



COURSE SYLLABUS

COURSE TITLE:	Biology 121 The Diversity of Life		
COURSE CODE:	22644	TERM:	2
COURSE CREDITS:	3	DELIVERY:	Lecture & Practicum (Lab)
CLASS SECTION:	96		
CLASS START DATE:	Lecture Jan. 5 th	LAB START DATE:	Jan. 19 th , 2021
CLASS LOCATION:	St. Peter's College	LAB LOCATION:	St. Peter's College
CLASS TIME:	Tues. 9:00 a.m.	LAB TIME:	Tues. 1:00 p.m.
WEBSITE:	www.usask.ca and www.bblearn.usask.ca		

Treaty and Land Acknowledgement

As we engage in Remote Teaching and Learning, we would like to acknowledge that the St. Peter's College and the Saskatoon campus of the University of Saskatchewan are on Treaty Six Territory and the Homeland of the Métis. We pay our respect to the First Nation and Métis ancestors of this place and reaffirm our relationship with one another. We would also like to recognize that some may be attending this course from other traditional Indigenous lands. We ask that you take a moment to make your own Land Acknowledgement to the peoples of those lands. In doing so, we are actively participating in reconciliation as we navigate our time in this course, learning and supporting each other.

Instructor Information

Contact Information

Kim Cross

kim.cross@usask.ca

Office Hours

One hour following lecture, one hour following lab. Please email questions if that time is not practical. Please email again, if the instructor does not respond within 24hrs. Due to limitations of email, online meetings can also be set up if more in-depth explanations are required.

Remote Learning Context

Due to the complex circumstances presented by the pandemic, the delivery of this course may take many forms and may change over time. Elements of remote learning may be required by some, or all, students for portions of the course. As participants in this class please act with empathy and care toward other students, the instructors and university staff. All participants wish for the best possible outcome in this class.

Course Description

Our world has at least 15 million species, all of which have adapted to particular environments and lifestyles and use energy to grow and reproduce. We examine these processes in representative organisms from all the major groups, and discuss factors influencing changes in biodiversity over time and space. Prerequisites: Biology 30 or BIOL 90 or BIOL 107 or BIOL 108. Note: Students with credit for BIOL 110 will not receive credit for BIOL 121.

Course Overview

This course is designed to introduce you to the vast and exciting field of biology, with a focus on biological diversity, evolution, adaptations of organisms to specific environments, and the evolutionary, ecological and anthropogenic factors influencing changes in biodiversity over time and space. However, learning requires work! So, every week Biology 121 will require 3 hours of lecture, 3 hours of lab and a minimum of 3 hours of study. Reading and partially completing the notes prior to lecture, and doing the same with the lab manual prior to lab will ensure greater understanding of the material. Attention to current events, especially those that have implications to the natural world, will assist you greatly in this class.

Learning Outcomes

By the completion of this course, students will be expected to:

- have an understanding of biological principles (concepts), and that evolution is the unifying principle in biology
- gain an appreciation for biology as an experimental science [hence, provide necessary background for advanced study of biology and other related disciplines], and realize that an understanding of biological principles requires knowledge of other fields of science (chemistry, physics, geology, geography, mathematics, biochemistry) and many disciplines within biology (e.g. evolution, ecology, genetics, physiology, structure and function, ethology, parasitology, molecular biology, etc.).
- obtain knowledge of the diversity and complexity of life, which includes how organisms are adapted to their environment and the variation (e.g. morphological, genetic, physiological, behavioural) that exists among individuals of the same species and between individuals of related species
- be able to think critically regarding scientific issues in our society and understand the importance of relationships between organisms and their environment, and how biodiversity is constantly changing over time

Information on literal descriptors for grading at the University of Saskatchewan can be found at: <https://students.usask.ca/academics/grading/grading-system.php#GradingSystem>

Please note: There are different literal descriptors for undergraduate and graduate students.

More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found at:

http://www.usask.ca/university_secretary/council/academiccourses.php

The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at:

<https://teaching.usask.ca/about/policies/learning-charter.php>

Required Resources

Readings/Textbooks

BIOLOGY: Exploring the Diversity of Life: 4th Can. Ed., by Russell, Nelson Pub. (either printed copy or e-text). Highly recommended. Textbook readings from the 4th Edition are available below. **Please note:** Older editions are still usable.

2020-2021 Lab Manual for Biology 121.3. University of Saskatchewan, Biology Department. Required. The lab manual should be read prior to each lab, to ensure all work is completed within the lab time.

BBC Planet Earth and Blue Planet video series. Highly recommended. Instructor has copies to loan, if you cannot find copies on video streaming services.

Textbooks and lab manuals are available from the University of Saskatchewan Bookstore: <https://bookstore.usask.ca/>. Reading the textbook prior to lecture and the lab manual prior to lab will ensure greater understanding of the material. General textbook readings from ***Biology – Exploring the Diversity of Life (4th Can. Ed.)***

Week 1	Purple Pages & Design an Experiment Chapter 21
Week 2	Appendix B & Chapter 18
Week 3	Appendix B & Chapter 19
Week 4	Chapter 16 & 21
Week 5	Chapter 17
Week 6	Chapter 18 & 28
Week 7	Chapter 31
Week 8	Purple Pages & Chapters 21 to 24
Week 9	Chapters 20, 24 to 27
Week 10	Chapters 29 to 32
Week 11	Chapters 29 to 32
Week 12	Chapter 28

Downloadable note packages, for Section 97 students. Required. The instructor for this section of Biology 121.3 will provide a full set of downloadable note packages on Canvas. These packages are structured in a reverse-lecture fashion. What does that mean? Students should be able to download the notes a week before the scheduled lecture and use resources to fill in the notes, prior to coming to class. Once in class students can spend more time listening or asking questions to clarify points and understanding. The lecture presentations are meant to highlight and synthesize essential concepts, and to provide opportunities for class discussion and interaction. This method of note taking, and class discussion, significantly increases student engagement in the material, thereby increasing knowledge and understanding of the material. Additionally, a more specific list of textbook readings can be found at the beginning of each note package.

Electronic Resources, Downloads & Supplementary Resources

Canvas is where students will be able to access the course's detailed Learning Objectives, recorded video lectures, lecture notes, lab materials, and any other resources.

When purchasing a copy of the textbook from the U of S Bookstore, the individual student also receives access to an online platform termed Mindtap. This platform provides access to a digital copy of the textbook, and to other resources like animations and self-tests. However, Mindtap platform will not be used for Bio121 Section 96.

There are several online resources to help support student learning in Bio121. The use of these resources can help increase student performance and success in this course. Warning: always use the course notes to determine the relevance of the information found outside the main resources provided.

Students are reminded of the importance of having the appropriate technology for remote learning. The list of recommendations can be found at <https://students.usask.ca/remote-learning/tech-requirements.php>

Evaluation

BBC Planet Earth Assignment	**Portion of Lecture Final
4 Lecture Quizzes	12%
Lecture Midterm	18%
Lecture Final	**30%
Lab Quizzes	15%
Lab Assignments	15%
Lab Exam	10%
Total	100%

Evaluation Components

BBC Planet Earth Assignment

Value: 0%

Date: Begins January 5th, 2021, runs all term.

Format: Streamed video or DVD

Length: ~50 minutes, each

Description: Download a note/question pack from Canvas and watch a specified BBC Planet Earth video each week. Make notes of important concepts in the note pack and cross reference with class notes, the textbook and the lab manual.

Lecture Quizzes

Value: 12% of final grade (3% per quiz)

Date: See Course Schedule at the end of this syllabus.

Format: 10 multiple choice questions, open book

Length: 20 minutes, each

Description: Each quiz will be delivered and submitted online through Canvas. The quiz will be taken individually during the first 20 minutes of a lab period.

Lecture Midterm

Value: 18% of final grade

Date: See Course Schedule at the end of this syllabus.

Format: 40 multiple choice questions, open book

Length: 50 minutes

Description: Questions from taken from Weeks 1 through 7. Delivered and submitted online through Canvas. The midterm will take the place of a lab period.

In the event that a student has a legitimate U of S timetabling conflict, contact the instructor right away in order to make arrangements for an alternate date to write a Deferred Midterm Exam. If a student is absent from the midterm exam due to a medical emergency or another exceptional circumstance, the student must advise the instructor within THREE WORKING DAYS of the missed exam providing explanatory documentation. This begins a discussion about qualification for a Deferred Midterm Exam, this does not guarantee a Deferred Midterm Exam will be awarded. If a student does not advise the instructor within three working days, or does not have an acceptable excuse, a grade of zero will be assigned for the Midterm Exam.

Lecture Final

Value: 30% of final grade

Date: See Course Schedule at the end of this syllabus.

Format: 80 multiple choice questions, open book

Length: 2 hours

Description: Comprehensive lecture exam, covering all material in the course. Delivered and submitted online through Canvas. The Final will be held during the April Final Exam period (date yet to be determined). **Approximately 10 questions will relate the BBC Planet Earth videos to the lecture/lab content.

Consult the Final Exam Schedule when it is released for the examination date and time. The Final Exam will be scheduled by Student Services to take place within the exam period of April 9 - 30, 2021.

Accommodations will not be made for students making travel arrangements during this time frame. If a student is absent from the Final Lecture & Lab Exam for a legitimate reason, within THREE WORKING DAYS of the missed exam, the student may apply for consideration of a Deferred Final Lecture Exam to the Dean's Office of the College in which the student is registered.

Lab Quizzes

Value: 15% of final grade

Date: See Course Schedule at the end of this syllabus.

Format: Short answer, spot test, flower project.

Length: Variable.

Description: These open-book quizzes will be based on the material from the previous lab exercises. The questions will generally require a short written answer. Spot tests involve images of specimens shown on screen and short questions about the specimen shown. Additional information about the lab quizzes can be found in your lab manual and will be given in the weeks prior to the quiz/spot test. Delivered via Canvas within the scheduled lab session time.

Lab Assignments

Value: 15% of final grade

Due Date: Every lab period.

Format: RO sheets, other worksheets, prelab reading tests.

Length: Variable.

Description: Completed RO sheets and worksheets will need to be submitted following a few of the labs. All student submissions (RO sheets & worksheets) must be uploaded in CANVAS by noon the day after your lab section (eg Monday 1:30pm lab – due Tuesday by noon). In addition, there will also be 2 or 3 small prelab quizzes that will be held at the start of a lab session on Canvas.

Lab Exam

Value: 10% of final grade

Due Date: See Course Schedule at the end of this syllabus.

Format: Short answer, spot test.

Length: 75 minutes.

Description: This open book exam is comprehensive, covering all 8 labs. Delivered and completed online through Canvas.

In the event that a student has a legitimate U of S timetabling conflict, contact the instructor right away in order to make arrangements for an alternate date to write a Deferred Lab Exam. If a student is absent from the lab exam due to a medical emergency or another exceptional circumstance, the student must advise the instructor within THREE WORKING DAYS of the missed exam providing explanatory documentation. This begins a discussion about qualification for a Deferred Lab Exam, this does not guarantee a Deferred Lab Exam will be awarded. If a student does not advise the instructor within three working days, or does not have an acceptable excuse, a grade of zero will be assigned for the Lab Exam.

Important Academic Dates (subject to change please see advisor)

Mon. Jan. 22 – Last day to withdraw from T2 (Winter) classes with 100% tuition credit.

Mon. Jan. 29 – Last day to withdraw from T2 (Winter) classes with 75% tuition credit.

Mon. Feb. 5 – Last day to withdraw from T2 (Winter) classes with 50% tuition credit.

Last day of classes – Last day to withdraw from T2 (Winter) classes.

Laboratories

Labs begin January 19th, 2021. PAWS registration will list a time and day of the week for each lab section and the general lab schedule is provided on the final page of this syllabus. The content for each lab will be made available on Canvas six days before the scheduled lab. Unless otherwise specified (ex. quizzes), all lab activities can be completed at any time prior to the scheduled lab time until midnight on the lab day. St. Peter's College staff and instructors will strive to deliver the best possible learning experience, as such there will be an attempt to deliver some component of the lab face-to-face. This delivery will have to meet with COVID-19 safety standards set out by the

University and the Health Authority. More information about specific face-to-face lab exercises will be given during the first lecture and in each lab module on Canvas.

The 2020-21 edition of the Lab Manual for Biology 121.3 is required for all labs. A device capable of capturing digital photographs (ex. smartphone camera, webcam, digital camera) will also be required. Students are expected to participate in and complete all lab activities and assignments.

Criteria That Must Be Met to Pass, including Attendance, Assignment Submissions, & Grading

Students are encouraged to review all University examination policies and procedures: <http://policies.usask.ca/policies/academic-affairs/academic-courses.php>.

All assignments and exams are to be completed during the assigned time (see Evaluation Components section above). Any incomplete quizzes, assignments and exams will be assigned a mark of zero. At the end of Term 2, all grades from all assignments and exams will be tallied. A total grade of 50% is required to pass this course. However, students not attending the Final Lecture Exam and the Lab Exam will be assigned an INF and a grade of 49% or lower (depending on work completed). In short, students must attend the Final Lecture Exam and the Lab Exam. University regulations concerning grading and examinations are at <https://students.usask.ca/academics/exams.php>

It is to the student's benefit to be on time and attend all lectures. It is essential students attend the section number in which they are enrolled, as content can vary from section to section.

Student Feedback

The instructor will return all lab quizzes & assignments to the student within 7 days of the assignment date. Midterm and Final Exams will be marked within two weeks and grades will be posted on Canvas. Students must make arrangements with the instructor to see Midterm and Final Exams.

Use of Video, Recording the Course, and Copyright

At times in this course students will be required to have video on during video conferencing sessions. It will be necessary for students to use of a webcam built into or connected to a computer. Video conference sessions in this course, including student participation, will be recorded and made available only to participants in the course section for viewing via Canvas after each session. This is done, in part, to ensure that students unable to join the session (due to, for example, issues with their internet connection) can view the session at a later time. This will also provide students the opportunity to review any material discussed.

Please remember that course recordings belong to the instructor, the University, and/or others (like a guest lecturer) depending on the circumstance of each session and are protected by copyright. Do not download, copy, or share recordings without the explicit permission of the instructor (see <http://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>). More information on class recordings can be found in the Academic Courses Policy

<https://policies.usask.ca/policies/academic-affairs/academic-courses.php#5ClassRecordings>. For more information about copyright, please visit <https://library.usask.ca/copyright/index.php> where there is information for students available at <https://library.usask.ca/copyright/students/rights.php>, or contact the University's Copyright Coordinator at <mailto:copyright.coordinator@usask.ca> or 306-966-8817.

Students Writing Exams with Access and Equity Services (AES)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES policy and procedures. For general information, check www.students.usask.ca/aes, or contact AES at 966-7273 or aes@usask.ca. Please see additional information on AES COVID-19 response: <https://students.usask.ca/documents/AES/aes-covid-19-response.pdf>. Students should also contact St. Peter's Student Services for more details.

Students registered with AES may request alternative arrangements examinations. Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide examinations for students who are being accommodated by AES, by the deadlines established by AES.

Integrity Defined (from the Office of the University Secretary)

Although the face of teaching and learning has changed due to COVID-19, the rules and principles governing academic integrity remain the same. If students ever have questions about what may or may not be permitted, ask the instructor. Students have found it especially important to clarify rules related to exams administered remotely and to follow these carefully and completely.

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (<https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php>) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (<https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php#IXXIAPPEALS>). For more information on what academic integrity means for students see the Academic Integrity section of the University Library Website at: <https://library.usask.ca/academic-integrity#AboutAcademicIntegrity>

Students are encouraged to complete the Academic Integrity Tutorial to understand the fundamental values of academic integrity and how to be a responsible scholar and member of the USask community - <https://library.usask.ca/academic-integrity.php#AcademicIntegrityTutorial>

Course Schedule

(Approximate number of 50 minute lectures in brackets)

WEEK	Lecture	Lab
1 (Jan.5)	**Asynchronous class time** BBC Planet Earth Assignment begins	NO LAB
2 (Jan. 12)	Intro (1); Intro to life, water & energy (1); Biology as a Science (1)	NO LAB
3 (Jan. 19)	Intro to Biodiversity & Species Concepts (3)	LAB 1 Introduction, Prokaryotes
4 (Jan. 26)	Classification, Systematics/Cladistics & Lab ROs (3)	LAB 2 Protists Lecture Quiz 1 (W1&2)
5 (Feb. 2)	Evolution – History of thought & evidence (3)	LAB 3 Fungi Lab Quiz 1 (Labs 1&2)
6 (Feb. 9)	Evolution – Microevolution & Hardy-Weinberg (3)	LAB 4 Plants I - Green algae, Mosses, Ferns & Club Mosses Lecture Quiz 2 (W3&4)
7 (Feb. 15-19)	Midterm Break	
8 (Feb. 23)	Evolution – Macroevolution & Extinctions (3)	LAB 5 Plants II – Conifers & Angiosperms Lab Quiz 2 (Labs 3&4)
9 (Mar. 2)	Abiotic and Biotic World (3)	Midterm Exam (Weeks 1-8)
10 (Mar. 9)	Changes through time – Geological time scale, origins of life to multicellular sexual organisms (3)	LAB 6 Animals I - Sponges, Cnidarians, Flatworms & Nematodes Lab Quiz 3 (Lab 5)
11 (Mar. 16)	Changes though time (3) – changes to multicellular life	LAB 7 Animals II – Annelids, Molluscs & Arthropods Lecture Quiz 3 (W8&9)
12 (Mar. 23)	Biotic Interactions – behaviors, growth, competition & exploitation (3)	LAB 8 Animals III - Echinoderms & Chordates Lab Quiz 4 (Labs 6-7)
13 (Mar. 30)	Biotic Interactions – mutualism, succession & island biogeography (3)	Review Lab Lecture Quiz 4 (W10&11)
14 (Apr. 6)	Humans & Biodiversity – exploitation, introduced species, pollution, conservation (3).	Lab Exam – Labs 1-8 **BBC Planet Earth Assignment, finishes**