UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

Department of Biological Sciences
BI 186
403 220-5261
biosci@ucalgary.ca

COURSE OUTLINE

1. **Course:** BIOL 205, The Organization and Diversity of Life - Fall 2021

Coordinator(s)

Name	Email	Phone	Office	Hours
Dr. Nichole Flynn	nichole.flynn@ucalgary.ca			By Appointment

Section(s)

Lecture 01: MWF 09:00 - 09:50 - Online

Instructor	Email	Phone	Office	Hours
Dr John Post	jrpost@ucalgary.ca	220-6937	BI 581	TBA
Dr Marco Musiani	mmusiani@ucalgary.ca	403 819-2961	BI 352	TBA
Dr. Nichole Flynn	nichole.flynn@ucalgary.ca			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.

To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

This course has a registrar scheduled, synchronous final exam. The writing time is 1 hours + 50% buffer time.

We will organize the course as a series of "Current Issues" topics designed to teach biological principles through real world applications and matters of current relevance. Each Instructor will focus on different topics throughout their 1/3 of the course, covering a wide range of disciplines to explore biology from molecules to ecosystems.

We will use a combination of synchronous and asynchronous presentation of material with a carefully designed structure to ensure timely student participation. We will use a combination of focused lectures, web material, short videos, and readings to maximize student involvement in the learning processes. Throughout Dr. Post's and Dr. Musiani's section, each topic will be followed by a combination of quizzes (30 min) or short essays (take-home) to ensure student engagement and provide rapid performance feedback to students. Dr. Flynn's section will include one quiz (30 min), and a registrar-scheduled final (60 min).

Dr. Post (first 1/3 of course) : Lectures will be delivered asynchronously via D2L, with one synchronous review and question period per week (see schedule). All assessments will be in the form of a take-home mini essay which students will have 24 hrs to complete (8:00am start time). Exams will be accepted up to 24 hours late, for a deduction of 25%. Exams submitted more than 24 hrs late will receive a grade of zero.

Dr. Musiani and Dr. Flynn (last 2/3 of course) : Lectures and exams will be delivered synchronously via Zoom and D2L. Zoom sessions will be scheduled in advance and the links posted on D2L. All PowerPoint slides will be posted as a pdf prior to class. Recorded lectures will be posted on D2L after class, allowing all students access at their convenience.

Quizzes will take place via D2L, during scheduled class time. Exams will be made available at 9:00am. Students will have a 20 minute window to start the exam (9:00am-9:20am), and 45 minutes to complete it. All quizzes are designed to take 30 minutes to complete, affording each student an additional 15 minutes of exam time to account for any technical difficulties encountered. Any student who tries to begin the exam after 9:20am will be denied entry, and will receive a grade of zero. In the case of technical issues, please email your instructor ASAP, with proof of the issue at hand (e.g., a screen shot with a time stamp showing why you were unable to start your exam in the allotted time).

Similarly, a non-cumulative final exam will also take place via D2L. Students will have a 20 minute window to start the exam, and 90 min to complete it. The final exam is designed to take 60 min to complete, affording each student an additional 30 min of exam time to account for any technical difficulties encountered. Any student who tries to begin the exam after the 20 min start window will be denied entry, and will receive a grade of zero. In the case of technical issues, please email your instructor ASAP, with proof of the issue at hand (e.g., a screen shot with a time stamp showing why you were unable to start your exam in the allotted time).

The instructor will be available during all exams to answer questions through either Zoom (waiting room enabled), or by email.

Additional time will be granted to SAS students, and other accommodations to students will be done on a case-by-case basis.

Course Site:

D2L: BIOL 205 L01-(Fall 2021)-The Organization and Diversity of Life

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

Biol 205 F21 Tentative Lecture Schedule			
Date	**Topics Covered**	**Instructor**	**Readings**
Wed. Sept. 8	Synchronous - Intro to Biol 205 9:00am-9:50am	All	
Fri. Sept. 10	Asynchronous -Intro to conservation	Dr. Post	
Mon. Sept. 13	Asynchronous - Conservation	Dr. Post	
Wed. Sept. 15	Synchronous – Review and Questions 9:00am-9:50am	Dr. Post	
Fri. Sept. 17	**Take Home Assessment 1 (11%)** 8:00am start 24 hours to complete	Dr. Post	
Mon. Sept. 20	Asynchronous – Intro to harvesting	Dr. Post	
Wed Sept. 22	Asynchronous - Harvesting	Dr. Post	
Fri. Sept. 24	Synchronous – Review and Questions 9:00am-9:50am	Dr. Post	
Mon. Sept. 27	**Take Home Assessment 2 (11%)** 8:00am start 24 hours to complete	Dr. Post	
Wed Sept. 29	Asynchronous – Intro to epidemiology	Dr. Post	
Fri. Oct. 1	Synchronous – Review and Questions 9:00am-9:50am	Dr. Post	
Mon. Oct. 4	**Take Home Assessment 3 (11%)** 8:00am start 24 hours to complete	Dr. Post	
	Climate, ecosystems and biodiversity All synchronous	Dr. Musiani	See D2L for readings and extra learning material
Wed. Oct. 6	Ecosystems (1/3) – the roles played by plants, animals and humans	Dr. Musiani	On D2L
Fri. Oct. 8	Ecosystems (2/3)	Dr. Musiani	On D2L
Mon. Oct. 11	THANKSGIVING	NO CLASS	
Wed. Oct. 13	Ecosystems (3/3)	Dr. Musiani	On D2L
Fri. Oct. 15	**Assessment 4 (11%)** Multiple-choice and Short Answer Qs on Ecosystems	During class time. Online via D2L.	*-Designed to be completed in 30 min. Everyone gets 50% extra time to account for online technical difficulties (45 min total).*
Mon. Oct. 18	Climate Change (1/3) – impacts on single species and biological systems	Dr. Musiani	On D2L
Wed. Oct. 20	Climate Change (2/3)	Dr. Musiani	On D2L
Fri. Oct. 22	Climate Change (3/3)	Dr. Musiani	On D2L

Mon. Oct. 25	**Assessment 5 (11%)** Multiple-choice and Short Answer Qs on Climate Change	During class time. Online via D2L.	*Designed to be completed in 30 min. Everyone gets 50% extra time to account for online technical difficulties (45 min total).*
Wed. Oct 27	Biodiversity (1/3) – diversity of species and diversity within species	Dr. Musiani	On D2L
Fri. Oct. 29	Biodiversity (2/3)	Dr. Musiani	On D2L
Mon. Nov. 1	Biodiversity (3/3)	Dr. Musiani	On D2L
Wed. Nov. 3	**Assessment 6 (11%)** Multiple-choice and Short Answer Qs on the Biodiversity principles emphasized in Musiani's section	During class time. Online via D2L.	*Designed to be completed in 30 min. Everyone gets 50% extra time to account for online technical difficulties (45 min total).*
	COVID-19 – The cellular and molecular biology of viruses and vaccines All synchronous	Dr. Flynn	Campbell Biology, Third Canadian Edition ISBN-13: 9780135309414
Fri. Nov. 5	Intro to COVID-19 and the SARS-CoV-2 virus	Dr. Flynn	None.
Mon. Nov. 8	TERM BREAK	NO CLASS	
Wed. Nov. 10	TERM BREAK	NO CLASS	
Fri. Nov. 12	TERM BREAK	NO CLASS	
Mon. Nov. 15	Intro to cellular biology	Dr. Flynn	Pg. 2, 4-6, 11
Wed. Nov. 17	The chemical compounds of cells	Dr. Flynn	Pg. 30-31; 72-78, 80-85, 90-92
Fri. Nov. 19	Cellular structure	Dr. Flynn	Pg. 100-103, 107-121, 350, 351
Mon. Nov. 22	Cellular structure	Dr. Flynn	Pg. 100-103, 107-121, 350, 351
Wed. Nov. 24	**Assessment 7 (11%)**	During class time. Online via D2L.	Tests everything up to Nov. 19 *-Designed to be completed in 30 min. Everyone gets 50% extra time to account for online technical difficulties (45 min total).*
Fri. Nov 26	Gene expression: from gene to protein	Dr. Flynn	Pg. 334-345, 355, 357, 359-364, 367- 373
Mon. Nov. 29	Gene expression: from gene to protein	Dr. Flynn	Pg. 334-345, 355, 357, 359-364, 367- 373
Wed. Dec. 1	Viruses	Dr. Flynn	Pg. 419-423, 426-427, 430-430
Fri. Dec. 3	Animal Immune Systems	Dr. Flynn	Pg. 1008-1025
Mon. Dec. 6	Animal Immune Systems	Dr. Flynn	pg. 1008-1025
Wed. Dec. 8	Revisit SARS-CoV-2 and vaccines	Dr. Flynn	None.

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:

Component(s)	Weighting (%)	Date
Take-home assessment 1	11	Sept. 17
Take-home assessment 2	11	Sept. 27
Take-home assessment 3	11	Oct. 4
Synchronous Quiz 4	11	Oct. 15
Synchronous Quiz 5	11	Oct. 25
Synchronous Quiz 6	11	Nov. 3
Synchronous Quiz 7	11	Nov. 24
Synchronous Registrar-scheduled final	23	TBD

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.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	90 %	86 %	82 %	78%	74%	70 %	66 %	62%	58%	54 %	50 %

This course will have a final exam that will be scheduled by the Registrar. The Final Examination Schedule will be published by the Registrar's Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 1 hours.

The final exam will be administered using an on-line platform. Per sectionG.5 of the online Academic Calendar, timed final exams administered using an on-line platform, such as D2L, will be available on the platform. Due to the scheduling of the final exams, the additional time will be added to **the end** of the registrar scheduled **synchronous** exam to support students. This way, your exam schedule accurately reflects the **start time** of the exam for any **synchronous** exams. E.g. If a **synchronous** exam is designed for 2 hours and the final exam is scheduled from 9-11am in your student centre, the additional time will be added to the **end** time of the **synchronous** exam. This means that if the exam has a 1 hour buffer time, a synchronous exam would start at 9 am and finish at 12pm.

The University of Calgary offers a flexible grade option, Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade

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, one possible arrangement is that the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course. This option is at the discretion of the coordinator and may not be a viable option based on the design of this course.

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

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

6. **Course Materials:**

Recommended Textbook(s):

> Lisa A. Urry Michael L. Cain Steven A. Wasserman Peter V. Minorsky Jane B. Reece Jane B. Reece Fiona E. Rawle Sandra J. Walde Ch, *Campbell Biology, Third Canadian Edition*: Pearson Canada (July 6th 2021) - Copyright © 2021.

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 online website.

7. **Examination Policy:**

   Exams are open book. The use of class notes and the recommended textbook is acceptable. The use of any other resources is not allowed, including internet search engines. All exams must be completed independently.

   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.

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 Services:** For more information, see www.ucalgary.ca/wellnesscentre or call 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. The complete University of Calgary policy on sexual violence can be viewed at (https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Sexual-and-Gender-Based-Violence-Policy.pdf)

d. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional Code of Conduct and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

   Student Handbook on Academic Integrity
   Student Academic Misconduct Policy and Procedure
   Research Integrity Policy

   Additional information is available on the Student Success Centre Academic Integrity page

e. **Academic Accommodation Policy:**

   It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf

   Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf.

   Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, by filling out the Request for Academic Accommodation Form and sending it to Lisa Gieg by email lmgieg@ucalgary.ca preferably 10 business days before the due date of an assessment or scheduled absence.

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 or non-academic misconduct, in addition to any other remedies available at law.

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.

Electronically Approved - Aug 31 2021 11:16

Department Approval