UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	BIOL 424 Grasses and Grasslands		
COURSE CODE:		**TERM:**	T2
COURSE CREDITS:	3.0	**DELIVERY:**	Lecture and Lab
CLASS SECTION:	01	**START DATE:**	January 7, 2013
CLASS LOCATION:	Rm. 4C77 Agriculture Building	**LAB LOCATION:**	Rm. 4C77 Agriculture Building
CLASS TIME:	Tues./Thurs 8:30 – 9:50 a.m.	**LAB TIME:**	Monday 1:30 – 5:20 p.m.
WEBSITE:	accessible via Blackboard		

Course Description

A study of the morphology, systematics, biogeography, synecology and autoecology of grasses and other graminoids, and ecology of grasslands. Laboratory emphasis is on the structure and taxonomy of grasses and grass-like plants.

Prerequisites: BIOL 121 and 222 (formerly 202 or 205); or permission of the instructor

Learning Outcomes

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

1) Identify grass and grass-like species using dichotomous keys based on morphology
2) Describe grass and grassland structure and function
3) Discuss key concepts of grassland ecology at population, community and ecosystem levels
4) Demonstrate knowledge of grassland ecology in the context of conservation and management

Information on literal descriptors for grading at the University of Saskatchewan can be found at: http://students.usask.ca/current/academics/grades/grading-system.php

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: http://www.usask.ca/university_secretary/LearningCharter.pdf

Course Overview

In this course students are introduced to grass morphology and physiology, and will examine adaptations and evolution of grasses and explore relevant ecological concepts at the population, community and ecosystem levels. We consider key ecosystem processes that shape grassland environments and discuss current issues of grassland conservation and management. This course provides a global perspective of grasses and grassland ecology with emphasis on the temperate grasslands of North America.

Class Schedule

Date	Topic	Readings	Evaluation Due Date
Jan. 7	Course Introduction	Text 1.1-1.4 (p. 1-20)	nothing due
Jan. 9	Grass Morphology and Anatomy	Text 3.1-3.2 & 3.8 (p. 35-36 & 54-57) p. 1-40 Harrington (lab Jan. 13)	nothing due
Jan.14	Grass Adaptations	Text 3.3-3.8 (p. 36-56)	nothing due
Jan. 16	Grass Physiology	Text 4.1 (p. 58-68) Paper TBD	nothing due
Jan. 21	Physiological Ecology	Text 4.2-4.4 (p. 68-79),	weekly lab quiz (Jan. 20)
Jan. 23	Grass Systematics	Text 2.1-2.3 (p. 21-29), Paper TBD	nothing due
Jan. 28	Evolution of Grasses	Text 2.4 (p. 29-34)	weekly lab quiz (Jan. 27)
Jan. 30	Populations and Communities	Text 5.1-5.3 (p. 81-109) Paper TBD	nothing due
Feb. 4	Populations and Communities	Text 6.1-6.5 (p. 110-128)	weekly lab quiz (Feb. 3)
Feb.6	Grasslands of North America	none	nothing due
Feb. 11	Grasslands of North America	none	weekly lab quiz (Feb. 10)
Feb. 13	Midterm Exam	none	Midterm Exam (incl. Feb. 11 lecture)
Feb. 18 & 20	Midterm Break	Paper TBD	nothing due
Feb. 25	The Grassland Ecosystem	Text 7.1-7.3 (p. 129-153)	weekly lab quiz (Feb. 24)
Feb. 27	Grassland Ecosystems: Soils and Climate	Text 7.4, 8.1-8.3 (p. 153-183), Paper TBD	nothing due
Mar. 4	Grassland Ecosystems: Grazing	Text 9.1 & 9.3 (p. 184-187 & 194-207)	weekly lab quiz (Mar. 4)
Mar. 6	Bison Ecology	Paper TBD	nothing due
Mar. 11	Grassland Ecosystems: Fire	Text 9.2 (p. 187-194)	weekly lab quiz (Mar. 5)
Mar. 13	Invasive Species	Text p. 9-12, Paper TBD	nothing due
Mar. 18	Rangeland Assessment	Text 10.2 (p. 221-234)	weekly lab quiz (Mar. 18)
Mar. 20	Grassland Ecological Goods and Services	Paper TBD	Proposals due
Mar. 25	Grassland Restoration	Paper TBD	weekly lab quiz (Mar. 19)
Mar. 27	Grassland Conservation	Paper TBD	Posters due
Mar. 31	Grassland Management	Text 10.1 & 10.3 (p. 211-221 & p. 235-242)	weekly lab quiz (Mar. 30)
April 1	Grassland Management	Paper TBD	nothing due
April 3	Poster Presentations	none	Poster presentations
April 8	Graminoid Ethnobotany	none	Final Lab exam April 7

Instructor Information

Contact Information

Sessional Lecturer
Allison E. Henderson, PhD Candidate
Room University of Saskatchewan **email:** allison.henderson@usask.ca

Laboratory Instructor
Nicole Kearns,
Room University of Saskatchewan

Office Hours

Allison Henderson is available to meet with students upon request on Tuesday and Thursday 10:00-11:50 a.m. Students may also send their questions via email, I will reply within 24 hours (weekdays only).

Instructor Profile

Allison Henderson holds advanced degrees from the University of Saskatchewan (PhD- School of Environment and Sustainability) and Simon Fraser University (MSc- Behavioural Ecology). She is currently employed as a Habitat Biologist with the Canadian Wildlife Service and has 7 years of experience working in the grassland system of Saskatchewan's southwest. Prior to her PhD studies, which focused on the ecology and conservation of grassland songbird species at risk, she was a Species at Risk Monitoring Technician with Grasslands National Park.

Nicole Kearns completed both her B.Sc. (Hon.) and M.Sc. in Biology at the University of Saskatchewan, and has over 5 years of environmental research and consulting experience. Her M.Sc. thesis focused on the plant community recovery after oil and gas disturbance in the Mackenzie River Delta, NWT. She is currently employed as a Vegetation Ecologist with Stantec Consulting Ltd. working in the environmental management division. Nicole has worked for the University of Saskatchewan for over 10 years as a sessional lecturer for Biol 121, a laboratory coordinator for Biol 120, and a teaching assistant for Biol 110 (old), 120, 121, 222, 205 (old), and 373.

The teaching goals for instructors of this course are to:

1. Actively engage students through group work and class discussion in lectures and hands-on identification of grass specimens in the lab
2. Be available to answer questions during class time and via email
3. Respond promptly to student concerns and feedback (within 24 hrs.; weekdays only)

Required Resources

Textbooks

Required Harrington, H. D. 1977. **How to Identify Grasses and Grasslike Plants**. Swallow Press, USA. 154 pp.

Recommended Gibson, David J. 2009. **Grasses and Grassland Ecology**. Oxford University Press, New York, USA. 305 pp.

Textbooks are available from the University of Saskatchewan Bookstore:
www.usask.ca/consumer_services/bookstore/textbooks

Readings

All required readings will be announced in the week prior to the lecture.

Downloads

These will be available as appropriate through the course Blackboard. The only document that you are required to download and read is the course syllabus. Please note that instructor's Powerpoint slides may be provided to you as a courtesy. You are not required to download or print these slides. While we will endeavour to have the lecture Powerpoint slides posted sometime in advance of the lectures, we will not guarantee this. Each instructor will provide you with additional information about their downloads.

Supplementary Resources

From time to time, your instructors may make supplementary material available to you through the course Blackboard. This material will not replace the lecture or lab experience and you are encouraged to attend all lectures and take your own notes.

Grading Scheme

Weekly Lab Quiz (fill-in-the-blank and multiple choice)	10
Mid-term Exam	20
Research Proposal (1 pg., 500 words, 5 refs max)	10
Poster and Presentation (.ppt; 11 x 17)	15
Final Lab Exam (short answer and plant identification)	20
Final Exam (fill-in-the-blank, short answer, long answer)	25
Total	100%

UNIVERSITY OF SASKATCHEWAN

Evaluation Components

Weekly Lab Quiz

Value: 10% of final grade
Due Date: weekly at the start of the laboratory (beginning Jan. 13).
Type: Weekly lab quizzes
Description: These weekly quizzes offer students an opportunity to track their learning in the laboratory in an ongoing way. The format varies between short answer and fill-in-the-blank.

Midterm Exam

Value: 20% of final grade
Date: Feb. 13, 2014
Length: 1.5 hours
Type: Comprehensive, closed-book, invigilated
Description: This is a exam that includes fill-in-the-blank, short answer, and long answer questions aimed at evaluating student's knowledge in the first half of the course. Note that the exam includes material from the lecture on Feb.11.

Research Proposal

Value: 10% of final grade
Due Date: March 20, 2014
Type: In this one page, 500 word proposal, students demonstrate their ability to clearly and concisely communicate in writing. This must be an original proposed research project on a topic related to grasses or grassland ecology.
Description: The proposal follows the style of NSERC funding proposals; students may refer to a maximum of five references. Details and an example research proposal are shared with students at the outset of the course and again on Feb. 25.

Poster and Presentation

Value: 15% of final grade
Due Date: Poster- 7.5% of final grade; due March 27, 2014
Presentation- 7.5% of final grade; due April 3, 2014
Type: The poster and presentation assignments offer students an opportunity to hone skills in verbally communicating research ideas related to grasses or grassland ecology. Students also gain experience in peer evaluation.
Description: Each student works independently to create a poster (.ppt;11x 17) based on their research proposal. Students present their poster in a mini-poster session either on April 3.

Final Lab Exam

Value: 20% of final grade
Date: April 7, 2014
Length: 3 hours
Type: Comprehensive, closed-book, invigilated
Description: Students are evaluated on their ability to identify graminoid species using pressed material. Dissecting microscopes and tools are available.

Final Exam

Value: 25% of final grade
Date: TBD between April 10 and 30, 2014.

Length: 3 hours
Type: Comprehensive, closed-book, invigilated
Description: fill-in-the-blank, short answer, long answer, and problem-based questions.

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 (April 10-30. 2014); 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 and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures: http://www.usask.ca/calendar/exams&grades/examregs/

Submitting Assignments

The proposal and poster assignments are due at midnight on the assigned due date and can be submitted either as a hardcopy in person in the lecture or as a digital .pdf file by email.

Late Assignments

Students will lose 10% of the total grade for each day that an assignment is late.

Criteria That Must Be Met to Pass

Students must write the final laboratory and lecture exams in order to pass the course. Students who do not write either final exam will be assigned a final course grade of 49%, or lower depending on their performance in other aspects of the course, along with a grade comment of INF (Incomplete Failure). The final grade will be adjusted if a deferred final exam is written.

Attendance Expectations

Students are expected to attend lectures, engage in laboratory activities, ask questions, make arrangements with instructors for late assignments or missed exams, abide by guidelines of classroom etiquette and be responsible for their performance in the course.

Classroom Etiquette:

Instructors ask that cell phones are turned to silent prior to entering the classroom. Laptop computers will only be permitted in the classroom for course-related activities. Students with specific learning needs or disabilities are encouraged to communicate their needs with instructors at the outset of the course.

Participation

A significant portion of the lecture involves class discussion, either of weekly assigned papers or with guest experts. Students are expected to actively participate in group discussions.

Student Feedback

Both instructors will actively seek student feedback throughout the course during lecture and laboratory class times. Students can also provide feedback to both instructors by email; we will aim to respond within 24 hrs. (weekdays only).

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

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.