UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	**BIOL 121.3 (The Diversity of Life)**		
COURSE CODE:	82344	TERM:	T1 2020/2021
COURSE CREDITS:	3.0	DELIVERY:	Lecture & Practicum (Lab)
CLASS SECTION:	01	START DATE:	September 3rd 2020
CLASS LOCATION:	None - Remote delivery	LAB LOCATION:	None - Remote delivery
CLASS TIME:	10.00 to 11.20 pm (T, Th)	LAB TIME:	1.30 to 4.20 pm (M, T, W, Th, or F) or 5.30 to 8.20 pm (T)
WEBSITE:	Canvas		

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

Prerequisite(s): 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.

Instructor, Course Coordinator & Lab Coordinator

There are 3 instructors for the lecture component of the course, 1 Lab Coordinator and TAs that will be assigned to small lab groups (~ 20 students). Please email your instructor or lab coordinator if you have any questions.

Contact Information:

Professor Neil Chilton
Instructor & Course Co-ordinator
e-mail: neil.chilton@usask.ca

Professor Christy Morrisey
Instructor
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Professor Philip McLoughlin
Instructor
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Joel Yurach
Lab Coordinator
e-mail: joel.yurach@usask.ca

Instructor Profiles:

Drs. Chilton, Morrissey and McLoughlin are regular faculty members/professors in the Department of Biology. They all teach and conduct research in biology. Their specialized areas of teaching and research are animal parasitology (Chilton), ecotoxicology (Morrissey) and population ecology (McLoughlin). Mr. Yurach is responsible for coordinating all aspects of the laboratories for BIOL 121. Your lab group will also be assigned a laboratory Teaching Assistant (TA) who will help you during the lab periods. TAs work under the supervision of Mr. Yurach and are senior undergraduate or graduate students at the University.

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.

Learning Outcomes

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

1. have an understanding of biological principles (concepts), and that evolution is the unifying principle in biology
2. gain an appreciation for biology as an experimental science [hence, provide necessary background for advanced study of biology and other related disciplines], an 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.).
3. 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
4. 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

Learning Charter

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

Class Schedule

Week/ Dates	Instructor **Lecture Modules** (Topics) ***Laboratory Activity***	Synchronous "Lecture" Activity	Quizzes/Other Types of Assessment
Week 1 Sept 3	Dr. Chilton: **What is Biology?** (Defining biology & the scientific method) *No lab scheduled this week*	none scheduled	
Week 2 Sept 8 Sept 10	Dr. Chilton: **What is Life?** (Characteristics of life & species adaptations) *No lab scheduled this week*	none scheduled	
Week 3 Sept 15 Sept 17	Dr. Chilton: **Classification of Organisms** (Species concepts & Biological nomenclature) *Lab Period: LAB 1 - Introduction & Prokaryotes*	Tuesday Sept 15 10.00 am	Lecture Quiz 1 Thursday Sept 15 10.00 am
Week 4 Sept 22 Sept 24	Dr. Chilton: **Evolution and Variation** (Lamarck & Darwin, Variation, microevolution & natural selection) *Lab Period: LAB 2 - Protists*	Tuesday Sept 22 10.00 am	
Week 5 Sept 29 Oct 1	Dr. Chilton: **Evolution and Variation** (Sexual selection & macroevolution) *Lab Period: LAB 3 - Fungi*	Tuesday Sept 29 10.00 am	Lecture Quiz 2 Thursday Oct 1 10.00 am
Week 6 Oct 6 Oct 8	Dr. Morrissey: **History of Biodiversity through Time** (Origin of life, increasing complexity through time) *Lab Period: LAB 4 - Green algae, mosses, ferns & club mosses*	Tuesday Oct 6 10.00 am	Quiz on Labs 1, 2 & 3 Thursday Oct 8 10.00 am
Week 7 Oct 13 Oct 15	Dr. Morrissey: **History of Biodiversity through Time** (Key events, extinctions and the rise and fall of the dinosaurs) *No lab scheduled this week*	Tuesday Oct 13 10:00 am	Spot test on Labs 3 & 4 Thursday Oct 25 10.00 am

Week 8 Oct 20 Oct 22	Dr. Morrissey: **Life is Everywhere** (Life in the extremes, ecozones, regional diversity, biodiversity hotspots) *Lab Period: LAB 5 - Conifers & angiosperms*	Tuesday Oct 20 10:00 am	Lecture Quiz 3 Thursday Oct 22 10.00 am
Week 9 Oct 27 Oct 29	Dr. McLoughlin: **Describing Modern Biodiversity and the Hierarchy of Life** (Taxonomic hierarchies, domain/kingdoms, communities & ecosystems) *Lab Period: LAB 6 - Sponges, Cnidarians, Flatworms & Nematodes* *LAB 7 - Annelids, Mollusks & Arthropods*	Tuesday Oct 27 10:00 am	
Week 10 Nov 3 Nov 5	Dr. McLoughlin: **Interactions between Organisms and Environment** (Species distributions, communities, interactions, predator-prey, co-evolution) *Lab Period: LAB 8 - Echinoderms & Chordates*	Tuesday Nov 3 10:00 am	Spot Test/Quiz on Labs 5,6,7 Thursday Nov 5 10.00 am
Week 11	**NO CLASSES - Fall Midterm Break**		
Week 12 Nov 17 Nov 19	Dr. McLoughlin: **Interactions between Organisms and Environment** (Island biogeography, disturbance and succession, food webs) *Lab Period: REVIEW LAB*	Tuesday Nov 17 10:00 am	Lecture Quiz 4 Thursday Nov 17 10.00 am
Week 13 Nov 25 Nov 26	Dr. McLoughlin: **Human Threats to Biodiversity** (Habitat loss, invasive species, overexploitation) *Laboratory Exam*	Tuesday Nov 25 10:00 am	Laboratory Exam Thursday Nov 26 10.00 am
Week 14 Dec 1 Dec 3	Dr. Morrissey: **Human Threats to Biodiversity** (Pollution, climate change, agriculture in the prairies) *No lab scheduled this week*	Tuesday Dec.1 10:00 am	Lecture Video Assignment Submit by midnight, Friday Dec 4

Last day to withdraw from course without academic penalty is:
Sunday November 15th 2020.

Lecture class information:

1. Lectures will be delivered asynchronously as modular topics using Panopto video recordings. Instructor PowerPoint slides and/or learning notes will generally be posted before the start of each scheduled class time so that students can view and study these on their own schedule. For each module, there will be suggested readings or other supplementary materials provided, and these will be posted in CANVAS.

2. Synchronous Activities by Instructors during Lecture Times (see dates & times listed in Class Schedule. We will have live in-class questions and answers, discussion or other activities, on Tuesdays of most weeks starting at 10.00 am using WebEx. A class email will be sent during week 2 to explain the procedures for participating in these sessions.

Laboratory class information:

1. Labs begin in the week of September 14th. Students are expected to attend and be on time for all scheduled labs, review labs and final lab exams.

2. **The current edition of the Biology 121.3 lab manual is required for all labs** (see next page on how to purchase this). You will also need some means of accessing Canvas (computer would be best, as it may be difficult doing the entire lab via a smartphone). Also, you need to be able to take photos or screenshots for some assignment submissions. Any questions regarding the lab should be directed by e-mail to Joel Yurach.

Top Hat Audience Response System

Prof. Morrissey will be using Top Hat (www.tophat.com), an online student response system, during their synchronous sessions planned during the lecture times (see top of page 5). You will be able to submit answers to questions asked by Prof. Morrissey using Apple or Android smartphones and tablets, laptops, or through text message. Top Hat has been licensed centrally by ICT at the University of Saskatchewan, so there is **no subscription cost** for students to use Top Hat at the U of S. You can register for a Top Hat account at the U of S by following the instructions on: https://support.tophat.com/s/article/University-of-Saskatchewan-Single-Sign-On-Account-Setup

The Course Join Code is 916347

Note: Statistics and results from Top Hat may be anonymously used for research purposes, for more information, please contact the course coordinator.

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (**support@tophat.com**), the in app support button, or by calling **1-888-663-5491**. More Top Hat help information is available from their support website at: https://success.tophat.com/s/contactsupport

Course Website & Supplementary Resources

Students are required to read the course syllabus.

Instructors will record lectures and make them available on the BIOL 121 course page of CANVAS. The rules regarding to copyright (page 10) apply to these recordings. Hence, recordings are only intended for the use of students registered in this class.

Supplementary materials will also be placed on the BIOL 121 course page of CANVAS.

Instructors may provide a copy of their lecture notes on CANVAS to you as a courtesy. You are not required to download or print these notes. While instructors will endeavour to have the lecture notes posted sometime in advance of the lectures; however, they will not guarantee this.

Recommended Technology for Remote Learning

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.

Required Resources

Lab Manual: Biology 121.3 Laboratory Manual (2020–2021 Edition).

Textbook: There is **no required textbook** for this course. However, if you are interested in a textbook, we recommend using the same textbook as used for BIOL 120 and BIOL 224:

Russell PJ, Hertz PE, McMillan B, Fenton MB, Maxwell D, Haffie T, Milson B, Nickle T, Ellis S. 2018. *Biology: Exploring the Diversity of Life*. 4th Canadian edition, Nelson Education. ISBN 978-0-17-671888-6 (Hard-copy); 978-0-17-682709-0 (PDF); ebook includes access to MindTap.

Items can be purchased online from the University of Saskatchewan Bookstore: https://bookstore.usask.ca/students.php#MyTextbooks

Grading and Assessment Scheme

Grading component	%
Lecture quizzes (4 x 5% each)	20
Lecture video assignment	10
Final lecture exam	30
Laboratory quizzes and spot tests	20
Laboratory RO sheets/worksheets/prelab tests	10
Laboratory exam	10
Total	100

Evaluation Components

Lecture Quizzes:

Value: 20% of final course grade (5% per quiz)
Date: The dates and times of these are shown in the Class Schedule.
Format: 10 multiple choice questions per quiz
Length: 15 minutes
Description: Based on lecture material

Lecture video assignment:

Value: 10% of final course grade
Date: Friday December 4 (before midnight) as shown in the Class Schedule.
Format: The video assignment will be conducted on the last learning module topic of "*Human threats to Biodiversity*". Students will be given a choice of 2 open-ended questions to design a short 3-minute video to address one of the questions.
Description: The video may take any creative delivery format – mock interview, news report, dramatization, presentation for an NGO or government body, etc. Emphasis will be on content, demonstrated understanding of the topic, and confidence in oral delivery mode rather than production quality (smartphone video and free editing software is fine). It is recommended that you develop a storyboard and script before recording your video and be sure to credit any image, text, video or sound sources as per copyright guidelines. A grading rubric will be provided. All student submissions must be uploaded in CANVAS.

Final Exam:

Value: 30% of final course grade
Date: Consult Final Exam Schedule
Length: 1.5 hours
Format: 60 multiple-choice questions (20 questions from each instructor).
Description: The exam is comprehensive in that it will cover all lecture material.

Laboratory Quizzes and Spot Tests:

Value: 20% of final course grade
Date: These will take place on Thursday's - see Class Schedule
Format: Quizzes (written); spot tests; flower project
Description: 5-20 minutes depending upon the type of test. The test will be based on the material from the previous two or three lab exercises. The questions will generally require a short written answer. Spot tests involve images of specimens shown in PowerPoint 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.

Laboratory RO sheets/worksheets/prelab tests:

Value: 10% of final course grade
Date: Throughout term - details will be provided in advance
Format: Occasional RO sheets and 1 or 2 worksheets to be submitted for marking, and small prelab tests
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.

Laboratory Exam:

Value: 10% of final course grade
Date: Thursday November 26th starting at 10.00 am
Length: 75 mins
Format: This will be a mixture of spot test and short written answers.
Description: The exam is comprehensive in that it will cover all laboratory classes.

University of Saskatchewan Grading System

Students in BIOL 121 are reminded that the University has established a grading system to be used in all of its courses. Information on literal descriptors for grading at the University of Saskatchewan (reproduced below) can be found at:
http://students.usask.ca/academics/grading/grading-system.php

For information regarding appeals of final grades or other academic matters, please visit the Student Conduct and Appeals section of the University Secretary's webpages:
https://secretariat.usask.ca/student-conduct-appeals/appeals-in-academic-matters.php

Scheduling of Exams

Final examinations and the laboratory exam will be open book and delivered remotely. They must be written on the date and time scheduled. Final examinations may be scheduled at any time during the examination period in December 2020; students should therefore avoid making prior travel, employment, or other commitments for this period.

Students are encouraged to review all examination policies and procedures:
http://students.usask.ca/academics/exams.php

Missed Exams and Quizzes, and Late Assignments

If a student encounters **a technical difficulty during a synchronous assessment** (e.g., lecture quiz, lab quiz or spot test, laboratory exam and the final exam) then they **must contact the instructor responsible immediately** (i.e. during the time of the synchronous assessment) **by email** to explain the technical issue, and to avoid being assigned a grade of zero for that evaluation task.

LECTURE QUIZZES - In the event that a student is absent from a **lecture quiz** through due to medical or any other university-approved reasons, they **must advise the instructor responsible** (= Prof. Chilton for quizzes 1 and 2, Prof. Morrisey for quiz 3, and Prof. McLoughlin for quiz 4) **by email within 24 hours of the missed quiz**, in order to avoid being assigned a grade of zero for that assignment.

VIDEO ASSIGNMENT - Late submission of the video assignment will incur a 10% penalty per day after the due date for a period of up to 3 days.

LABORATORY QUIZZES, SPOT TESTS, PRELAB TESTS & RO SHEETS/WORKSHEETS - In the event that a student is absent from the quizzes, spot tests and prelab tests due to medical or any other any other university-approved reasons, they must advise **Joel Yurach by email within 24 hours of the missed assignment**, in order to avoid being assigned a grade of zero for that assignment.

LABORATORY RO SHEETS/WORKSHEETS - Late submission of an assignment will incur a 10% penalty per day after the due date for a period of up to 3 days.

LABORATORY EXAM - If a student is absent from the **laboratory exam** through due to medical or any other valid reason, **they must advise Joel Yurach by email within 24 hours of the missed exam**. Documentation must be provided to explain the absence from the exam and to have an opportunity to write the exam at a later date.

FINAL EXAM - If a student is absent from the **final exam** due to a university-approved reason (such as medical or compassionate reasons, see https://policies.usask.ca/policies/academic-affairs/academic-courses.php#8StudentAssessmentIssuesandSpecialCircumstances), **they must apply to the Dean's Office of the College in which they are registered for an opportunity to write a Deferred Final Exam**, **within 3 working days of the missed exam**. Documentation must also be provided to explain the absence from the final exam. Deferred exams may utilize a different format than the regular exam, at the sole discretion of the instructors.

Criteria That Must Be Met to Pass

The Laboratory Exam and Lecture Final Exam are **required** elements, and therefore must be completed in order for a student to be eligible to pass this course.

Copyright

Course materials are provided to you based on your registration in a class, and anything created by your professors and instructors is their intellectual property, unless materials are designated as open education resources. This includes exams, PowerPoint/PDF slides and course notes. Additionally, other copyright-protected materials created by textbook publishers and authors may be provided to you based on license terms and educational exceptions in the Canadian Copyright Act (see http://laws-lois.justice.gc.ca/eng/acts/C-42/index.html).

Before you copy or distribute others' copyright-protected materials, please ensure that your use of the materials is covered under the University's Fair Dealing Copyright Guidelines available at https://library.usask.ca/copyright/general-information/fair-dealing-guidelines.php. For example, posting others' copyright-protected materials on the open web is not covered under the University's Fair Dealing Copyright Guidelines, and doing so requires permission from the copyright holder.

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.

Student Feedback

Students are encouraged to E-mail with the instructor to review their performance anytime during the course by appointment.

Integrity in a Remote Learning Context

Although the face of teaching and learning has changed due to covid-19, the rules and principles governing academic integrity remain the same. If you ever have questions about what may or may not be permitted, ask your 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 behaviour 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#IXXIIAPPEALS)

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

You 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

Important Note: *Additional information about student misconduct specific to BIOL 121 can be found in the laboratory manual. BIOL 121 students are required to read and understand the information about misconduct that is presented in the laboratory manual.*

Examinations 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 at any time. Those students who are registered with AES with mental health disabilities and who anticipate that they may have responses to certain course materials or topics, should discuss course content with their instructors prior to course add / drop dates. In order to access AES programs and supports, students must follow AES policy and procedures. For more information or advice, visit https://students.usask.ca/health/centres/access-equity-services.php, or contact AES at 306-966-7273 or aes@usask.ca.

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

For information on AES services and remote learning please visit https://updates.usask.ca/info/current/accessibility.php#AccessandEquityServices

Student Supports

Academic Help for Students

The University Library offers a range of learning and academic support to assist USask The University Library offers a range of learning and academic support to assist USask undergrad and graduate students. For information on specific services, please see the Learning page on the Library web site https://library.usask.ca/support/learning.php.

- Remote learning support information https://students.usask.ca/study/remote-learning.php
- Remote learning tutorial https://libguides.usask.ca/remote_learning
- Study skills materials for online learning https://libguides.usask.ca/studyskills
- A guide on netiquette, principles to guide respectful online learning interactions https://teaching.usask.ca/remote-teaching/netiquette.php

Teaching, Learning and Student Experience

Teaching, Learning and Student Experience (TLSE) provides developmental and support services and programs to students and the university community. For more information, see the students' web site http://students.usask.ca.

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (https://students.usask.ca/student-central.php).

Aboriginal Students' Centre

The Aboriginal Students' Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, brining Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (https://www.facebook.com/aboriginalstudentscentre/) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success and facilitates international education experiences at USask and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students in their transition to the University of Saskatchewan and to life in Canada. ISSAC offers advising and support on matters that affect international students and their families and on matters related to studying abroad as University of Saskatchewan students. Please visit students.usask.ca or updates.usask.ca for more information.

College Supports

Students in Arts & Science are encouraged to contact the Undergraduate Student Office and/or the Trish Monture Centre for Success with any questions on how to choose a major; understand program requirements; choose courses; develop strategies to improve grades; understand university policies and procedures; overcome personal barriers; initiate pre-career inquiries; and identify career planning resources. Contact information is available at: http://artsandscience.usask.ca/undergraduate/advising/

Treaty Acknowledgement

As we engage in Remote Teaching and Learning, I would like to acknowledge that the Saskatoon campus of the University of Saskatchewan is 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. I would also like to recognize that some may be attending this course from other traditional Indigenous lands. I 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.