

COURSE SYLLABUS COMMUNITY ECOLOGY

COURSE TITLE:	Community Ecology		
COURSE CODE:	BIO373.3	TERM:	2015-2016 Term 2
COURSE CREDITS:	3	START DATE:	January 6 th , 2016
CLASS LOCATION:	Rm. 125 Biology	LAB LOCATION:	Rm. 212 Biology
CLASS TIME:	Mon/Wed/Fri 8:30-9:30 am	LAB TIME:	Wed 1:30-4:30 pm (plus one Saturday)
WEBSITE:	Course materials are available at bblearn.usask.ca		

1. Instructor Information

Instructor: Mélanie Jean
Office: Room 118 Biology or Room 240 Biology
Email: melanie.jean@usask.ca
Phone : upon request
Office hours : Drop in M/F 9:30-12:00 in Biology 240
By appointment Room 118 Biology

Faculty mentor: Dr. Jill Johnstone
Office: Rm. 236 Biology
Email: jill.johnstone@usask.ca
Phone: 966-4421
Office hours: By appointment

Lab instructors: Alexandra Conway and Megan Horachek
alix.conway@usask.ca, megan.horachek@usask.ca
Office Rm. 118 Biology

Instructor Profile

I am a 4th year PhD student in Dr. Johnstone's lab. I obtained my undergraduate degree from Université de Montréal, and my M.Sc. from Université Laval before moving to Saskatoon to start at the UofS. My research focuses on the importance of moss communities in ecosystem processes driving Alaska's boreal forests dynamics. My teaching philosophy is articulated around four main themes: respect, clarity, passion, and leave no one behind. I am striving to improve my teaching. For this purpose, I will often collect feedback from you (about what you liked or not, and about what you've learned or struggled with). This feedback will be used to improve my teaching and adapt it in a way that can reach as many students as possible.

2. Course Description

Examines physical and biotic factors shaping species assemblages over space and time, especially processes controlling plant communities (e.g. environmental factors, disturbance, and biotic interactions). Explores current issues in community ecology, such as impacts of diversity loss, invasive species, and environmental change. Laboratories focus on experimental design, data collection and analysis.

Prerequisites

BIOL 228 or PLSC 213; AND one of STAT 245, STAT 246, or PLSC 214.

3. Course Aims and Learning Outcomes

Aims

This course aims to train students in the process of designing, implementing, and analyzing research in community ecology, and in the interpretation and presentation of results. At the same time, the course will help students develop the theoretical background in community ecology that is needed to frame useful questions in research and interpret new and existing knowledge. An emphasis will be placed on examining ecological questions within the context of current issues in ecology that have the potential to inform and influence how we manage our impacts on diverse ecosystems.

Learning outcomes

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

- Have built the knowledge needed to better understand and critically evaluate ecological issues
 - Identify and describe the key types of species interactions that shape the structure and function of ecological communities, and hypothesize how those processes may act in specific ecosystems
 - Develop familiarity with key ecological theories and examine how these are being tested and evaluated in the current scientific literature
 - Examine examples of how ecological knowledge is built through time from past theories and new data, and applied to address current issues in ecology
 - Gain insights into the role of humans in ecological systems, and grapple with some of the complex issues of human management of ecological systems
- Have developed skills as a practitioner of ecology
 - Design, implement, and interpret ecological research through the iterative development of their own ecological studies and by studying published examples of research
 - Compile, summarize, and interpret raw ecological data using tools of descriptive and quantitative analysis
 - Improve their abilities in written presentation of research results following the standard scientific style

4. Required Resources

Readings/Textbooks

Morin, Peter J. 2011. **Community Ecology (Second Edition)**. Wiley-Blackwell: West Sussex, UK.

This text is available as a **FREE** e-book through the U of S library. Note: you must be logged onto the UofS network to obtain the e-book.

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

Other Required Materials

Supplementary readings: The information needed for you to locate published journal articles will be provided on the course website on PAWS. We will be discussing these readings in lectures and labs, and some may provide the basis for additional written exercises.

Electronic Resources

Course materials (Powerpoint slides) will be posted on BlackBoard (bblearn.usask.ca).

Mobile devices, specifically laptops and tablets may be used in this course for educational purposes only (i.e., learning directed related to the course). Those who choose to use such devices, except for accessibility reasons, are asked to sit at the back of the room.

5. Grading Scheme

A range of different tools will be used to evaluate your progress in this course, with the aim being to assess your level of understanding and to provide you with opportunities to challenge yourself, practice your skills, and obtain feedback. Your final mark will be a number grade from 0 to 100%. A final grade of 50% is required to officially pass the course. Your final grade will be determined based on the following course components:

Course Component	Weight
Participation	10%
Lab assignments	30%
Lab final report	10%
Mid-term exams	20%
Final Exam	30%
Total Grade	100%

6. Evaluation Components

Participation (Weekly warm-up questions and participation)

You are responsible for completing weekly readings outside of class from the textbook and current literature. To help gauge your understanding of the reading material and direct some discussions in lectures, you will be asked weekly to complete a set of “warm-up” questions from the readings. Answers to these questions will be submitted online using the blackboard system on the PAWS course website and are due by 9am on the due date (usually Wednesday). The participation grade you will receive will be based on submitting responses to the pre-class “warm-up” exercises (10%).

You are expected to attend all laboratory classes. There will be a penalty of 1% of your final mark (up to a maximum of 5%) for each unexcused absence from lab. Please contact the laboratory instructor ahead of time with appropriate documentation if you must miss a lab. **Please note that you will be required to attend one of two field labs scheduled on a Saturday in March (March 5th or 12th).** Two regular lab meetings have been cancelled during the term to compensate for the extra time required for a Saturday lab activity.

Lab assignments:

Lab activities for this course will be structured around three modules in which you will conduct individual and group research on different topics. The first module will focus on developing analysis and interpretation skills using an existing ecological dataset. The remaining two modules will involve working in groups to collect your own data for analysis. For each module you will be required to complete two assignments: one based on quantitative analyses, the second focused on written exercises in scientific interpretation. These initial exercises will form the skills and knowledge base for your final report, and will constitute 30% of your final mark.

Final lab report

At the end of term, you will complete a final report your choice of Module 2 or 3. This report will include all of the main sections of a scientific paper: a) abstract, b) introduction to the topic and research questions or hypotheses, c) summary of materials and methods, d) description of the results, including presentation of actual data, e) discussion in which the results are interpreted, and f) list of cited references. The report will be due on the last day of class (April 6), and will determine 10% of your final mark.

Mid-term Exams

There will be two midterm exams, which will emphasize concepts that we have worked with over the previous 4 weeks in lecture, labs, and assigned readings.

Exams will focus on two types of questions: 1) problem-based questions that assess skills in research design and interpretation, and 2) short answer or essay questions that test a student’s ability to describe, synthesize, and apply key concepts about patterns and processes in ecological communities.

If you are forced to miss a mid-term exam, we will reallocate points from that exam to the subsequent exam(s) for your final grade. You may petition the instructor for a non-graded replacement exam to provide feedback on your progress in the course.

Final Exam

The final exam will be held during the assigned exam period and will provide a comprehensive exam of material covered in lectures, labs, and course readings. The final exam will cover all concepts covered during the semester.

As in the mid-term exams, the final exam will include a mix of 1) problem-based questions and 2) short answer or essay questions. It will be a closed-book exam.

Students are required to take the final exam to pass the course. However, if you miss the final due to medical issues or other emergencies, you can apply for a deferred final exam by contacting the College of Arts and Science directly. The final exam represents 30% of your final mark.

7. Submitting Assignments and Late Assignments

All lab assignments have to be printed and handed to the TAs at the start of the laboratory session on the due date (see schedule). The final lab report has to be printed and handed to the instructor at the start of the last class on April 6th, 2016.

We have a strict policy regarding late assignments. Late assignments will be penalized by 10% for each late day for up to five days. We will **not** accept assignments past that deadline.

8. Course Overview

The first half of the course covers foundational concepts: the key types of species interactions that shape the structure and function of ecological communities. The second half of the course is focused on applications of these interactions, case studies, and examples of research.

9. Tentative Class Schedule

This is an overview of the class schedule for lectures, textbook readings, laboratory topics, exam schedule, and due date for lab assignments. The schedule and procedures for this course's lectures are subject to change in the event of extenuating circumstances. Only the textbook readings are included in this schedule. *Additional readings required will be communicated to you during class.*

Following are schedules showing class meeting dates for Winter 2016 Term 2 for Monday-Wednesday-Friday courses, and Thursday labs.

Week	Dates	Lecture topic	Textbook readings*	Lab topic	Week
1	Jan6-11	1. Concepts of ecological communities	Morin p. 3-23	- No Wednesday lab -	1
2				Introduction to modules 1 and 2 Start module 2 seeding experiment	2
3	Jan13-20	2. Competition as a factor structuring communities	Morin p.24-57	Module 1: Herbivore impacts on floodplain primary succession - Data analysis	3
4	Jan22-27	3. Top-down biotic controls: Predation and parasitism	Morin p.90-120	Module 2: Competition experiment – Hypotheses *Mod1.A1 due*	4
5	Jan29-Feb3	4. Mutualism and facilitation	Morin p.166-186	Module 1: Herbivory, Data analysis, Part 2 *Mod2.A2 due*	5
6	Feb5-8	5. Trophic cascades	Morin p.166-186	Module 2: Harvest and data analysis	6
	Feb10	*Mid-term exam (Weeks 1-5 – Topics 1-4)*			
	Feb12-22	6. Indirect interactions	Morin p. 187-213		
7	Feb 15-19: Reading week				
8		(continued)		Introduction to Module 3: Winter field ecology – Research design *Mod1.A3 due*	8
	Feb24	Writing Science			
	Feb26-29	7. Spatial dynamics	Morin p. 251-280	Module 3: Winter field ecology – Prep. field labs *Mod2.A4 due*	9
9	Mar2-7	8. Island biogeography	Morin p. 251-280		
<i>March 5th First Saturday lab option</i>					
10		(continued)		Module 2: Biomass and data analysis	10
	Mar9	*Mid-term exam - Wed. (Weeks 5-9, topics 5-7)*			
	Mar11-18	9. Disturbance and succession	Morin p. 319-339		
<i>March 12th Second Saturday lab option</i>					
11		(continued)		Field data analysis & discussion *Mod3.A5 due*	11

12	Mar21-30	10. Causes and consequences of biodiversity	Morin p. 283-318	Preparing your final lab report *Mod3.A6 due*	12
13				- no Wednesday lab -	13
14	Apr1-4	11. Species invasion and community assembly	Morin p.340-348	*Final report due in class on Wednesday April 6th 2016*	14
	Apr6	To be determined			
* The final exam may be scheduled at any time during the examination period (Apr 9-30 2016).*					

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 9th, 2016 and April 30th, 2016; 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://students.usask.ca/academics/exams.php>

10. Academic Honesty

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/secretariat/student-conduct-appeals/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/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.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/secretariat/student-conduct-appeals/forms/IntegrityDefined.pdf>

The College of Arts and Science has a zero-tolerance policy regarding plagiarism and other forms of academic dishonesty. Professors are required by College policy to report all forms of academic dishonesty to the Dean's office. Should copying occur in this course, both the student who copied work from another student and the student who gave the material to be copied will be referred to the Dean's office. Formal penalties for

academic dishonesty range from receiving zero marks on the assignment, to failure of the course, to University-level disciplinary action that may include expulsion.

Please pay careful attention that all your work is honest and does not present work of others without clearly crediting their contribution. Any written work submitted by a student in this course for academic credit must be the student's own work. Collaboration is allowed on group lab projects, but submitted reports must be written by you individually, and no part of the report may be copied from another person or published work. You are encouraged to study together and to discuss information and concepts covered in the course with other students. However, student cooperation or collaboration should never involve one student having possession of a copy of all or part of work done by someone else, in the form of an email, electronic file, or a hard copy.

11. 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://students.usask.ca/health/centres/disability-services-for-students.php>, 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.

12. Student Supports

Student Learning Services

Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site <https://www.usask.ca/ulc/>.

Student and Enrolment Services Division

The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the SESD web site <http://www.usask.ca/sesd/>.

13. Acknowledgements

As we gather here today, we acknowledge we are 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.”

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