Faculty of Science and Environment Studies
BIOL 4113 – Community Ecology WDE 2016

Online Learning - *access to a computer and reliable internet is required*

Material available Winter Term: January 4, 2016 – April 5, 2016

Instructor: Nancy Serediak

Virtual Office Hours: D2L online chat Tuesdays and Thursday 12:00 – 2:00 ET, with the
                 exception of January 25-29, 2016, or phone calls by appointment

Weighting: 0.5 FTE credit course

Primary reading and resources:
- Morin, Peter J. Community Ecology. First or Second Edition.
- Hillborn, Ray and Mangel, Mark.The Ecological Detective.
- D2L site: access from Lakehead University homepage

I. Rationale:
Community ecology is the study of species interactions in a particular time and place. It is a comprehensive approach to studying the ways in which biological assemblages affect each other as a function of structure, life strategy, physical environment, and change.

II. Course Aims and Outcomes:

Aims
This course will help students to consider species in the context of their interactions or dependencies with each other and their environment. It will encourage critical thinking about how communities are measured and assessed in a format applicable to communities in general, whether they be bacteria, mammals, birds, plants or lake food webs.

Specific Learning Outcomes:

By the end of this course, students will:

- understand what makes up a community
- appreciate the interrelatedness of biotic and abiotic community components
- recognize fundamental theoretical process models
- begin to link models to data
- have an appreciation for inherent difficulties in collecting ecological data
- have downloaded and run prepared script using R statistical software
- have a basic understanding of how to design a management plan using available data
- recognize the limitations of management plans
- be an honorary ecological detective

III. Format and Procedures:

Please expect to spend two hours per week on core material, and an additional two hours on required reading and/or assignments. As well, there will be a requirement for you to collect,

record and submit your own physical data over an eight week period. Most D2L content will be locked at the beginning of the course. As you progress through the material and complete tasks, subsequent sections will unlock, either by date or as earned. There are readings, assignments, quizzes and a project for this course, but no midterm or final exam. Participation is tracked by the online learning system (D2L), and respectful dialogues is expected in all interactions; for any additional clarity on respectful exchange, please refer to Lakehead University policy in the Academic Calendar, available online.

Unlocked core material (lecture material, readings) will be available until midnight EST on Tuesday, April 5, 2016. Instructions for material that requires submission will only be available for a prescribed time period. The opportunity to attempt finishing all material immediately prior to end of term will be unavailable. However, some material may be finished as soon as prerequisite work has been completed. To condense: you can work ahead on some things, but you won't be able to do everything at the last minute before the course ends.

IV. My Assumptions

Since this is a senior undergraduate course, the assumption is that you have taken an introductory ecology course, an evolutionary biology course, and have a general understanding of the scientific method, statistics and basic calculus. However, do not panic - there are no prerequisites specified for this course, and all of this material will be reviewed. A commitment and willingness to learn is all that is truly required. The goal is to have you leave with an understanding of how communities function, expose you to typical theoretical models, and provide you with tools for asking (and hopefully answering) ecological questions regardless of the community of interest, tempered with the understanding that we are often missing information.

V. Marks

Quizzes from required readings (5)	20%
Assignments (5)	50%
Final Project (1)	25%
Participation	5%

All material will be submitted within the D2L class site. The reading Q&A's will be in quiz format. Each quiz will unlock after the reading assignment has opened (and hopefully been read). There will be a time limit for each quiz, although it will be generous. However, once a quiz is started, it must be finished in one sitting. A grading rubric will be associated with each assignment to guide effort, as well as for the final project. The final project will also require you to have measured a physical metric for eight weeks and regularly uploaded your data. Other community data will be then be provided,and you will analyze the data, interpret your results, and develop a management plan for your community.

You will complete some analyses using R statistical software. The script for running analyses will be provided – do not fear, this is not a coding course! However, R is becoming so prevalent that a gentle exposure to it now will make you less afraid of it in the future. If R gurus exist in the class, seek them out in the site chat room if you are nervous. Clear instructions for downloading RStudio will be provided, as well as how to copy, paste and execute script. Be bold!

General Course Outline

Week of:	Topic	Work due	Project data upload
January 4	Community structure and patterns	Quiz 1	
January 11		Assignment 1	Week 1
January 18		Quiz 2	Week 2
January 25		Assignment 2	Week 3
February 1	Ecological metrics	Quiz 3	Week 4
February 8		Assignment 3	Week 5
February 15	Study break – no classes this week		
February 22	Ecological metrics	Quiz 4	Week 6
February 29		Assignment 4	Week 7
March 7	Ecological applications and management of communities	Quiz 5	Week 8
March 14		Assignment 5	
March 21			
March 28			
April 4	No new course material this week	Final project due	