

BIOLOGY 228.3 Q1

Lecture Schedule, Summer Session, May 6 – 29, 2015

(Lecture: Rm. 155 Geology, 8:30 – 10:50 am)

Instructor: Scott Halpin, Office 150 Biology, Telephone: 966-4493

Text: **Elements of Ecology** or **Ecology and Field Biology** (any edition)
Smith, R. L. and T. M. Smith (Optional: Copies available in Natural Sciences Library)

Lab: 1:30 -5:30, Rm 213 Biology

Fieldtrips: Hat, rain gear, good shoes, long pants recommended, food, water, sun screen, insect repellent. Optional: binoculars, field guides to plants and animals.

Evaluation: Midterm exam.....20%
Laboratory.....40%
Final Exam.....40%

Attendance of all lectures is required. Written excuses are required for absences. Students with disabilities are encouraged to self-identify and provide documentation at the earliest possible time so that appropriate measures may be arranged

All suspected incidences of cheating/academic dishonesty will automatically be forwarded to the Academic Dishonesty Committee of the College of Arts and Science for assessment and action.

All students are expected to review the Guidelines for Academic Conduct and associated documents posted at http://www.usask.ca/university_secretary/honesty/. These guidelines are set by the University Council and individual colleges may have additional regulations which are in addition to, but consistent with, those of the university council.

Missed Examinations:

In the event of a missed midterm or lab quiz/exam the student is required to contact the instructor within 3 working days IN PERSON or by telephone (email is not acceptable). Supporting documentation for exceptional circumstances (illness, bereavement etc.) must be supplied in order for consideration of deferred testing to proceed. Failure to comply will result in a mark of zero.

In the event of a missed Final Exam, college guidelines apply and the student must apply to the Dean's Office of the college in which he/she is registered. The application for a deferred Final Exam must be filed within 3 working days of the scheduled Final Exam. Supporting documentation for exceptional circumstances (illness, bereavement etc.) must be supplied in order for consideration of deferred testing to proceed. Failure to comply will result in a mark of zero.

Email Policy:

Questions relating to explanations of course content are best asked after class or during lab periods. Instructors reserve the right to answer emails at their discretion.

Special Needs or Disabilities:

Students with special needs or disabilities are encouraged to contact the instructor and let me know about your needs as soon as classes begin. Every effort will be made to accommodate the requirements of students with special needs. Please take advantage of the programs offered by Disability Services (<http://www.students.usask.ca/disabilities/dss/>)

Description and Course Objectives:

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 with 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. Your instructors have expertise in aquatic ecosystem ecology, vegetation ecology and field data collection methods for terrestrial and aquatic systems.

Learning Objectives:

Through lectures, assigned readings, and laboratory exercises students will:

- Develop an introductory understanding of ecology. This understanding will be in 4 major ecological sub-disciplines: population, community, ecosystem and global ecology.
- Be able to describe how the scientific methods is 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 evaluation 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

Prerequisites:

BIOL 1221 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.

Summer 2015 Lecture Schedule

Date	Topic	Recommended Readings
MAY 6	Introduction: Concepts of Ecology & Ecosystems	Chap 1,2,3,4 (All readings in “Elements of Ecology”)
MAY 7	Life History Patterns & the Basics of Population Ecology	Chap 8, 9
MAY 8	Populations: Patterns and Growth	Chap 10
MAY 11	Competition Within and Among Species	Chap 11, 12, 13
MAY 12	Species Interactions: Predation, Parasitism, Mutualism	Chap 14, 15
MAY 13	Species Interactions and Community Dynamics	Chap 17
MAY 14	Species Interactions and Community Structure and Diversity	Chap 16,18,19
MAY 15	Species Interactions and Community Structure and Diversity	Chap 16,18,19
MAY 18	NO CLASS Victoria Day	
MAY 19	Thermodynamics and Energy in Ecosystems	Chap 20, 21
MAY 20	Beaver Creek Field Trip All Day (bring: good walking shoes lunch, water, optional hat, bug spray, sunscreen, rain gear etc.)	
MAY 21	Biogeochemical Cycles	Chap 21, 22
MAY 22	Biogeochemical Cycles and Pollution	Chap 28
MAY 25	Terrestrial Ecosystems: BIOMES	Chap 23
MAY 26	Aquatic Ecosystems: Freshwater and Marine Ecosystems	Chap 24
MAY 27	Review	
MAY 28/29 TBA	Final Exam	

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- **FINAL EXAM:** see website for exam date (<http://students.usask.ca/current/academics/exams/spring-summer.php>)

Laboratory Schedule, Summer Session, 2015

May 6	<u>NO LAB</u>
May 7	Quantative Vegetation Sampling Methods*
May 8	Statistical Analysis of Data; The X ² Test*
May 11	An Investigation of Exponential Growth Models*
May 12	An Investigation of Logistic Growth Models*
	Quiz 1, Sampling methods and X ² labs
May 13	<u>NO LAB</u>
May 14	Energy Flow and Materials Distribution in Terrestrial Systems*
May 15	<u>NO LAB</u>
May 18	<u>NO LAB</u>
May 19	Energy Flow and Materials Distribution in Aquatic Systems*
May 20	Beaver Creek Field Trip; An Introduction to Saskatchewan Ecosystems (note all day 8:30 to 5:20)
May 21	Saskatchewan Riverbank Fieldtrip*
	Quiz 2, Population Growth and Energy Flow
May 22	<u>REVIEW LAB</u>
May 25	<u>FINAL LAB EXAM 1:30 to 3:30 pm</u>

Fieldtrips: Hat, rain gear, good shoes, long pants recommended, food, water, sun screen, insect repellent. Optional: binoculars, field guides to plants and animals.

Evaluation: This laboratory is worth 40% of your total mark for Biology 228.3

Lab Assignments/Quizzes25%
Final Lab Exam.....15%

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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.

All students should read and be familiar with the Regulations on Academic Student Misconduct (http://www.usask.ca/university_secretary/honesty/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/university_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at:
http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf

Examinations with Disability Services for Students (DSS)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check <http://www.students.usask.ca/disability/>, or contact DSS at 966-7273 or dss@usask.ca.

Students registered with DSS may request alternative arrangements for mid-term and final examinations.

Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by DSS.

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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