

## BIOL 350.3 Q4 – Honours Field Course 2015

Course Title: Honours Field Course

Term: Q4

Course Code: BIOL 350

Course Credits: 3

Class Location: Off Campus - Christopher Lake, SK

Class time: Monday, August 17 to Friday August 28, 2015

Instructors: Dr. Dennis Lehmkuhl (966-4408; [dennis.lehmkuhl@usask.ca](mailto:dennis.lehmkuhl@usask.ca))  
and Mr. Scott Halpin (966-4493; [scott.halpin@usask.ca](mailto:scott.halpin@usask.ca))

### **Course Description**

Students will be challenged to apply the scientific method working in the field with natural environments, species, communities, and ecosystems as found in nature. Emma Lake provides a variety of habitats and systems, including lakes, rivers and forests. Informal lectures and discussion will provide a framework for fieldwork and projects. Emphasis will be placed on gaining an understanding of the challenges of field work, including identification of organisms, the problem of quantitative sampling vs. collecting, the search for patterns and processes in natural systems, and working with data and drawing conclusions. Conclusions will be presented and discussed in written and oral reports.

Prerequisites: 21 senior credit units BIOL, and restricted to students with minimum CWA of 70% overall and in Biology.

Note: This course is required in the Honours program in Biology. Enrolment is limited and priority will be given to students admitted to the Honours program in Biology. It is recommended that this course be completed after the third year of study.

### **Cost**

Additional fees - Accommodation and meal fee is \$600.00. This is based on a \$25/night fee based on shared student-rate accommodation. Payment will be automatically assessed on PAWS and attached to your student registration fees.

### **Accommodation and Meals:**

Kinasao is located near the town of Christopher Lake (see map). Cabins typically house 2-5 people and there is a separate building for showers and washrooms. This building also has washing machines, so you may wish to bring some laundry soap. There is a central dining facility on the lake shore. The food is excellent and there is sufficient choice if one is a vegetarian. If for some reason you require separate accommodations, please contact Scott or Joan (see below).

**\*You MUST bring a sleeping bag, pillowcase, towels and snacks for your stay.**

### **Special Arrangements and Organization**

Please let us know (Scott Halpin - 966-4493, Joan Virgl - 966-4400) if you have any specific needs or requirements that need to be arranged before the course. Also let us know if you plan to take your own vehicle. However, due to limited parking, we suggest that you avoid bringing a personal vehicle if at all possible.

**Meet in Rm 221** of the Biology building at 9:00 am on August 17<sup>th</sup>. Baggage can be taken to the loading dock at the rear of the building to be put on the van. (see map and directions Kinasao Camp, Christopher Lake) .

## Learning Outcomes

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

1. identify common species of plants, animals and invertebrates of forest and lake ecosystems in the boreal forest.
2. explain the terms "structure" and "function" as they pertain to terrestrial and aquatic ecosystems.
3. understand how to use equipment associated with ecosystem sampling.
4. apply principles of good experimental design and quantitative analysis to design a study project.
5. collaborate and communicate effectively with fellow students to complete group projects.

## Course Overview

The actual field work will involve:

1. The identification of local flora and fauna and some knowledge of their evolutionary adaptations. Students are assigned to develop a field key based on vegetative characteristics for 25 species of woody plants.
2. Study of several local systems, including a lake, a stream or river, and the forest. Trophic relationships (source of energy and energy pathways), biodiversity, and the biotic and non-biotic aspects of the systems will be emphasized. Specific areas of study will include general description of physical and community structure and identification of community members in several habitats. There will be quantitative sampling and methods compared. There will be benthos sampling in the littoral and open water areas of a lake, plankton sampling, river sampling, and forest sampling.

## Written Reports

A final report written by each student will be a comparison of the forest, lake, and flowing water ecosystems, especially regarding biodiversity, trophic structure and the biotic and abiotic features of the systems. Use Odum and Smith for concepts to be considered.

## Individual Project

Students will plan and conduct an individual or multi-person project which allows you to study areas of special interest. The projects should take approximately 3-4 days to complete and an oral report will be presented plus a written report will be handed in and made available to other class members.

Note: Notice in the schedule below that you will be introduced to plants, the forest, the lake, and flowing water within the first 4 days. This is so you will be better able to identify your area of greatest interest and for you to become aware of some of the problems and methods associated with studying that part of the ecosystem. For a project, you should aim to become an expert on some topic, and you might decide to focus at the level of biodiversity and species richness, and do an annotated collection, for example of insects, plankton organisms, non-flowering plants, soil organisms, or any other group. Or you might decide to go deeper into structure and function of the ecosystem, and identify and quantify trophic levels, food chains, species diversity, landscape ecology, species rank abundance, or any of a number of other aspects of ecosystems. This will require more thought and planning, and if you have any special interests, **you may wish to start planning now**. Or you might decide to focus on a single species- observing behaviour, activity, food habits, distribution, etc, for example for some bird, fish, insect, or plant. It will be a challenge to design, propose and complete a good project, but that is part of our goal in this course.



## **Grading Scheme**

- (a) Field notebook: 15%, you will be given instructions about how to make field notes at the beginning of the course.
- (b) Project Proposal: 10%, due Saturday August 22
- (c) Individual Projects 25% oral presentation and executive summary
- (d) Participation/Initiative 5%
  
- (e) Reports: 45% due Friday, August 28 or within 1 week, Sept. 4
  1. Key to vegetative characteristics of 25 plant species (**15%**) due Friday Aug 29
  2. Summary & abstract of what you learned about lakes, rivers, and the forest, compare and contrast community structure, energy flow, and food chains, using the attached material (Odum and Smith) as a guide. Eight to 10 pages is suggested, to be turned in on the last day of the course (August 31st, 2012) or within 1 week (**30%**) (see reports above).

**Late assignments are penalized by -10% per day including weekends.**

## **Integrity**

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](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](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](http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf)