registrar.yorku.ca/services/ds\_faq.htm) for more details. In essence, you will be treated like an adult and that means you will have the responsibility to act as one. Time management, civility, flexibility, and critical open minded thought are all required skills in life and will be promoted in this course.**Students who have missed one or more of the midterms (or other major components) will likely be required to petition to write a deferred exam. Students who miss both test and the scheduled exam CANNOT pass the course since their evaluation cannot be directly comparable to their peers with respect to a timely examination of the material.** |

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| University Policies |
| **Academic Honesty and Integrity** York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards. There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students’ research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - http://www.yorku.ca/academicintegrity/ **No Cheating Rule*****Important -* A note from the Faculty of Science Committee on Examinations and Academic Standards:** Numerous students in Faculty of Science courses have been charged with academic misconduct when materials they uploaded to third party repository sites (*e.g.* Course Hero, One Class, etc.) were taken and used by unknown students in later offerings of the course. The Faculty’s Committee on Examinations and Academic Standards (CEAS) found in these cases that the burden of proof in a charge of aiding and abetting had been met. *Accordingly, to avoid this risk, students are urged not to upload their work to these sites. Whenever a student submits work obtained through a third party site (e.g. Course Hero, One Class etc.), the submitting student will be charged with plagiarism and the uploading student will be charged with aiding and abetting.* Note also that exams, tests, and other assignments are the copyrighted works of the professor assigning them, whether copyright is overtly claimed or not (*i.e.* whether the © is used or not). Scanning these documents constitutes copying, which is a breach of Canadian Copyright law, and the breach is aggravated when scans are shared or uploaded to third party repository sites.***Penalties associated with charges of Academic Misconduct can include zero on the assignment, letter grade reduction, failure in the course, notation on the transcript, suspension.******Please Do Not Cheat, it is not worth it, and ultimately hurts your learning and the reputation of your University and your degree.*** **Access/Disability** York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University. Student's in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs. Additional information is available at the following websites: Counselling & Disability Services - http://cds.info.yorku.ca/ Counselling & Disability Services at Glendon - http://www.glendon.yorku.ca/counselling/personal.html York Accessibility Hub - http://accessibilityhub.info.yorku.ca/ **Ethics Review Process** York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants.* In particular, students proposing to undertake research involving human participants (e.g., interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an *Application for Ethical Approval of Research Involving Human Participants* at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately. **Religious Observance Accommodation** York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at http://www.registrar.yorku.ca/pdf/exam\_accommodation.pdf (PDF) **Student Conduct in Academic Situations** Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - http://secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/ |

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| **Technology Requirements** |
| **Technology Requirements:** As a result of the Covid-19 pandemic, part of this course will be delivered remotely (entirely online). It is expected that **in-person or on-campus activities will begin January 31st until further notice.** You **must have access to reliable high-speed internet connection (wi-fi) and a computer** in order to take this course. The following are also required:* Access to audio (including microphone) and a web cam. Some aspects of the course will involve video conferencing software (*e.g.* Zoom).

Reliable access to eClass and ability to stream videos from eClass. Some tests and the exam may be proctored thus a camera on your computer would be required for this technology.  |

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| **Copyright Protection of Course Materials and Netiquette** |
| All material associated with this course is the intellectual property of the instructor and/or protected under Canadian Copyright Law. All material associated with this course, including lecture recordings, slides, activities, quizzes, tests/exam and laboratories, are to be used for personal study purposes only. **Unauthorized distribution in any form can lead to a violation under Canadian Copyright Law and/or Academic Misconduct charges under York University Senate Policy**. Unauthorized distribution includes sharing and/or uploading of material anywhere and with anyone.Penalties under Academic Misconduct can include failure in the course, a transcript notation and/or suspension. **Netiquette**We want you to get the most out of this course, and that will involve regular electronic communication. We also want everyone to have a positive and supportive experience, so we ask for your help in making this course a positive and safe space for everyone:* Please use respectful and professional correspondence for all aspects of this course, including email, discussion forums, chat sessions, video sessions and any other online means of communication.
* Remember that tone can be misinterpreted through written means as we do not have physical cues to help guide us. Avoid using all capitals (which can represent yelling) and multiple exclamation marks (which can also represent yelling).
* Use proper sentences and grammar so your ideas are clearly conveyed.
* Consider this an opportunity to practise professional correspondence which you will use throughout your career.

Posts to discussion forums that are not on topic, not relevant to BIOL 1000, or that contain personal insults/ attacks/ intimidation/ profanity will be deleted. Please remember that as per the York University Code of Student Rights and Responsibilities, students have “The responsibility to consider and respect the perspectives and ideas of others, even when the student does not agree with their perspectives or ideas.“If you notice any inappropriate threads in the Discussion forums please email me. |