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COURSE SYLLABUS

COURSE TITLE:	An Introduction to Ecology and Ecosystems		
COURSE CODE:	82262	TERM:	Fall 2023
COURSE CREDITS:	3	DELIVERY:	Lecture & Practicum (Lab)
CLASS SECTION:	01	START DATE:	September 6, 2023
CLASS LOCATION:	Physics 107 (IN PERSON)	LAB LOCATION:	Arts 140 (IN PERSON)
CLASS TIME:	MWF 9:30 – 10:20 am	LAB TIME:	L1 Mon. 1:30-5:20 pm L2 Tues. 1:30-5:20 pm L3 Wed. 1:30-5:20 pm
WEBSITE:	via Canvas		

Instructors

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Office Hours: Appointments for remote meetings can be set up with instructors by email. Responses to specific questions about course material are at the discretion of each instructor. Further information about individual policies may be provided in the lecture or laboratory by each instructor.

Course Description

An introduction to ecological principles and the functioning of aquatic and terrestrial ecosystems. Community structure and dynamics, ecosystem production, populations, energy flow and material recycling will be considered.

Other Details: This course is designed for undergraduate students that have an interest in broadening their studies in biology; however, we encourage students from a variety of departments to take this course because the principles of ecology cross several disciplines within the Colleges of Arts and Science, Agriculture, and Veterinary Medicine. Major topics include: an introduction to ecological principles and the functioning of aquatic and terrestrial ecosystems; individual-based ecology including behavior; population dynamics; community structure and dynamics; ecosystem production; energy flow and material recycling; and conservation biology.

Prerequisites: BIOL 121 or GEOG 120 or 6 credit units in GEOL. Students with credit for BIOL 253 or PLSC 213 will not receive credit for BIOL 228.

Learning Outcomes

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

- Develop an introductory understanding of ecology. This understanding will be in four major ecological sub-disciplines: population, community, ecosystem, and global ecology;
- Be able to describe how the scientific method and Indigenous knowledge systems can be applied in examples of ecological studies;
- Practice and apply numerical skills by compiling, summarizing and interpreting basic scientific data;
- Build critical thinking skills through the process of evaluating scientific information in Biol 228 laboratories and from the literature.
- Become familiar with the impacts of humans on ecological systems.
- Be able to describe mechanisms that support biological diversity at the individual, community, landscape, and global scales;
- Develop a sense of place by acquiring new knowledge about the ecology of populations, communities and ecosystems of Saskatchewan and Canada.

Information on literal descriptors for grading at the University of Saskatchewan can be found at the end of this document, and at:

<https://students.usask.ca/academics/grading/grading-system.php>

Please note: There are different literal descriptors for undergraduate and graduate students. More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found at:

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

The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at: <https://teaching.usask.ca/about/policies/learning-charter.php>

Schedule

The course lecture component consists of a series of IN-PERSON lectures and exams, including an in-person written midterm exam, and an in-person written final exam. The first two-thirds of the course focuses on individual-level, population ecology, and community ecology; the latter third of the course emphasizes ecosystem and global ecology. Instructor PowerPoint slides and/or learning notes will be posted before the start of each scheduled class time, as much as possible. **LECTURES ARE IN-PERSON AND WILL NOT BE RECORDED TO ENCOURAGE IN-CLASS PARTICIPATION**, with some possible allowances for recording at the discretion of your instructor. There will be suggested readings or other supplementary materials provided in advance; these will be posted in Canvas. Questions concerning lecture content may be posed through Canvas or by email.

The laboratory component of the class includes a series of exercises to compliment the lecture material. Collection of ecological data, statistical analysis of ecological data, population growth models, diversity measures, communities, energy flow, and biomass distributions will all be examined. **NOTE THAT DUE TO THE NATURE OF ECOLOGICAL WORK, SOME EXPERIENTIAL LEARNING WILL BE CONDUCTED OUTDOORS, INCLUDING FIELD TRIPS DURING LAB HOURS AND A COLLEGE-APPROVED FIELD TRIP ON SATURDAY, SEPTEMBER 16.**

Lecture Schedule (2023)

Days	Module Topics	Textbook Readings*
Sept. 6, 8–11	Syllabus Overview; Overview and Scope of Ecology as a Science; Indigenous Ecological Knowledge Systems	Ch. 1 (all)
Sept. 13–18	Individual-level Ecology, Life history, Behavioural Ecology, Habitat Selection	Ch. 8 (all)
Sept. 20–25	Population-level Ecology, Distribution and Properties of Populations, Introduction to Population Growth	Ch. 9 (pp. 182–191) Ch. 10 (all)
Sept. 27; Oct 2–4	Population Growth, cont. and Intraspecific Competition; Density-Dependence; Metapopulations (No Class Sept 29: National Day for Truth and Reconciliation)	Ch. 11 (pp. 221–229; pp. 235–236) Ch. 12 (pp. 239–241; 246–250) Ch. 17 (pp. 395–396)
Oct 6, 11	Interspecific Interactions; Interspecific Competition (No Class Oct 9: Thanksgiving Day)	Ch. 13 (pp. 260–276)
Oct. 13–18	Predation and Apparent Competition	Ch. 14 (pp. 280, 284–285, 286–288, 292–

		295, 298-304); Ch. 16 (pp. 339–348)
Oct 20–23	Parasitism and Mutualism	Ch. 15 (pp. 308-315; 316);
Oct 25	BIOL 228 Mid-Term Exam (Oct 25)	
Oct 27–30	From Population Ecology to Community Ecology and Ecosystem Functioning; Food Webs and Revisiting Trophic Cascades	
Nov 1–3	Landscape Disturbance and Ecological Succession	Ch. 17
Nov 6–10	(No Classes: Reading Week)	
Nov 13	Landscape Ecology, Island Biogeography	Ch. 18 (pp. 392–396)
Nov 15–20	Introduction to Ecosystem Ecology, Ecosystem Energetics; Biogeochemical Cycles	Ch. 20, 22
Nov 22– Nov 27	Ecological Biogeography; Terrestrial, Aquatic, Wetland, and Coastal Ecosystems	Ch. 23, 24, 25
Nov 29; Dec 1	Humans and Our Role in the Environment; Global Change Biology	Ch. 28
Dec 4–8	Contemporary Themes in Conservation Biology; Reconciliation Ecology	
TBA	Final Exam (TBA)	

*Readings will be supplemented on occasion with short articles or excerpts.

Laboratory Schedule (2023)

Week/Day	Lab/Location	Assignment Type	Date Available	Date Due	Grade Value (approx.)
Sept 11	North Saskatchewan Riverbank Field Trip (meet first Rm 140 Arts)	1) On-line post-lab quiz (X/5) Open book, two attempts, no time limit	Wed., Sept 20	Sat., Sept 30	0.6%
Sept 16 <u>SATURDAY</u> 8:30 to 4:30	Beaver Creek (Main doors CSRB)	1) On-line post-lab quiz (X/5) Open book, one attempts, no time limit 2) Attendance (X/15)	Wed., Sept 20 Sat., Sept 16	Sat., Sept 30 Sat., Sept 16	0.6% 1.7%
Sept 18	Kernen Prairie Field Trip (meet first Rm 140 Arts)	1) On-line post-lab quiz (X/5) Open book, two attempts, no time limit 2) Data collection (X/15)	Wed., Sept 27 In lab	Sat., Oct. 14 In lab	0.6% 1.7%
Sept 25	Pike Lake Field Trip (Rm 140 Arts)	1) On-line post-lab quiz (X/5) Open book, one attempt, no time limit	Wed., Sept 27	Sat., Oct 14	0.6%

Oct 2	Population Growth	1) On-line post-lab quiz (X/5) Open book, one attempt, no time limit 2) Population Growth Sample Problem (X/25) 3) Population Growth Graph	Wed., Oct 18 In lab In lab	Sat., Oct 28 In lab In lab	0.6% 2.9% 0.6%
Oct 9	No Lab	No Lab			
Oct 16	Life Tables (Rm 140 Arts)	1) On-line post-lab quiz (X/5) Open book, one attempt, no time limit 2) Life Table Sample Problem (X/15)	Wed., Oct 18 In lab	Sat., Oct 28 In lab	0.6% 1.7%
Oct 23	Sampling Methods (Rm 140 Arts)	1) On-line post-lab quiz (X/5) Open book, one attempt, no time limit 2) In-lab exercise (X/25) 3) QUIZ 1 On Field Trips, Labs 1,2,3 & Beaver Creek	Wed., Nov 1 In lab In lab	Sun., Nov 12 In lab In lab	0.6% 2.9% 5%
Oct 30	Chi-Square Analysis (Rm 140 Arts)	1) On-line post-lab quiz (X/5) Open book, one attempt, no time limit 2) In lab exercise (X/25)	Wed., Nov 1 In lab	Sun., Nov 12 In lab	0.6% 2.9%
Nov 6	No Lab	No Lab Reading Week			
Nov 13	Terrestrial Energy Flow (Rm 140 Arts)	1) On-line post-lab quiz (X/5) Open book, one attempt, no time limit 2) In lab exercise (X/20) 3) QUIZ 2 On Population Growth/ Life tables/Sampling labs (labs 4,5, 6)	Wed., Nov 22 In lab In lab	Sun., Nov 30 In lab In lab	0.6% 2.3% 5%
Nov 20	Aquatic Energy Flow (Rm 140 Arts)	1) On-line pre-lab quiz (X/5) Open book, one attempt, no time limit 2) In lab exercise (X/20)	Wed., Nov 22 Wed., Nov 17	Mon., Nov 30 Wed., Nov 17	0.6% 2.3%
Nov 27	Review				
Dec 4	QUIZ 3	1) QUIZ 3 On X^2 and Energy Flow labs (labs 7, 8 & 9)	In lab	In lab	5%

Course Resources

Students are required to read the course syllabus.

Recommended Textbook

Smith M. S., R. L. Smith, and I. Waters. 2014. Elements of Ecology. 1st Canadian Edition. Pearson. Upper Saddle River, New Jersey*

The textbook is available at the U of S Bookstore (note: digital edition only; hard copy out of print but may be available from used booksellers):

[https://shop.usask.ca/CourseSearch/?course\[\]=UOFS,202309,BIOL,BIOL228,01&](https://shop.usask.ca/CourseSearch/?course[]=UOFS,202309,BIOL,BIOL228,01&)

Lab Manual

The lab manual will be available for download through the purchase of an access code from the bookstore. The lab manual will be available in the first full week of September. Because of major changes to the lab to accommodate past (mixed) delivery strategies, used (old) lab manuals will not work. Each student must purchase the electronic version (2023).

Course Website

Instructors WILL NOT TYPICALLY record lectures and make them available on the Biol 228 course page of Canvas, except under some circumstances. Rules regarding copyright apply to these recordings, if posted: recordings are only intended for the use of students registered in this class.

Instructors may provide a copy of their lecture notes/slides on Canvas to you as a courtesy. You are not required to download or print these slides/notes. While instructors will endeavour to have the notes posted sometime in advance of the lectures this is not guaranteed.

Recommended Technology for Remote Learning

Students are reminded of the importance of having the appropriate technology for in person but also remote learning, should circumstances require this. The list of recommendations can be found at <https://students.usask.ca/remote-learning/tech-requirements.php>. Both the lecture component and laboratory portion of this course will require a working knowledge of computers and various computer programs, the Canvas portal for remote delivery of classes, and, for the lab, basic software including MS Excel and Word. Computers will be used extensively to collect and analyze data and prepare reports in the laboratory. You will need to access your University computer account during the laboratory; make sure you know your university NSID and password and how to log on to your account. Further details are in the lab manual.

Supplementary Resources

From time to time, your instructors may make supplementary material available to you. Supplementary materials will also be placed on the Biol 228 course page of Canvas. This material will not replace the lecture or lab experience and you are encouraged to attend all lectures and take your own notes. A number of paper-based resources for the laboratory may be placed on reserve for you in the Natural Sciences Library; information about these is provided in the lab manual as appropriate.

Grading Scheme

Mid-term exam	20%
Final exam	40%
Laboratory component	40%
Total	100%

Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled. Final examinations may be scheduled at any time during the examination period which extends from December 9 to 23; students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided **WITHIN THREE WORKING DAYS** and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures at <http://students.usask.ca/academics/exams.php> **Please note, final exams are rescheduled ONLY with a fee and by application to your College, following University-approved procedures.**

Notes on Evaluation Components (Lecture)

Students are encouraged to review all examination policies and procedures:

<http://students.usask.ca/academics/exams.php>

Midterm Exam

Value: 20% of final grade
Date: October 25th
Length: 50 Minutes
Type: Multiple choice exam, in-person written. **Scientific calculators are required**

Final Exam

Value: 40% of final grade
Date: Consult Final Exam Schedule
Length: 120 min
Type: Multiple choice exam, in-person written.
(calculators are not required for the final exam)

Notes on Evaluation Components (Laboratory)

Lab 1: Riverbank Field Trip

Value: 0.6% of final grade (Approximately). 0.6% post-lab review quiz.
Available **Sept. 20, 2023**
Due Date: **Sept. 30, 2023**
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS
Description: Post-Lab Quiz based on lab manual and assigned reading from the text if the lab manual makes such reference, and topics discussed on site
Learning Outcome: Familiarity with basic ecosystem components and concepts.

Beaver Creek Field Trip: Presentation of Data; Logistic Growth

Value: 2.5% of final grade (Approximately). 0.6% post-lab review quiz, 1.7 % lab attendance.
Available **Sept. 20, 2023** post-lab review quiz, **Sept 16, 2023** attendance
Due Date: **Sept. 30 2023** post-lab review quiz, **Sept 16, 2023** attendance
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS for post lab review
Learning Outcome: A greater understanding of ecosystem components and concepts.

Lab 2: Kernen's Prairie Field Trip

Value: 2.5% of final grade (Approximately). 0.6% post-lab review quiz, 1.7 % data collection.
Available **Sept. 27, 2023** post-lab review quiz, **Sept 18, 19, 20, 2023** data collection in lab
Due Date: **Oct. 14, 2023** post-lab review quiz, **Sept 18, 19, 20, 2023** data collection in lab
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS for post lab review
Learning Outcome: Familiarity with some common Saskatchewan grassland species and specific data collection techniques in grassland ecosystems.

Lab 3: Pike Lake Field Trip

Value: 0.6% of final grade (Approximately). 0.6% post-lab review quiz.
Available **Sept. 27, 2023** post-lab review quiz,
Due Date: **Oct. 14, 2023** post-lab review quiz,
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS
Learning Outcome: Familiarity with some common Saskatchewan freshwater species and structure in aquatic ecosystems.

Lab 4: Introduction to Exponential and Logistic Growth

Value: 4.1% of final grade (Approximately). 0.6% post-lab review quiz, 2.9 % sample problem lab assignment in lab, 0.6% population growth graph as an example of scientific presentation of data in lab.
Available: **Oct. 18, 2023** post-lab review quiz, **Oct. 2,3,4** in lab for Sample Problem and graphing assignments
Due Date: **Oct. 28, 2023** post-lab review quiz, **Oct. 2,3,4** in lab for Sample Problem and graphing assignments
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS for post lab review.

A sample population growth problem will also be completed and submitted.

The presentation of data assignment will require each student to prepare a data structure(s) (table or figure), based on data they develop, which are to be organized and presented in a scientific manner.

Description: (Presentation of Data) The presentation of data figure(s) will be prepared using MS Excel. A scientific figure caption will be written and included with each graph/table. Presentation quality graphing is required, i.e., clearly labelled axes, legends for graphs with more than one data set presented, lines and markers which are clearly different even in black and white printing, no shading of background, appropriate use of space etc. **See the example figure in Appendix 1 in the lab manual.**

Learning Outcome: An understanding of the both the assumptions of the logistic growth model and the variables affecting logistic growth. An understanding of the relationships between the variables is also expected.

Lab 5: Life Tables for Determination of Growth Rates for Continuously Reproducing Populations

Value: 2.5% of final grade (Approximately). 0.6% post-lab review quiz, 1.7 % sample problem lab assignment in lab
Available: **Oct. 18, 2023** post-lab review quiz, **Oct. 16,17,18** in lab for Sample Problem
Due Date: **Oct. 28, 2023** post-lab review quiz, **Oct. 16,17,18** in lab for Sample Problem
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS for post lab review.

A sample Life table problem will also be completed and submitted.

Learning Outcome: An understanding of the methodology and assumptions of life table development and the variables involved in determining growth rates through life tables. An understanding of the relationships between the variables is also expected.

Assignment 6: Sampling Methods for Developing Ecological Data

Value: 3.5% of final grade (Approximately) 0.6% post-lab review quiz, 2.9 % in lab data analysis exercise.
Available: **Nov. 1, 2023** post-lab review quiz, **Oct. 23,24,25** in lab for data analysis exercise
Due Date: **Nov. 12, 2023** post-lab review quiz, **Oct. 23,24,25** in lab for data analysis exercise
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS for post lab review.

Completion of an ecological work sheet relating to the frequency and density of tree species.

Description: This assignment will require each student to analyze data on frequency and density, that they develop, in order to determine the dispersion of tree species in space and the resulting effect on accuracy of estimate of abundance. Trends in these data will be interpreted, based on assumptions relative to the applied sampling method, in the written portion of this assignment. A scientific figure caption will be written and included with each graph/table. Presentation quality graphing/table prep is required, i.e. clearly labelled axes/column-row titles, legends for graphs with more than one data set presented, lines and markers which are clearly different even in black and white printing, no shading of background, appropriate use of space etc. **See the example figure in Appendix 1 in the lab manual.**

Learning Outcome: An understanding of the purpose of sampling, assumptions made in sampling, basic sampling techniques used for various vegetation types, types of data that can be collected, the importance of dispersion patterns in the individuals of a species in sampling outcomes, and the effect of scale on perceived patterns of dispersion. An understanding of the different measures used to assess importance of individual of species in a community and the limitations of each measure will also be gained.

Lab 7: Statistical Analysis of Ecological Data: The Chi-Square (X^2) Test

Value: 3.5% of final grade (Approximately) 0.6% prelab quiz, 2.9 % in lab assignment.
Available: **Nov. 1, 2023** post-lab review quiz, **Oct. 30,31,Nov. 1** in lab for data analysis exercise
Due Date: **Nov. 12, 2023** post-lab review quiz, **Oct. 23,24,25** in lab for data analysis exercise
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS for post lab review.

Completion of an ecological work sheet relating to the X^2 analysis of ecological data obtained from Kernen's Prairie Field Trip.

Description: This assignment will require each student to analyze data for the occurrence of each of several species in relation to an environmental gradient using the X^2 statistical test Trends in these data will be interpreted based on the result of X^2 calculations. A scientific figure caption will be written and included with each table. Presentation quality table preparation is required. **See the example table in Appendix 1 in the lab manual.**

Learning Outcome: An understanding of the importance of statistics in analysis of ecological data, the basic assumptions related to the X^2 test, the mathematics of the X^2 test, null hypothesis development and falsification, interpretation of ecological data based on X^2 results, use of contingency tables in analysis of ecological relationships.

Assignment 8: Terrestrial Energy Flow Exercise, Preparation of a Schematic Energy Flow Diagram for a Fescue Grassland

Value: 2.9% of final grade (Approximately) 0.6% prelab quiz, 2.3% in lab assignment.
Available: **Nov. 22, 2023** post-lab review quiz, **Nov. 13,14,15** in lab for energy flow exercise
Due Date: **Nov. 30, 2023** post-lab review quiz, **Nov. 23,24,25** in lab for energy flow exercise
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS for post lab review.

Completion of an energy flow work sheet from data collected at Kernen's Prairie.

Description: Based on known relationships between energy and biomass, within and between trophic levels, each student will develop a detailed energy flow and biomass distribution diagram for Kernen's Prairie based on collected data.

Learning Outcome: An understanding of; energy, biomass, gross primary production (GPP), net primary production (NPP), Respiration (R), energy allocation.

Assignment 9: Energy Efficiency in Ecosystems using an Aquatic Model

Value: 2.9% of final grade (Approximately) 0.6% prelab quiz, 2.3% in lab assignment.
Available: **Nov. 22, 2023** post-lab review quiz, **Nov. 20,21,22** in lab for energy flow exercise
Due Date: **Nov. 30, 2023** post-lab review quiz, **Nov. 20,21,22** in lab for energy flow exercise
Format: Multiple choice, ONLINE, OPEN BOOK, 2 ATTEMPTS for post lab review.

Completion of an energy flow diagram for an arctic or tropical lake.

Format: This assignment will require each student to complete calculations relating to the efficiency of energy transfer using a tropical lake as a model. Efficiency values for an Arctic lake and a grassland will be supplied for comparison. The student will develop an energy flow diagram for the tropical lake.
Assignment will be submitted as a Word document and the energy flow diagram as a Word document, photo or scan.

Description: This assignment will require each student to complete calculations relating to the efficiency of energy transfer using an arctic or tropical lake as a model. Efficiency values for other lake and a grassland will be supplied for comparison. Based on data for the lake provided, each student will work out various efficiencies of energy transfer, within and between trophic levels and each student will develop a detailed energy flow and biomass distribution diagram based on provided data.

Learning Outcome: An understanding of energy, biomass, gross primary production(GPP), net primary production (NPP), Respiration (R), energy allocation, calculation of various energy transfer efficiencies and the influence of these efficiencies on ecosystem structure.

Attendance Expectations and Criteria That Must Be Met to Pass

All students are expected to attend all lectures and labs. Attendance in laboratories is mandatory, with excused absence from the laboratory for approved reasons allowable only as explained in the laboratory manual.

Accommodations to miss the college-approved field trip on Saturday, Sept 16, will be done on a case-by-case basis in consultation with the lab coordinator. Make up arrangements will be arranged based on mutual agreement of student and instructor. Graded component value will be spread across future assignments.

An overall course grade of 50% must be obtained to pass this course. All students must write the final exam to pass this course. Failure to write the final exam will result in a grade entry of Incomplete Fail.

University of Saskatchewan Grading System (for undergraduate courses)

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

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 and cannot be shared without written permission. If materials are designated as open education resources (with a creative commons license) you can share and/or use in alignment with the [CC license](#). This 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

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

Academic Integrity

The University of Saskatchewan is committed to the highest standards of academic integrity (<https://academic-integrity.usask.ca/>). Academic misconduct is a serious matter and can result in grade penalties, suspension, and expulsion.

Prepare for Integrity

Students are expected to act with academic integrity.

- Students are encouraged to complete the Academic Integrity Tutorial to understand the fundamental values of academic integrity and how to be a responsible scholar and member of the USask community (tutorial link: <https://libguides.usask.ca/AcademicIntegrityTutorial>).
- Students can access campus resources that support development of study skills, time and stress management, and ethical writing practices important for maintaining academic integrity and avoiding academic misconduct.

Responses to Misconduct

Students are expected to be familiar with the academic misconduct regulations (<https://governance.usask.ca/student-conduct-appeals/academic-misconduct.php#About>).

- Definitions appear in Section II of the academic misconduct regulations.
- The academic misconduct regulations apply regardless of type of assessment or presence of supervision during assessment completion.
- Students are advised to ask for clarification as to the specific expectations and rules for assessments in all of their courses.
- Students are urged to avoid any behaviour that could result in suspicions of cheating, plagiarism, misrepresentation of facts. Students should note that posting copyrighted course materials (e.g., notes, questions, assignments or exams) to third party websites or services or other forum or media without permission is an academic or non-academic misconduct offense.

Non-academic offenses are dealt with under the [Standard of Student Conduct in NonAcademic Matters and Regulations and Procedures for Resolution of Complaints and Appeals](#).

Important Note: Additional information about student misconduct specific to Biol 228 can be found in the laboratory manual. Biol 228 students are required to read and understand the information about misconduct that is presented in the laboratory manual.

Note: A few components of this course will be done online. Although learning in a remote context is different, 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 quizzes administered remotely and to follow these carefully and completely.

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.

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>

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 <https://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>).

Indigenous Students

The Gordon Oakes Red Bear Student Centre is dedicated to supporting the personal, social, cultural, and academic success of Métis, First Nations and Inuit students. Students are encouraged to visit <https://students.usask.ca/indigenous/index.php> 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 <https://students.usask.ca/international/> 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. Undergraduate Student Office Contact: Room 265, Arts Building (306) 966-4231, student-advice@artsandscience.usask.ca

Treaty and Land 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