

COURSE SYLLABUS

COURSE TITLE:	BIOL 317 Fundamentals of Animal Physiology		
COURSE CODE:	86812	TERM:	Fall 2020
COURSE CREDITS:	3.0	DELIVERY:	Remote
CLASS SECTION:	01	START DATE:	4 Sep 2020
LECTURE LOCATION:	Not applicable	LAB LOCATION:	Not applicable
LECTURE TIME:	10:30 to 11:20 am MWF	LAB TIME:	1:30-5:20 pm on Th
WEBSITE:	via PAWS/Canvas		

Course Description

Considers physical, chemical and functional aspects of animal cells and tissues. Specifically examines membrane transport mechanisms, bioelectricity and fundamental principles of muscle and nervous system physiology, evolution and plasticity. Cellular mechanisms underlying learning and memory are introduced.

Prerequisite(s): BIOL 224 or BMSC 224 (or HSC 208); CHEM 112; CHEM 115 or CHEM 250 (CHEM 115 recommended).

Note: PHYS 115 and 117 are recommended. Students with credit for BIOL 217 will not receive credit for this course.

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 317 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 317 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:

1. demonstrate an in-depth understanding of physiological principles and explain processes associated with cell membrane function
2. apply the scientific method to quantify and interpret physiological data
3. write clear and concise lab reports in the scientific style
4. evaluate the scientific literature and integrate this into their writing and understanding of physiological processes
5. demonstrate their oral presentation skills
6. develop group working skills to discuss physiological findings with others in the course

Note: 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>

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/academic-courses.php>

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. These synchronous meetings will be held during each Friday lecture time slot. 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 Course Schedule below. Participation in the course discussions will be monitored and form part of your overall course grade assessment.

Lectures will be complemented by weekly labs exercises. The experiments will provide a practical illustration of some of the major physiological mechanisms and are coordinated with lecture material as shown in the schedules below. Completion of the labs is a required course component. For these exercises, you will work in small groups (of about 5 students; groups assigned randomly) to analyze sets of experimental data. The group work can be done asynchronously on a schedule determined by your group. However, each lab period will include a synchronous (live) meeting with a lab teaching assistant (TA) and other students. You are expected to have reviewed any material posted for each lab period and actively participate in the synchronous meeting with your TA. You will hone your scientific writing and oral communication skills through the preparation of labs reports and class presentations based on your experimental results. Each student will be responsible for completing five lab reports and giving one 10-minute oral presentation during a synchronous lab meeting. More information about the lab report format will be provided in the first lab period on September 10. The schedule for the oral presentations will be determined by a random draw at the beginning of the

term. Participation in the synchronous lab discussions will be monitored and form part of your overall course grade assessment. A course discussion board in Canvas will be used to provide you with another opportunity to ask questions about the experimental data being analyzed for each report. The discussion board will be monitored by the instructors (TAs and/or professors). The TAs will also be available to answer questions “live” in the discussion board for two hours each week. The discussion boards will be monitored by the instructors until 4 pm on Tuesday of the weeks when a lab report is due. “Last-minute” questions will not be answered by the instructors, but the discussion boards will be open so that other students may be able to answer these questions. Lab reports are to be completed individually, although it is expected that students will work in their groups to analyze the experimental data and prepare preliminary figures or table of their results. The deadlines for lab report submission will be strictly adhered to and a penalty will apply for late reports (see grade assessment section below).

Class Lecture Schedule

Week/ Dates	Instructor Major Lecture Topics**	Readings*	Synchronous Lecture Meeting/Activity
Week 1 Sep 3 to 4	<u>Dr. Marchant:</u> Nature and purpose of class; Water as the Biological Solvent (important features of biological solutions & molecular exchange in solution) <i>Sept 3 Lab: No lab activity is scheduled</i>	<u>Textbook:</u> Chapters 1 2 & 5	Meeting on Sept 4
Week 2 Sep 8 to 11	<u>Dr. Marchant</u> Water as the Biological Solvent (important features of biological solutions & molecular exchange in solution) <i>Sept 10 Lab: Introduction & Writing Workshop</i>	<u>Textbook:</u> Chapters 2 & 5	Meeting on Sept 11
Week 3 Sep 14 to 18	<u>Dr. Marchant:</u> Exchange of Materials Across Biomembranes (osmosis, ion channels, carrier mediated transport; bulk transport) <i>Sept 17 Lab: Molecular Exchange</i>	<u>Textbook:</u> Chapters 2, 5 & 29 (part)	Meeting on Sept 18
Week 4 Sep 21 to 25	<u>Dr. Marchant:</u> Exchange of Materials conclusions Transmembrane Potentials (Gibbs- Donnan equilibrium; diffusion potentials; ionic basis of membrane charge; steady state & equilibrium potentials) <i>Sept 24 Lab: Diffusion Potentials</i>	<u>Textbook:</u> Chapters 2, 5 & 29 (part)	Meeting on Sept 25

Week 5 Sep 28 to Oct 2	<p><u>Dr. Marchant:</u> Transmembrane Potentials</p> <p><u>Dr. Marchant:</u> Bioelectricity (passive vs active electrical properties; action potentials; Hodgkin-Huxley cycle; action potential conduction)</p> <p><i>Oct 1 Lab: Compound Action Potentials week 1</i></p>	<p><u>Textbook:</u> Chapter 12</p>	Meeting on Oct 2
Week 6 Oct 5 to 9	<p><u>Dr. Marchant:</u> Bioelectricity (conclusions)</p> <p><i>Oct 8 Lab Period: Compound Action Potential week 2</i></p>	<p><u>Textbook:</u> Chapter 12</p>	Meeting on Oct 9
Week 7 Oct 13 to 16	<p><u>Dr. Angrini:</u> Intercellular Communication (neurotransmitter release; synaptic & neuromuscular transmission; chemically-sensitive ion channels)</p> <p><i>Oct 16 Lab Period: Compound Action Potential week 3</i></p>	<p><u>Textbook:</u> Chapter 13</p>	Meeting on Oct 16
Week 8 Oct 19 to 23	<p><u>Dr. Angrini:</u> Intercellular Communication (continued)</p> <p>Muscle Physiology (muscle types; contractile units; sliding filament theory; excitation-contraction coupling smooth vs. striated muscle)</p> <p><i>Oct 22 Lab Period: Skeletal Muscle Physiology week 1</i></p>	<p><u>Textbook:</u> Chapter 20</p>	<p>On Oct 19: Midterm Examination (during lecture period to end of Bioelectricity)</p> <p>Meeting on Oct 23</p>
Week 9 Oct 26 to 30	<p><u>Dr. Angrini:</u> Muscle Physiology (continued)</p> <p><i>Oct 29 Lab Period: Skeletal Muscle Physiology week 2</i></p>	<p><u>Textbook:</u> Chapter 20</p>	Meeting on Oct 30
Week 10 Nov 2 to 6	<p><u>Dr. Angrini:</u> Signal Transduction Across Membranes (general mechanisms; mechanoreceptors; photoreceptors; visual and infrared spectra; phonoreceptors; middle ear receptors; lateral line receptors)</p> <p><i>Nov 5 Lab Period: Skeletal Muscle Physiology week 3</i></p>	<p><u>Textbook:</u> Chapter 2 & 14</p>	Meeting on Nov 6

Week 11 Nov 9-13	No Lectures or Labs Break Week		
Week 12 Nov 16 to 20	<u>Dr. Angrini:</u> Signal Transduction Across Membranes (continued). <i>Nov 19 Lab Period: Sensory Receptors</i>	<u>Textbook:</u> Chapter 14	Meeting on Nov 20
Week 13 Nov 23 to 27	<u>Dr. Angrini:</u> Nervous Integration & Regulation (basic concepts; animal models of memory & learning; evolution of the nervous system; vertebrate brain structure & function; autonomic nervous system)	<u>Textbook:</u> Chapters 13 & 15	Meeting on Nov 27
Week 14 Nov 30 to Dec 4	<u>Dr. Angrini:</u> Nervous Integration & Regulation (continued)	<u>Textbook:</u> Chapter 15	Meeting on Dec 4
Week 15 Dec 7	Course wrap-up with Dr Marchant & Angrini		Meeting on Dec 7
	Final Exam during regular exam period (Dec 8 to 23)		

* Additional readings may be assigned as the course proceeds. These will be listed in Canvas as appropriate. ** See below for weekly details about the labs.

Course Lab Schedule

Date	Activity	Reports/Presentations/Other Work Due
Sept 3:	No lab activity is scheduled	
Sept 10:	1:30 p.m. Synchronous Lab Meeting re Lab Orientation and Scientific Writing Workshop for 2 hours 3:30 p.m. Lab 1 videos & data will be available.	4:30 p.m. Sept 8 ACADEMIC INTEGRITY TUTORIAL CERTIFICATES DUE Submit via Canvas
Sept 17:	1:30 p.m. Synchronous Lab Meeting re Lab 1 <i>Molecular Exchange</i> experiments /data for 1 hour 3:30 p.m. Lab 2 videos & data will be available.	

Sept 21/22	Synchronous discussion board with TAs for 1 hour each on Mon and Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	
Sept 24:	1:30 p.m. Synchronous Lab Meeting re Lab 2 <i>Diffusion Potentials</i> experiments /data for 1 hour 3:30 p.m. Lab 3 videos & data will be available.	1:30 p.m. REPORT 1 MOLECULAR EXCHANGE DUE Submit via Canvas
Sept 28/29	Synchronous discussion board with TAs for 1 hour each on Mon and Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	
Oct 1:	1:30 p.m. First Synchronous Lab Meeting re Lab 3 <i>Compound Nerve Action Potential</i> experiments/data) for 1 hour	1:30 p.m. REPORT 2 DIFFUSION POTENTIALS DUE
Oct 5/6:	Synchronous discussion board with TAs for 1 hour each on Mon and Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	
Oct 8:	1:30 p.m. Second Synchronous Lab Meeting re Lab 3 <i>Compound Nerve Action Potential</i> experiments/data for 1 hour 3:30 Lab 4 videos & data will be available.	1:30 p.m. mini student presentations (concepts: compound vs single axon, local excitatory state, electrotonic current spread)
Oct 13	Synchronous discussion board with TAs for 1 hour on Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	
Oct 15:	1:30 p.m. Third Synchronous Lab Meeting re Lab 3 <i>Compound Nerve Action Potential</i> experiments/data for 1 hour	1:30 p.m. mini student presentations (example concepts: channel blockers, refractory periods, conduction velocity)
Oct 19/20:	Synchronous discussion board with TAs for 1 hour each on Mon and Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	Note: Midterm Exam scheduled during lecture period on October 19.
Oct 22:	1:30 p.m. First Synchronous Lab Meeting re Lab 4 <i>Skeletal Muscle Physiology</i> experiments/data for 1 hour	1:30 p.m. REPORT 3 ACTION POTENTIALS DUE

Oct 26/27:	Synchronous discussion board with TAs for 1 hour each on Mon and Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	
Oct 29:	1:30 p.m. Second Synchronous Lab Meeting re Lab 4 <i>Skeletal Muscle Physiology</i> experiments/data for 1 hour	1:30 p.m. mini student presentations (example concepts: recruitment, tetanus, length tension)
Nov 2/3:	Synchronous discussion board with TAs for 1 hour each on Mon and Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	
Nov 5:	1:30 p.m. Third Synchronous Lab Meeting re Lab 4 <i>Skeletal Muscle Physiology</i> experiments/data for 1 hour 3:30 Lab 5 videos & data will be available.	1:30 p.m. mini student presentations (example concepts: neuromuscular blockers, muscle action potentials, comparison of excitable tissues)
Nov 12:	No Lab Activities Scheduled	
Nov 16/17:	Synchronous discussion board with TAs for 1 hour each on Mon and Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	
Nov 19:	1:30 p.m Synchronous Lab Meeting re: Lab 5 <i>Sensory Receptors</i> experiments / data 1 hour	1:30 p.m. REPORT 4 SKELETAL MUSCLE PHYSIOLOGY DUE 1:30 p.m. Mini student presentations (example concepts: post-excitatory inhibition, Weber-Fechner relationship, receptor adaptation)
Nov 23/24:	Synchronous discussion board with TAs for 1 hour each on Mon and Tues at 3 p.m. Discussion board questions will not be answered by instructors after 4 p.m. on Tues. but board will remain open for student discussions.	
Nov 26:	No Synchronous Meetings Scheduled	1:30 p.m. REPORT 5 SENSORY RECEPTORS DUE

Instructors:

Contact Information:

Dr Tracy Marchant - email: tracy.marchant@usask.ca or phone 306-966-4420 (a mobile number for text and other communication methods for Dr Marchant will be listed in Canvas)

Dr Manar Angrini - email: manar.angrini@usask.ca or phone 306-966-4437

Ms Sheri Fisher - email: sheri.fisher@usask.ca
(other communication methods for Ms Fisher will be listed in Canvas)

Communicating With Your Instructors: Your instructors are routinely available by email or phone. A Webex meeting can also be scheduled 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 endeavor 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. Marchant and Angrini are faculty members/professors in the Department of Biology. They both hold advanced degrees (PhD) and teach and conduct research in the general area of animal physiology, with Angrini further specializing in neuroscience and Marchant specializing in animal endocrinology and ecophysiology. Ms Fisher holds an advanced degree (MSc) and is responsible for coordinating all aspects of the laboratories for BIOL 317. Note that your lab group will also be assigned a laboratory teaching assistant who will help you in the lab periods and discussion board and be responsible for grading your lab reports and presentation. The teaching assistants work under Ms Fisher's supervision and are senior graduate students the Department of Biology.

Required Resources

Textbooks

Hill, Wyse & Anderson. 2016. Animal Physiology 4 ed, Sinauer/Oxford.

Hardcopies may be purchased from the University of Saskatchewan Bookstore:

<https://bookstore.usask.ca/students.php#MyTextbooks>

Electronic copies are available for purchase through <https://redshelf.com/>

The Lab Manual for BIOL 317 will be available to download through the course Canvas.

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>

The laboratory portion of this course will require specific software, including Microsoft Office 365 (Excel, Word and Powerpoint) and access to OneDrive for file storage and sharing with your lab group. You can download these programs for free via the link above. Details regarding accessing the iWorx software that will be used to analyze data for the laboratory will be provided in the lab manual on Canvas.

Downloads

Lecture and laboratory downloads will be available as appropriate through the course Canvas. We will endeavour to have the lecture Powerpoint slides, videos and other material posted 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. A number of paper-based resources for the laboratory may be placed on reserve for you in the Natural Sciences Library; information about these will be provided in the lab manual as appropriate.

Grading Scheme

Midterm Exam	15
Final Exam	30
Lab Reports (five)	40
Oral Presentation (one)	5
Other Contributions to Course & Discussions (in lecture & lab)	10
Total	100%

Evaluation of Student Performance

Midterm Exam

Value: 15% of final course grade

Date: Oct 19 (to be written during the lecture time slot)

Length: 50 minutes

Format: a mix of multiple choice questions and those requiring a written answer.

Description: Will include all lecture material to the end of the Bioelectricity lectures. Will be delivered through Canvas as a timed exam.

Final Exam

Value: 30% of final grade

Date: Consult the Final Exam Schedule when it is released.

Length: 100 minutes

Format: a mix of multiple choice questions and those requiring a 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.

Laboratory Reports:**Value:** 40% of final grade**Due Date:** See Course Lab Schedule for exact dates**Format:** Each student must independently write a report for each of the five lab exercises. These reports must be submitted according to the Course Lab Schedule shown above. Reports submitted after the due date will be subject to a 20% penalty for each day that the report is overdue.**Description:** Comprehensive information about the format and style to be used for these reports 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). Reports 1 & 2 will be worth 7% of the final grade; Report 3 worth 8% Report 4 worth 10% and Report 5 worth 8%.**Oral Presentation:****Value:** 5% of final grade**Date:** See Course Lab Schedule for exact dates.**Format:** 10 minute Powerpoint presentation**Description:** Each student will be required to give one in-lab presentation via Webex explaining a specific physiological concept that underpins a lab exercise. Presentation topics will assigned randomly at the first lab period. See the Course Lab Schedule shown above for the dates of these presentations.**Contributions To Course and Discussions:****Value:** 10% of final grade**Date:** See Course Schedules for exact dates of synchronous activities.**Format:** In Webex meetings, discussion boards and within their group.**Description:** Students are expected to attend each synchronous lecture and 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 course. Three types of contributions will be assessed:

(1) Contributions to the course synchronous activities based on the number and quality of contributions from each student over the term. Synchronous meetings will be recorded by the instructors and reviewed for the purpose of determining the contributions from each student in these activities. This assessment will count for 3% of your final grade.

(2) Contributions to the discussion boards. 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 3% of your final grade.

(3) 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 4% of your final grade.

Completion of USask Academic Integrity Tutorial:**Value:** 0% of final grade but completion required as a lab exercise prerequisite**Date:** Due by September 8 at 4:30 pm**Format:** Online tutorial**Description:** We want to ensure a learning and teaching environment with a high standard of academic integrity for BIOL 317. Scientists and other professionals are held to these high

standards and it is appropriate that we ensure this in our courses. 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 317 student, you are required to complete all three of these modules and upload all three certificates as a Canvas Assignment. It is acceptable if you have received these certificates as a requirement in other courses. This assignment will be graded as complete/incomplete (ie it doesn't contribute to your final course grade) but it serves as a prerequisite for the Canvas module containing the BIOL 317 Lab Manual. The certificates must be uploaded and graded before you will be able to access the Lab Manual.

Submitting Assignments/Feedback to Students

Each student must independently write a report for each of the lab exercises. 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. The oral presentation will be evaluated by Ms Fisher, your TA and at least one of the professors. A rubric and weighting scheme for assessing the presentation will be posted on Canvas. Presenters will be provided with written feedback about their performance. 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 Dr Marchant and/or Angrini during this verification process. Similar procedures must be followed if you are going to miss giving your scheduled lab presentation.

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 absent from lecture synchronous activities will receive a 25% reduction when three lecture activities are missed, a 50% reduction when six lectures activities are missed, a 75% reduction when nine lecture activities are missed and a 100% reduction when 10 or more activities are missed. Students who are experiencing technical difficulties with the internet connection during synchronous activities are required to contact their instructor by phone or text 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

Course instructors may record the synchronous activities conducted in Webex meetings 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 <https://policies.usask.ca/policies/academic-affairs/academic-courses.php#5ClassRecordings>.

Required Video Use

At times in this course you will be required to have your video on during video conferencing sessions. It will be necessary for you to have use of a webcam built into or connected to your computer. For questions about use of video in your sessions, including those related to your privacy, contact your instructor.

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://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

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 317 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>

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 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 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#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 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 317, you will need to have a clear understanding about what constitutes plagiarism. If you have any questions about this, contact one of your 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/>

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 <https://students.usask.ca/remote-learning/index.php>

Class and 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 netiquette, 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?q=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, bringing 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:

<https://artsandscience.usask.ca/undergraduate/advising/>