UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	**Community Ecology**		
COURSE CODE:	BIOL 373	**TERM:**	Winter 2018 (T2)
COURSE CREDITS:	3	**DELIVERY:**	Lecture & Practicum (Lab)
CLASS LOCATION:	Rm. 125 Biology	**LAB LOCATION:**	Rm. 212 Biology
CLASS TIME:	M/W/F 8:30-9:30 am	**LAB TIME:**	Fri: 1:30-4:30 pm (plus one Saturday)*
WEBSITE:	via bblearn.usask.ca		

*see participation/lab info below

Instructor Information

Instructor: **Shawna Pelech**
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Office hours: flexible and by appointment

Lab instructors:	**Ruth Greuel**	**Roy Vera**
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Email:	ruth.greuel@usask.ca	roy.vera@usask.ca
Office hours:	by appointment	by appointment

Course Description

Calendar 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.**

Course Aims & Learning Outcomes

This course aims to provide students with a theoretical background and understanding of key concepts in community ecology. It also aims to equip students with critical thinking skills and experience with all steps of the scientific method, including quantitative analysis of data, necessary to answer research questions in community ecology. Lectures focus on integrating foundational studies and concepts with current issues and applications in community ecology. Labs will train students in the process of designing, implementing, and quantitatively analyzing data in community ecology, as well as is proper written presentation of results.

Learning outcomes

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

- Accurately describe and quantify key properties and measures of ecological communities and their structure.
- Describe mechanisms and models of key species interactions, both direct and indirect, and how they are thought to shape the structure and function of ecological communities

- Discuss succession, disturbance and spatial structure and their roles in structuring communities.
- Describe complex interactions and controlling factors related to food webs and trophic cascades.
- Discuss principles of and evidence for links between biodiversity and ecosystem stability and production
- Understand the history of community ecology as a discipline, how concepts have built though time and are being applied to address current issues in ecology
- Understand and apply key steps in the scientific method (from formulating appropriate questions, hypotheses and predictions through to experimental design, compilation, analysis and interpretation of data) to answer questions about ecological communities.
- Acquire, critically evaluate and discuss current scientific literature and information related to community ecology
- Improve their written presentation of ecological research using standard scientific style..

Required Resources

Recommended Textbook: 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.

This textbook is also available from the University of Saskatchewan Bookstore: www.usask.ca/consumer_services/bookstore/textbooks

Other Required Materials

Assigned readings: We will use and discuss various other materials through the course (published journal articles, online resources etc.). Links to these resources will be provided in class and/or on the course Blackboard site. Students will be responsible for the material covered in any assigned readings.

Other resources: Lecture outlines (but not complete lecture notes/slides) will be posted on BlackBoard (bblearn.usask.ca). I will try to post these in advance of lectures, but cannot guarantee this for every lecture.

Mobile devices, specifically laptops and tablets may be used in this course for educational purposes only (i.e., taking notes, learning directed related to the course). Please refrain from using these for other purposes during lectures and labs.

Grading Scheme

Your final mark will be a number grade from 0 to 100%. A final grade of 50% is required to officially pass the course. Final grades will be determined based on the following components::

Course Component	Weight
Participation	10%
Lab assignments	25%
Lab final report	15%
Mid-term exams (Jan. 31 & March 7 - 10% each)	20%
Final Exam	30%
Total Grade	**100%**

Evaluation Components

Participation

Value: 10% of course grade
Due Date: Throughout term, specific class discussions, assigned readings and written submission dates announced in class and posted on blackboard
Type & Description: Throughout all lectures and labs you are encouraged to ask questions about the concepts and techniques we are learning and actively engage in class discussions and project planning in labs. Ecology is a discipline that truly requires you to go beyond simple memorization of facts to effectively understand concepts and, in turn, do well in courses. Discussing ideas with others and asking questions is one of (if not the) best way to understand and retain concepts. To this end, certain portions of lectures will be devoted to discussion of topics and assigned readings to both increase and help gauge your understanding of the topics we are learning. Prior to these discussions, you will be asked to complete a set of questions from assigned 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.

The participation grade you will receive will be based in part on these written submissions as well as on your participation in class discussions and lab project planning and activities. A full description and rubric of the participation grading system and dates of specific lecture discussions will be explained in class and posted on blackboard.

Lab assignments

Value: 25% of course grade
Due Dates: announced in lab and posted on blackboard
Type and Description: Lab activities for this course will be generally focus on three modules in which you will conduct individual and group research on different topics. The first module will focus on developing data management, 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. Module 2 will focus on a greenhouse experiment on costs/benefits of mutualism and Module 3 will be based on research questions and data collected during our field lab to Cranberry Flats/Beaver Creek. For each module you will be required to complete assignments focusing on quantitative data analyses and presentation, and proper written scientific description of the study and results. These exercises will form the skills and knowledge base for your final report. Labs will also involve discussion and critical evaluation of scientific literature and current topics. A full breakdown of lab assignments and evaluation components will be provided in lab and on blackboard.

Final lab report

Value: 15% of course grade
Due Dates: announced in lab and posted on blackboard
Type and Description: Students will write a full scientific paper (including all sections: abstract, introduction, methods, results, discussion, and literature citations) based on research, data collection and/or experiments conducting in the lab Module of their choosing (Module 1, 2 or 3). A description of the final report and grading rubric will be provided in lab and on blackboard

Mid-term Exams

Value: 10% each, for a total of 20% of course grade
Due date: January 31, 2018 and March 7, 2018, in class
Type and Description: Mid-term exams will be 50 minutes in length, non-cumulative and cover concepts that we have worked with over the previous ~4 weeks in lecture, labs, and assigned readings.

Exams may use a range of question types (multiple choice, fill in the blank, short answer/essay) but will include and likely focus on problem-based, written answer questions that require critical thinking to: 1) test a student's ability to describe, synthesize, and apply key concepts about patterns and processes in ecological communities and 2) assess skills in research design and

Exams will be closed-book exams. Non-programmable calculators are permitted and may be required for exams, but no other devices or resources are permitted

Final Exam

Value: 30% of the final course grade
Due date: during assigned final exam period April 9-28, 2018, including Saturdays, see PAWS for final exam schedule in February
Type and Description: The final exam will include all material covered in lectures, course readings and portions of the lab. The final exam will cover all concepts covered during the semester (i.e. cumulative), but will focus on material covered in the final weeks during the lecture (that has not been assessed in previous mid-term exams).

As in the mid-term exams, the final exam will include a mix of question types and again focus on written answer, problem-based questions.

Length and Mode of Final Examination

The final exam will be 180 minutes and length, it will include material covered in lectures, course readings and portions of the lab. The final exam will cover all concepts covered during the semester, but will focus on material covered in the final weeks (that has not been assessed in previous mid-term exams).

The final exam will be closed-book. Non-programmable calculators are permitted and may be required for exams, but no other devices or resources are permitted

Submitting Assignments and Late Assignments

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

Specific due dates and submission requirements (printed or electronic) for all assignments and course activities will be communicated in lecture and posted on our course black-board site. Please consult black-board frequently for updated dates and instructions.

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-28th, 2018; students should therefore avoid making prior travel, employment, or other commitments for this period.

Missed exams

Midterms: If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, notification and **valid documentation must be provided to the instructor in writing (email or otherwise) within 3 days** of the exam and an opportunity to write the missed exam may be given. Students should notify the instructor as soon as it is known an exam will be missed. Failure to follow these guidelines may result in a 0% value for the missed exam. Students are encouraged to review all examination policies and procedures:
http://students.usask.ca/academics/exams.php

Final exam: Students are required to take the final exam to pass the course. A student who is absent from a final examination through no fault of his or her own, for medical, compassionate, or other valid reasons, may apply for a deferred exam. Such application must be **made to the college office within three business days** of the missed examination and be accompanied by supporting documentary evidence. Students should notify the instructor as soon as it is known an exam will be missed. Failure to follow these guidelines may result in a 0% value for the missed exam. Students are encouraged to review all examination policies and procedures:
http://students.usask.ca/academics/exams.php

Attendance Expectations

You are strongly encouraged to attend all lectures. Full lecture notes will not be provided and class participation is included as part of your participation grade. Please notify the instructor (with proper documentation if deemed necessary) if you must miss several lectures or days when class discussion are scheduled to avoid absences affecting participation marks.

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 we strongly encourage participation in the Saturday field trip we have planned (for March 3rd or 10th).** We will cancel 2-3 regular lab meetings during the term to compensate for the extra time required for a Saturday lab activity. For those who are truly unable to attend the Saturday trip, we can arrange for an alternate exercise.

Course Overview & Tentative Class Schedule

Below is an overview of the class schedule for lecture topics and associated chapters from our recommended text (Morin. 2011). **Please note this is a *tentative schedule***, the number of lectures devoted to and order of each topic may vary. **Additional required readings** will be communicated to you during class and via the course blackboard site. Specific information regarding the content and schedule of lab and assignments will be also be posted on blackboard and communicated during lectures and lab.

Please consult the course blackboard site frequently for an updated schedule of lecture topics, in-class activities, required readings as well as lab activities and assignments.

Lecture topic	Text
1. Introduction to community ecology, history and key concepts and measures of community structure and pattern.	Ch. 1
2. Species Interactions A. Competition as a factor structuring communities	Ch. 2-3
B. Predation and parasitism: top down controls	Ch. 4-5
C. Mutualism and facilitation	Ch. 7
3. Complex Interactions A. Food webs, trophic cascades and complex interactions	Ch. 6
B. Indirect effects	Ch. 8
4. Spatial dynamics, island biogeography & metacommunities	Ch. 11
5. Disturbance and succession	Ch. 13
6. Causes & consequences of biodiversity patterns, community stability & productivity	Ch. 12
7. Species invasion and community assembly	Ch. 9, 10
8. Current Issues, applications & future directions in community ecology	Ch. 14

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/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

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. In order to access AES programs and supports, students must follow AES policy and procedures. For more information, check www.students.usask.ca/aes, 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

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 http://library.usask.ca/studentlearning/.

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 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, brining 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 in their international education experiences at the U of S and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students and their families in their transition to the U of S and Saskatoon. ISSAC offers advising and support on all matters that affect international students and their families and on all matters related to studying abroad. Please visit students.usask.ca for more information.

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, unless materials are designated as open education resources. 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 http://www.usask.ca/copyright/basics/copyright-policy/fair-dealing-guidelines/index.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 usask.ca/copyright where there is information for students available at http://www.usask.ca/copyright/students/rights/index.php, or contact the University's Copyright Coordinator at copyright.coordinator@usask.ca or 306-966-8817

Acknowledgements

This syllabus was modified by Shawna Pelech (January 2018), and based on previous course syllabi modified and/or written by Mélanie Jean, Emily Cavalier and Jill Johnstone.

Land Acknowledgement

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. We recognize that in the course of your studies you will spend time learning in other traditional territories and Métis homelands. We wish you safe, productive and respectful encounters in these places.

Information on literal descriptors for grading at the University of Saskatchewan can be found at: http://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://policies.usask.ca/policies/academic-affairs/academic-courses.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

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