Concordia University

FIELD ECOLOGY (BIOL 451)

Course Outline

SEMESTER	**FALL 2016**
DAY / TIME	**MONDAY: 11:45-13:00**
TUTORIALS	**WED/FRI: 8:45-10:00**
COMPUTER ROOM	**CC-203**
INSTRUCTOR	**Jean-Philippe (JP) Lessard**
OFFICE	**LOY – SP437.09**
TEL	**(514) 848 2424 ext. 5184**
EMAIL	**jp.lessard@concordia.ca**
TEACHING ASSISTANT	**Javier Ibarra**
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COURSE DESCRIPTION

This course is designed to give students practical experience working in field-based community ecology. It involves one week of fieldwork in late summer, followed by weekly meetings during the fall semester. Students learn about sampling methods, experimental design, taxonomic identification and statistical tools with the aim of estimating and comparing patterns of biological diversity. Students will design and implement their own short study in the field. In the weekly meetings, students will learn about and perform ecological statistics. They will also write a report. Students reside in a field station during field-based portion of the course. They are expected to cover the cost of room and board, and other necessary fees. The location and cost of the fieldwork may change from year to year. Interested students must contact the instructor to obtain detailed information. **Prerequisite**: BIOL 322 or equivalent, BIOL 353.

REQUIRED TEXT

None.

SUGGESTED READINGS

- Ellison AM, Gotelli NJ. 2013. A Primer of Ecological Statistics. Sinauer, Sunderland, Massachusetts, USA
- Magurran AE. 2003. Measuring Biological Diversity. Wiley-Blackwell, Oxford, UK. (available on Google)

FIELDWORK
The field portion of the course will run the week before the beginning of the fall semester, from Saturday, August 27th to Sunday September 4th, 2015, and will be based at the Forêt Montmorency field station, located north of Québec City, and owned and managed by Université Laval. Generally, the days will be spent working in the field and the evenings will be spent working in the lab and on your computers.

CLASSROOM
We will meet every Monday (11:45-13:00) of the fall semester in room CJ 1.129 on Loyola Campus. You are also expected to take advantage of open computer access (tutorials) to practice statistical techniques learned in the lecture and to complete assignments. The first few weeks will be focused on learning basic statistics for biodiversity science. There will be brief presentations of theoretical concepts behind ecological statistics followed by application of statistical tools to real data. Students will learn techniques in species richness estimations, rarefaction, species indicator analyses and basic statistical analyses of biodiversity data.

EVALUATION
Lab assignments: 20%
Final report: 80%

Most of the grade will be based on the final report (80%). The final report will be written and formatted as a scientific paper that could be submitted to a proper scientific journal. It will be based on data, analyses and results obtained from the students' own individual projects. These individual projects will be designed and implemented in the final days of the field portion of the course. There will also be four assignments given to students during the classroom portion of the course (20%).

GRADING SCHEME
A+>90, A=85-89, A-=80-84, B+=77-79, B=73-76, B-=70-72, C+=67-69, C=63-66, C-=60-62, D+=57-59, D=53-56, D-=50-52, F<50

OFFICE HOURS
I do not have fixed office hours. If you need clarifications on the material covered during lectures, I strongly encourage you to come see me immediately after class. You may also schedule an appointment with me via e-mail. If you do so, please suggest a specific day and time (even better if you can suggest a few options).

TENTATIVE SCHEDULE (subject to change during the semester – some topics might not be covered and others might be expanded)

DATE	L#	TOPIC
27 Aug to 4 Sept		Fieldwork at Forêt Montmorency
05-Sep		Labour Day
12-Sep	L1	Describing communities: Diversity Metrics
19-Sep	L2	Estimating diversity: Species Richness Estimation, Rarefaction
26-Sep	L3	Diversity along environmental gradients: Regression Analyses
03-Oct	L4	Diversity between habitats: ANOVA
10-Oct		Thanksgiving Day
17-Oct	L5	How to write a scientific paper I
24-Oct	L6	How to write a scientific paper II
31-Oct		Work on your paper
07-Nov		Work on your paper
14-Nov		Work on your paper
21-Nov		Work on your paper
28-Nov		Work on your paper
05-Dec		Paper to be submitted to TA by midnight