UNIVERSITY OF SASKATCHEWAN

Department of Biology

COURSE SYLLABUS

COURSE TITLE: BIOL 224 - Animal Body Systems

COURSECODE:	82266	TERM:	Fall 2020
COURSE CREDITS:	3.0	DELIVERY:	Remote
CLASS SECTION:	01	START DATE:	September 4th
LECTURE LOCATION:	Not Applicable	LAB LOCATION:	Not Applicable
LECTURE TIME:	MWF 11:30 am-12:20 pm	LAB TIME:	8:30-11.20 am (T) 1:30-4.20 pm (T) 5.30-8.20 pm (T) 1.30-4.20 pm (W)
WEBSITE:	Via PAWS/Canvas		

Course Description:

We will study the problems all animals overcome in order to survive and reproduce, and the different body systems that must deal with both unique and common environmental challenges. **Prerequisite(s):** BIOL 120. Note that BIOL 121 is strongly recommended. Students with credit for BIOL 203 or BIOL 217 or HSC 208 or PHSI 208 or BMSC 224 will not receive credit for BIOL 224.

Treaty Acknowledgement:

As we engage in Remote Teaching and Learning, we 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. 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.

Remote Learning Context:

This year we are offering the BIOL 224 course using remote delivery tools. The entire course has been redesigned for this, including the laboratories. The University of Saskatchewan has created a number of resources for us to use as we teach and learn in the remote environment. We have linked to many of these resources in the BIOL 224 Canvas. Please take the time to peruse these links. You will continue to interact with other students, the professors and lab teaching personnel with various online course tools. If you have any questions about how to do something, please feel free to ask one of the instructors.

Learning Outcomes:

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

1. Describe the organization of the major body systems in vertebrate animals. (knowledge)
2. Explain how processes at the cellular, tissue and organ levels link to whole animal physiology. (understand)
3. Contrast homeostatic mechanisms and evolutionary adaptations in the vertebrate body that allow animals to respond to changes in their environment. (understand, analyze)
4. Compare vertebrate and invertebrate body systems in selected examples. (understand, analyze)
5. Quantify select physiological variables in a laboratory setting. (analyze)
6. Interpret experimental results and draw appropriate conclusions in the context of physiological concepts. (apply)
7. Construct scientific graphs and tables. (apply, create)
8. Write concise reports to evaluate results obtained during scientific experiments. (evaluate, create)
9. Work cooperatively in a small group setting to complete assigned tasks.
10. Promote academic integrity and professionalism.

Note: The learning outcomes for BIOL 224 encompass course-specific content, skills, and long-term attitudes or values. The descriptors shown in the parentheses after each learning objective refers to the placement of active verbs within Bloom's taxonomy of educational objectives. Specific skills transferable to other university level courses are developed in outcomes 5,7,6 and 8, whereas outcomes 9 and 10 address learner attitude/values. A copy of the Learning Charter can be found at: https://teaching.usask.ca/about/policies/learning-charter.php
More information on University policies on course delivery, examinations and assessment of student learning can be found at: http://policies.usask.ca/policies/academic-affairs/academiccourses.php

Instructors:

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Dr. Jorge Chedrese
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Dr. Jeffrey Lane
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Dr. Tracy Marchant
Email: tracy.marchant@usask.ca or Phone: 306-966-4420

Ms. Sheri Fisher (Lab Coordinator)
Email: sheri.fisher@usask.ca

Other modes of communication with instructors will be provided via Canvas, as needed.

Communicating with Your Instructors: Your instructors will be routinely available by email or phone. A meeting with the instructor can also be arranged via Canvas scheduler or Webex, if needed. However, ***all questions about course content*** must be asked via the Canvas Discussion board. Faculty and TAs will monitor the discussion board and provide answers as appropriate. We will try to respond to your email or phone call/text quickly, but please remember that normal work hours are Monday to Friday 8:30 a.m. to 4:30 pm. Communications received outside of work hours may not be answered immediately. We may also request that you ask a question via the Canvas Discussion board.

Instructor Profiles & Other Information: Drs. Niyogi, Chedrese, Lane and Marchant are faculty members in the Department of Biology. They hold advanced degrees (MSc, PhD) and teach and conduct research in the area of animal physiology, evolutionary biology and/or animal ecology. Drs. Niyogi, Chedrese and Lane will deliver the lectures. Dr. Marchant is involved in planning and setting up the remote BIOL 224 labs. Ms. Fisher holds an advanced degree in biology and is responsible for coordinating all aspects of the laboratories. Note that your lab group will also be assigned a laboratory teaching assistant who will assist you in the lab periods and discussion board and be responsible for grading your lab assignment and quizzes. The teaching assistants work under Ms. Fisher's supervision and are senior undergraduate or graduate students at the University.

Course Overview:

The course normally consists of 50 minutes of face-to-face lectures on the MWF schedule. For remote offering this year, lecture material will be prepared and posted to the course Canvas in advance of each scheduled lecture. Lecture material may include narrated videos with powerpoint slides, selected readings from the textbook or scientific literature, or other material that teaches physiological concepts and details. You are expected to study the posted lecture material and then interact in a weekly live (synchronous) meeting with the course professor and other students. This will allow the professor to place the posted lecture material in the context of course learning objectives and answer any questions about the lecture material. The synchronous meeting times are listed in the Class Lecture Schedule below.

Lectures will be complemented by lab exercises, which are listed in the Class Lab Schedule below. These lab exercises are used to provide a practical illustration of some of the major lecture concepts and are coordinated with lecture materials. Completion of the labs is a required course component. The lab component of the course consists of four Synchronous Exercises (includes a live meeting between a TA and student groups, with experiments conducted by groups remotely) and two Asynchronous Exercises (done by students groups working on their own, utilizing data provided to them). The Synchronous Exercises will utilize equipment purchased from iWorx called REACH-DL kits. These kits are a way to continue offering a hands-on learning experience for students during the remote fall term. The kits will be loaned to 20 students each week, and those students will work virtually with their assigned lab partners to collect and analyze data using *LabScribe* software. Groups will also create figures in *Microsoft Excel* with the data collected. In order to maximize student kit use, a single lab experiment will take place over a 2-3 week period, with group activities and assignments due dates staggered over this time frames. The kits are to be

picked up each Monday and returned on Thursday. More information about the provisions for the kit loans is contained in the BIOL 224 lab manual and on Canvas.

There are four lab sections of BIOL 224: L01 Tuesday 8:30 am, L02 Tuesday 1:30 pm, L03 Tuesday 5:30 pm, and L04 Wednesday 1:30 pm. Within each lab section, students will be arranged into three blocks of 20 students each. The blocks will be further divided into five groups of four students. All lab sections and blocks will have the same lab activities. However, the date of those activities will vary. Each student will be assigned two written assignments (Lab Reports) based on two of the four Synchronous Exercises. The lab schedule below indicates due dates for all written assignments for the four Synchronous Exercises; each student will complete two of these assignments. Groups and writing assignments will be organized randomly at the start of the term.

Course Lecture Schedule:

Week/Dates	***Instructor*** ***Major Lecture Topics***	***Synchronous Lecture Meeting/Exams (During Lecture period)***
Week 1 Sep 4	Dr. Niyogi Nature and purpose of class	*Meeting on Sept 4
Week 2 Sep 8-11	Dr. Lane Evolutionary aspects of animal kingdom	*Meeting on Sept 11
Week 3 Sep 14-18	Dr. Chedrese Communication & integration in the animal body – Homeostasis	*Meeting on Sept 18
Week 4 Sep 21-25	Dr. Chedrese Nervous systems	*Meeting on Sept 25
Week 5 Sep 28-Oct 2	Dr. Chedrese Sensory systems Skeletal & Muscle Physiology	*Meeting on Oct 2
Week 6 Oct 5-9	Dr. Chedrese Skeletal & Muscle Physiology	*Meeting on Oct 7 **Midterm Lecture Exam on Oct 9**
Week 7 Oct 13-16	Dr. Niyogi Osmoregulation	*Meeting on Oct 14
Week 8 Oct 19-23	Dr. Niyogi Osmoregulation Respiratory systems	*Meeting on Oct 21 **Lab Exam #1 on Oct 23**
Week 9 Oct 26-30	Dr. Niyogi Respiratory systems Circulatory systems	*Meeting on Oct 30

Week 10 Nov 2-6	Dr. Niyogi Circulatory systems	*Meeting on Nov 6
Week 11 Nov 9-13	Fall Mid-Term Break – Nothing scheduled	
Week 12 Nov 16-20	Dr. Lane Digestive systems Food & Energy Balance	*Meeting on Nov 20
Week 13 Nov 23-27	Dr. Lane Endocrine Systems Metabolism & Body Temp Regulation	*Meeting on Nov 27
Week 14 Nov 30-Dec 4	Dr. Lane Reproductive Physiology & Development	*Meeting on Dec 2 **Lab Exam #2 on Dec 4**
Week 15 Dec 7	Dr. Lane Reproductive Physiology & Development	*Meeting on Dec 7

*The synchronous meetings will occur during the lecture period (11.30 am to 12.20 pm) on Canvas Discussion board and will be run by the instructor who will be lecturing at the time. All students are encouraged to attend these live meetings as they will get the opportunity to interact with the instructor and ask questions. Please note that these meetings are intended to promote discussions on the lecture materials only and separate from synchronous lab meetings (see the Course Lab Schedule below for details).

FINAL LECTURE EXAM SCHEDULE: Dec 8 -23, 2020. Date of the BIOL 224.3 Final Lecture Exam will be announced by the Registrar's Office.

Course Lab Schedule:

The general lab schedule is given below. Consult the course Canvas to find your specific lab group and schedules for block meetings and assignment due dates. It is critical that you follow the lab schedule posted within Canvas for your lab day and the block to which you are assigned.

Week/Dates	***Activity***	***Assignments Due***
Week 1 Sept 3-4	Complete the Academic Integrity Tutorial as homework. A short Prelab Concept Quiz is also to be completed before the Lab Meeting for Block A	**All Blocks:** 4 pm Sept 4 ACADEMIC INTEGRITY TUTORIAL CERTIFICATE DUE Submit via Canvas
Week 2 Sept 8-11	**Block A:** Live Lab Meeting for Synchronous Exercise #1 Highlighting Homeostasis Discussion boards are open with a TA live (synchronous) for 1 hour	**Block A:** Prelab Concepts Quiz #1 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas

	each on Thursday, Friday and Monday at 3 pm*	
Week 3 Sept 14-18	**Blocks B & C:** Live Lab Meeting for Synchronous Exercise #1 Highlighting Homeostasis Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	**Blocks B & C:** Prelab Concepts Quiz #1 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **All Blocks:** 4 pm Sept 18 WRITING WORKSHOP CERTIFICATE DUE Submit via Canvas
Week 4 Sept 21-25	**Block A:** Live Lab Meeting for Synchronous Exercise #2: Nervous integration Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	**Block A:** Prelab Concepts Quiz #2 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **All Blocks:** 4 pm Sept 23 Lab Report #1 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.*
Week 5 Sept 28-Oct 2	**Block B:** Live Lab Meeting for Synchronous Exercise #2: Nervous integration Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	**Block B:** Prelab Concepts Quiz #2 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **Block A:** 4 pm Oct 2 Lab Report #2 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.*
Week 6 Oct 5-9	**Block C:** Live Lab Meeting for Synchronous Exercise #2: Nervous integration **All Blocks:** Asynchronous Exercise #1 Cockroach Action Potentials. Work at your own pace with group members and complete this exercise for Lab Exam 1.	**Block C:** Prelab Concepts Quiz #2 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **Block B:** 4 pm Oct 9 Lab Report #2 Due Submit via Canvas *Note:* this *will only be assigned to one-*

	Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	*half of the students in each Block.*
Week 7 Oct 13-6	**Block A:** Live Lab Meeting for Synchronous Exercise #3: Skeletal Muscle Physiology **All Blocks:** Asynchronous Exercise #1 Cockroach Action Potentials. Continue to work at your own pace with group members and complete this exercise for Lab Exam 1. Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	**Block A:** Prelab Concepts Quiz #3 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **Block C:** 4 pm Oct 16 Lab Report #2 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.* **All Blocks: 11:30 am Oct 16 Lab Exam 1 Review (during lecture period)**
Week 8 Oct 19-23	**Block B:** Live Lab Meeting for Synchronous Exercise #3: Skeletal Muscle Physiology **All Blocks:** Asynchronous Exercise #1 Cockroach Action Potentials. Continue to work at your own pace with group members and complete this exercise for Lab Exam 1. Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm* Discussion board questions will not be answered by TAs between 4 pm Thursday and 1 pm Friday, but will remain open for student contributions.	**Block B:** Prelab Concepts Quiz #3 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **Block A:** 4 pm Oct 19 Lab Report #3 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.* **All Blocks: 11:30 am Oct 23 Lab Exam #1 (during lecture period)**
Week 9 Oct 26-30	**Block C:** Live Lab Meeting for Synchronous Exercise #3: Skeletal Muscle Physiology	**Block C:** Prelab Concepts Quiz #3 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas

	All Blocks: Asynchronous Exercise #2 Osmosis in Red Blood Cells. Work at your own pace with group members and complete this exercise for Lab Exam 2. Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	**Block B:** 4 p.m. Oct 26 Lab Report #3 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.*
Week 10 Nov 2-6	**Block A**. Live Lab Meeting re: Synchronous Exercise #4: Cardiovascular Physiology **All Blocks:** Asynchronous Exercise #2 Osmosis in Red Blood Cells. Work at your own pace with group members and complete this exercise for Lab Exam 2. Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	**Block A:** Prelab Concepts Quiz #4 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **Block C:** 4 pm Nov 2 Lab Report #3 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.*
Week 11 Nov 9-13	*Fall Break Week – Nothing Scheduled*	
Week 12 Nov 16-20	**Block B**. Live Lab Meeting for Synchronous Exercise #4: Cardiovascular Physiology **All Blocks:** Asynchronous Exercise #2 Osmosis in Red Blood Cells. Work at your own pace with group members and complete this exercise for Lab Exam 2. Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	**Block B:** Prelab Concepts Quiz #3 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **Block A:** 4 pm Nov 16 Lab Report #4 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.*
Week 13 Nov 23-27	**Block C**. Live Lab Meeting for Synchronous Exercise #4: Cardiovascular Physiology **All Blocks:** Asynchronous Exercise #2	**Block C:** Prelab Concepts Quiz #3 Due 30 minutes before the start of your Live Lab Meeting. Submit via Canvas **Block B:** 4 pm Nov 23

	Osmosis in Red Blood Cells. Work at your own pace with group members and complete this exercise for Lab Exam 2. Discussion boards are open with a TA live (synchronous) for 1 hour each on Thursday, Friday and Monday at 3 pm*	Lab Report #4 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.*
Week 14 Nov 30-Dec 4	**All Blocks:** Live Lab Meeting for Lab Exam Review Discussion boards are open with a TA live (synchronous) for 1 hour each on Tues, Wed and Thurs at 3 p.m. The discussion board will not be monitored by TAs after 4 pm Dec 3.	**Block C:** 4:00 p.m. Nov 30 Lab Report #4 Due Submit via Canvas *Note:* this *will only be assigned to one-half of the students in each Block.* **All Blocks: 11:30 am Dec 4 Lab Exam #2 (during lecture period)**

*One of the BIOL 224 TAs will be live during these times to answer questions regarding the labs. Your attendance during the live discussion boards is not mandatory. However, contributing to the discussion boards does count towards your Course Contribution grade (see this Rubric on Canvas for more details). Discussion boards will not be answered by TAs over the weekend and after 4 pm on Mon until 8:30 am Thursday each week, but the board will remain open for student discussions. Other times when TAs are not available on the Discussion Board are shown in the lab schedule above.

Required Resources:

Textbooks

Biology - Exploring the Diversity of Life (3rd or 4th Canadian Editions) by Russell et al., Nelson Education Ltd., 2016 - 2019. Copies of these textbooks will be on reserve in the Natural Sciences Library.

Laboratory Manual for BIOL 224 (Fall 2020 edition must be purchased). An electronic version of the $30 manual must be purchased from the University of Saskatchewan Bookstore: www.usask.ca/consumer_services/bookstore/textbooks

You will be provided with a unique access code for the digital copy of your lab manual affixed to a sheet of paper. Each student registered in Biology 224 must purchase an access code for the lab manual. Students who fail to do so will be given a 0% on all pre-lab concept quizzes, discussion contributions and group and self-assessment in the lab. The access code is linked to your registration in BIOL 224 and lab manual purchase will be monitored. Do not lose your access code, as you will have to purchase another. We recommend taking a photo of your access code in case you lose it. You may print one copy of the manual for your own use. You are not permitted to distribute the manual to others in any form, electronic or otherwise. To do so is considered copyright infringement and students who do

so will be subject to disciplinary action in accordance with University of Saskatchewan academic conduct policies.

Electronic Resources:

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/remotelearning/tech-requirements.php

The laboratory portion of this course will require a working knowledge of computers and various computer programs, including MS Excel and Word and access to OneDrive for file storage and sharing with your lab group. Details regarding accessing the iWorx software that will be used to analyze data for the laboratory will be provided in the lab manual and on Canvas.

Downloads:

Lecture and laboratory downloads will be available as appropriate through the course Canvas. We will try to post the lecture Powerpoint slides, videos and other material at least one week in advance of each synchronous lecture meeting. This should give you sufficient time to review this material before each synchronous lecture meeting. Posting of lab material to Canvas will follow the schedule shown in the Course Lab Schedule.

Supplementary Resources:

From time to time, your instructors may make supplementary material available to you through the course Canvas. Other study materials may also be suggested which can be accessed from USask library online resources. More information about these is provided in the lab manual as appropriate.

Grading Scheme:

Evaluation Item	**Weighting (% of course grade)**
For the Laboratory Practicum:	
Prelab Readiness Concept Quizzes (4)	6%
Discussion Contributions	5%
Group and Self-Assessment	5%
Writing Assignment #1	6%
Writing Assignment #2	8%
Lab Exam #1	8%
Lab Exam #2 (comprehensive)	12%
Total for Lab	**50%**
Midterm Lecture Exam	15%
Final Lecture Exam (comprehensive)	35%

Evaluation of Student Performance:

Midterm Lecture Exam

Value: 15% of final course grade
Date: Oct 9 – during lecture period
Length: 50 minutes
Format: 40 multiple-choice questions
Description: Will include all lecture's material to end of Sensory systems lectures. Will be delivered through Canvas as a timed exam.

Final Exam

Value: 35% of final grade
Date: Consult the Final Exam Schedule
Length: 120 minutes
Format: A mix of multiple choice questions and those requiring a short written answer
Description: The exam is comprehensive in that it will cover all lecture material. However, material delivered since the midterm exam will be emphasized. Will be delivered through Canvas as a timed exam.

Writing Assignments (Lab Reports)

Value: 14% of final grade
Due Date: See Course Lab Schedule
Format: Each student must independently write a report for two of the four synchronous lab exercises. These reports must be submitted according to the Course Lab Schedule shown above.
Description: Comprehensive information about the format and style to be used for these writing assignments is contained in the lab manual and will be explained in detail during the first lab period. Generally, each report will consist of several pages of writing plus a number of Figures and/or Tables depicting the results obtained in the experiments conducted for that lab exercise. Students are required to know and understand what constitutes plagiarism and the University's Regulations on Academic Student Misconduct (see below).

Quizzes

Value: 6% of final grade
Date: See Course Lab Schedule
Format: Will consist of multiple choice, fill-in-the-blank, or true-false questions with answers to be submitted through Canvas.
Description: The quizzes are to be completed by each student working individually, and will require use of the lab manual and textbook. Other reference material is allowed as needed. Additional information about the pre-lab quizzes is found in your lab manual.

Contributions to Lab Group Activity and Discussions

Value: 10% of final grade
Date: See Course Lab Schedules for synchronous activities.
Format: In discussion boards and within their group.

Description: Students are expected to attend each synchronous lab meeting and to be well prepared for these meetings. You are also expected to actively contribute to the work being performed within your group. Rubrics that will be used to determine these contributions will be posted on Canvas. You are encouraged to review each of these rubrics to understand the exact details of how you will be assessed for your contributions to the Discussions. Situations where you answer a question posed by another student in the discussion board will be valued by these assessments. This assessment will count for 5% of your final grade. Finally, your contribution to the work of your group will be assessed by the other members in your group and your TA. Although, the lab reports will be written individually, it is fully expected that students will collaborate within their group to help each other with the analysis and presentation of data. This assessment will count for 5% of your final grade.

Laboratory Exams

Value: 20% of final grade
Date: Oct 23 and Dec 4
Format: A mixture of short written answers, calculations and multiple-choice questions. Will be delivered through Canvas as a timed exam.
Description: The lab exam will be 50 minutes in duration and test material from all previous lab exercises. Additional information about the lab exam is found in your lab manual and will be provided in the lab review session.

Completion of USask Academic Integrity Tutorial

Value: 0% of final grade but completion required as a lab prerequisite
Date: Due by Sept 4, 4 pm
Format: Online tutorial
Description: Our goal is to ensure a learning and teaching environment with a high standard of academic integrity for BIOL 224. The University of Saskatchewan has developed some outstanding web-based resources to help students understand and practice academic integrity. This includes an opportunity to complete three modules dealing with various aspects of academic integrity. You will be sent a certificate on completion of each of the modules. As a BIOL 224 student, you must complete the first module, and upload the certificate as a Canvas assignment. It is acceptable if you have received the certificate of completion for the first module as a requirement in other courses. We also recommend completing the other two modules. This assignment will be graded as complete/incomplete (ie it does not contribute to your final course grade).

Submitting Assignments/Feedback to Students:

Each student must independently write the lab reports. These will be submitted electronically via Canvas. The lab reports will be graded by the teaching assistants who will also watch for plagiarism. Reports will be graded and returned on a schedule such that students will have feedback about their work after they have submitted the first

report. Grades will be assigned based on the quality of the data presentation, grammar, spelling, scientific writing and other aspects of the report. Additional information about the format of the reports is contained in the lab manual; students must read this carefully. Marks from the midterm exam will be available 7 to 10 days after the exam, well in advance of the last day to withdraw deadline.

Late Assignments:

Lab reports submitted after the deadline will be penalized by a 20% reduction in the mark assigned to the report for each day that the report is late. Students who miss a deadline due to a protracted illness or extenuating personal circumstances are required to contact the lab coordinator (an email or phone call to Ms Fisher is adequate) on the day the assignment is due and discuss the reasons why the deadline is being missed. There are no exceptions to this policy; students who fail to proactively advise the lab coordinator that they will miss the deadline will be subject to the 20% per day penalty. Depending on the situation, additional documentation may be requested from the student. Deadline extensions will only be provided when the protracted illness or extenuating personal circumstance is verifiable. Ms Fisher may consult with Drs. Niyogi, Chedrese and/or Lane during this verification process.

Attendance Expectations:

Students are expected to attend all scheduled synchronous activities in the lecture and the lab. A student who does not attend a laboratory activity and does not have a valid excuse, will automatically receive a 20% reduction in the Contribution grade for synchronous contributions. Students who are experiencing technical difficulties with the internet connection during synchronous activities are required to contact their instructor by phone or email immediately and arrange to discuss their situation. A plan to address the connectivity issues will be part of that discussion.

Midterm and Final Examination Scheduling:

Midterm and final examinations must be written on the date scheduled. The final course examinations may be scheduled at any time during the examination period (Dec 8 to 23); students should therefore avoid making prior travel, employment, or other commitments for this period that will compromise their internet connectivity. If a student is unable to write the midterm exam through no fault of their own for medical, compassionate or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students who miss the final exam must contact the College of Arts & Science and apply for a deferred final exam. Deferred exams may utilize a different format than the regular exam, at the sole discretion of the course instructors.

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

If you experience internet connectivity issues during the midterm or final exam, you must phone one of the course instructors immediately to advise them of the situation.

Recording of the Course:

Synchronous lab activities may be recorded for the purpose of determining course contribution marks. These recordings will be retained for one year and then destroyed. Students are not allowed to record any aspect of this course, except with the permission

of the instructors or as provided for by arrangements with Access and Equity Services. Any recording made under these provisions are to only be used for the personal learning of the student who made the recording. For questions about recording and use of sessions in which you have participated, including any concerns related to your privacy, please contact your instructor. More information on class recordings can be found in the Academic Courses Policy available at: https://policies.usask.ca/policies/academic-affairs/academiccourses.Php#5ClassRecordings.

Copyright:

Course materials are provided to you based on your registration in the class, and anything created by your professors and instructors is their intellectual property, unless materials are designated as open education resources. Copyright-protected material includes exams, PowerPoint/PDF slides and other 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://lawslois.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 at: https://library.usask.ca/copyright/general-information/fair-dealingguidelines.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 ttps://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:

The Department of Biology or the instructors may survey students regarding the course. This is generally done through an assessment near the end of term.

University of Saskatchewan Grading System:

Students in BIOL 224 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/current/academics/grades/grading-system.php

Exceptional (90-100). A superior performance with consistent evidence of

- a comprehensive, incisive grasp of the subject matter;
- an ability to make insightful critical evaluation of the material given;
- an exceptional capacity for original, creative and/or logical thinking;
- an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.

Excellent (80-90) An excellent performance with strong evidence of

- a comprehensive grasp of the subject matter; an ability to make sound critical

evaluation of the material given;
- a very good capacity for original, creative and/or logical thinking;
- an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express (thoughts fluently.

Good (70-79) A good performance with evidence of a substantial knowledge of the subject matter;
- a good understanding of the relevant issues and a good familiarity with the relevant literature and (techniques; some capacity for original, creative and/or logical thinking;
- a good ability to organize, to analyze and to examine the subject material in a critical and (constructive manner.

Satisfactory (60-69) A generally satisfactory and intellectually adequate performance with evidence of
- an acceptable basic grasp of the subject material;
- a fair understanding of the relevant issues;
- a general familiarity with the relevant literature and techniques;
- an ability to develop solutions to moderately difficult problems related to the subject material;
- a moderate ability to examine the material in a critical and analytical manner.

Minimal Pass (50-59) A barely acceptable performance with evidence of
- a familiarity with the subject material;
- some evidence that analytical skills have been developed;
- some understanding of relevant issues; some familiarity with the relevant literature and techniques;
- attempts to solve moderately difficult problems related to the subject material and to examine the (material in a critical and analytical manner which are only partially successful.

Failure <50 An unacceptable performance

Integrity Defined (from the Office of the University Secretary):

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.

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.

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All students should read and be familiar with the Regulations on Academic Student Misconduct (available at: 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/academicmisconduct.php#IXXIIAPPEALS).

For more information on what academic integrity means for students see the Academic Integrity section at: https://library.usask.ca/academicintegrity#AboutAcademicIntegrity

You are required to complete the Academic Integrity Tutorial about 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

In BIOL 224, you will need to have a clear understanding about what constitutes plagiarism. If you have any questions about this, contact one of you instructors for advice. The Writing Center can also assist you with your writing and help you avoid plagiarism https://library.usask.ca/studentlearning/writing-help/

Note: *Additional information about student misconduct specific to BIOL 224 is found in the laboratory manual. BIOL 224 students are required to read and understand the information about misconduct that is presented in the laboratory manual.*

Access and Equity Services (AES) for Students:

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 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 is available: https://students.usask.ca/remote-learning/index.php
Class & study tips: https://students.usask.ca/remote-learning/class-and-study-tips.php
Remote learning tutorial: https://libguides.usask.ca/remote_learning
Study skills materials for online learning: https://libguides.usask.ca/studyskills
A guide on etiquette, principles to guide respectful online learning interactions: https://teaching.usask.ca/remote-teaching/netiquette.php
Writing Help: https://library.usask.ca/studentlearning/writing-help/
Library Biology Research Guide: https://libguides.usask.ca/c.php?g=16523&p=91352

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. For more information please check: https://students.usask.ca or https://updates.usask.ca

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. More information is available at: https://artsandscience.usask.ca/undergraduate/advising/