COURSE OUTLINE

1. **Course:** BIOL 205, The Organization and Diversity of Life - Fall 2020
   
   Lecture 01: MWF 09:00 - 09:50 - Online

   **Instructor**         **Email**         **Phone**         **Office**         **Hours**
   George Powell         lpowell@ucalgary.ca   403 220-7638       BI 379B           By appointment

   **Online Delivery Details:**

   Some aspects of this course are being offered in real-time via scheduled meeting times. For those aspects you are required to be online at the same time.

   Lectures and assessments will be delivered synchronously on D2L.

   Lectures will be recorded and posted on D2L.

   **Course Site:**

   D2L: BIOL 205 L01-(Fall 2020) - The Organization and Diversity of Life
   (https://d2l.ucalgary.ca/d2l/home/328253)

   **Note:** Students must use their U of C account for all course correspondence.

2. **Requisites:**

   See section 3.5.C in the Faculty of Science section of the online Calendar.

3. **Grading:**

   The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar.

   In determining the overall grade in the course the following weights will be used:

<table>
<thead>
<tr>
<th>Component(s)</th>
<th>Weighting %</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Online Quiz</td>
<td>20%</td>
<td>Sept. 23, 2020</td>
</tr>
<tr>
<td>Second Online Quiz</td>
<td>20%</td>
<td>Oct. 9, 2020</td>
</tr>
<tr>
<td>Third Online Quiz</td>
<td>20%</td>
<td>Oct. 28, 2020</td>
</tr>
<tr>
<td>Fourth Online Quiz</td>
<td>20%</td>
<td>Nov. 20, 2020</td>
</tr>
<tr>
<td>Final</td>
<td>20%</td>
<td>TBA</td>
</tr>
</tbody>
</table>

   Online quizzes are synchronous and will be completed online during regularly-scheduled class time.

   Online quizzes are designed to take 33 minutes but an additional 17 minutes are included for resolution of any potential technical issues.

   The Final exam will have the same format as the online quizzes, will be designed to take 33 minutes but an additional 27 minutes will be included for resolution of any potential technical issues, and will be held at the time and date scheduled by the Registrar.

   For any synchronous assessment, time will be adjusted for SAS students if needed and accommodation for students will be done on a case-by-case basis.

   Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

   The conversion between a percentage grade and letter grade is as follows.

<table>
<thead>
<tr>
<th>Minimum % Required</th>
<th>A+</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D+</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>95</td>
<td>90</td>
<td>85</td>
<td>80</td>
<td>75</td>
<td>70</td>
<td>65</td>
<td>60</td>
<td>55</td>
<td>50</td>
<td>45</td>
</tr>
</tbody>
</table>
This course has a registrar scheduled final exam.

4. **Missed Components Of Term Work:**

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

5. **Scheduled Out-of-Class Activities:**

There are no scheduled out of class activities for this course.

6. **Course Materials:**

Recommended Textbook(s):


Incomplete copies of the lecture slides will be posted on the course D2L page before the corresponding lectures.

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC [ELearning](https://www.elearning.ucalgary.ca) online website.

7. **Examination Policy:**

No aids are allowed on tests or examinations. Students are to complete each online assessment individually. The exams are closed book. You may not access your lecture notes or any other resources during exams. No other aids are allowed on tests or examinations, including accessing internet resources such as search engines (Google, etc.), other websites, shared documents (Google docs etc.) or chat servers (Discord, WhatsApp, etc.), etc., and you are specifically prohibited from working with or contacting any other individuals while you complete the exam. Violation of these rules is considered academic misconduct with penalties as described in the University Calendar section K.

Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

9. **Writing Across The Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.

Writing quality will be included in assessments of written assignments.
10. **Human & Living Organism Studies Statements:**

Students will not participate as subjects or researchers in human studies.

See also [Section E.5](#) of the University Calendar.

**STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS.** Students taking laboratory and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

Students are expected to be familiar with [Section SC.4.1](#) of the University Calendar.

11. **Reappraisal Of Grades:**

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. **Non-academic grounds are not relevant for grade reappraisals.** Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within ten business days of either being notified about the mark, or of the item’s return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar.

b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

12. **Other Important Information For Students:**

a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).

b. **SU Wellness Center:** For more information, see [www.ucalgary.ca/wellnesscentre](http://www.ucalgary.ca/wellnesscentre) or call [403-210-9355](tel:403-210-9355).

c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed at [https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf](https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf).

d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K.](#) Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. These are only examples.

e. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#).

Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in
writing, to the Associate Head, Undergraduate of the Department of Biological Sciences, Heather Addy by email addy@ucalgary.ca or phone 403 220-6979. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than 14 days prior to the date in question. See Section E.4 of the University Calendar.

f. Freedom of Information and Privacy: This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see Legal Services website.

g. Student Union Information: VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca, SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca, Student Ombudsman, Email: ombuds@ucalgary.ca.

h. Surveys: At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

i. Copyright of Course Materials: All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic misconduct, in addition to any other remedies available at law.

### Lecture Topics

<table>
<thead>
<tr>
<th>Lecture Topics</th>
<th>Text Chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Introduction - Biology as a Science</td>
<td>1</td>
</tr>
<tr>
<td>Cellular Structure - macromolecules</td>
<td>2, 3</td>
</tr>
<tr>
<td>Cellular Structure - organelles</td>
<td>4</td>
</tr>
<tr>
<td>Cellular Function</td>
<td>5</td>
</tr>
<tr>
<td>Cell Energetics</td>
<td>5</td>
</tr>
<tr>
<td>Cellular Reproduction</td>
<td>8</td>
</tr>
<tr>
<td>The Genetic Code</td>
<td>9</td>
</tr>
<tr>
<td>Inheritance &amp; Genetics</td>
<td>10</td>
</tr>
<tr>
<td>Biodiversity: A Survey of the Living World</td>
<td>No reading</td>
</tr>
<tr>
<td>Evolution I: Introduction to Evolutionary Biology</td>
<td>13</td>
</tr>
<tr>
<td>Evolution II: Mechanisms of Evolution</td>
<td>14</td>
</tr>
<tr>
<td>Evolution III: Speciation</td>
<td>15</td>
</tr>
<tr>
<td>Evolution IV: Phylogeny and the Tree of Life</td>
<td>15</td>
</tr>
<tr>
<td>Evolution V: Evolution of the Vertebrates</td>
<td>21</td>
</tr>
<tr>
<td>Populations and Life History</td>
<td>No reading</td>
</tr>
<tr>
<td>The Biosphere</td>
<td>No reading</td>
</tr>
</tbody>
</table>

**Course Outcomes:**

- Describe the scientific method and hypothesis-based science.
- Describe how different atoms join together with either covalent, polar covalent or ionic bonds.
- Analyze how these bonds give rise to molecules that are non-polar, polar or charged and how these attributes affect their solubility in water.
- Understand the properties of water and how they are important to life.
- Describe how smaller molecules with varying degrees of polarity are polymerized into macromolecules that have different structures inside the cell depending on their overall polar or nonpolar characteristics.
- Describe how macromolecules combine with each other to form organized internal cellular structures that are capable of extracting energy from other molecules in order to allow cells to grow and reproduce.
- Explain the key concept of Cell Theory.
- Describe the differences between mitosis and meiosis and explain why single-gene dominant/recessive
Mendelian inheritance does not apply to phenotypes that are characterized by more than one gene

- Explain the mechanism of evolution by natural selection and how it works within populations to produce evolutionary change.
- Describe how adaptations in morphology, behavior and other features of organisms enhance their reproductive success.
- Understand the nature of species, and how macroevolutionary processes produce new species from ancestral species.
- Understand the nature of phylogenies.
- Be familiar with the major divisions of the living world and the characteristics defining them
- Be familiar with the major groups of vertebrates and their evolution
- Understand basic population ecology and the fundamental divisions of the biosphere.

Department Approval