

FIELD TECHNIQUES IN ECOLOGY & CONSERVATION

Pymatuning Laboratory of Ecology

Summer 2014 - Syllabus

INSTRUCTOR: [Dr. Joe Townsend, IUP](#)

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COURSE OVERVIEW

This course introduces students to a variety of field and research techniques used in ecology and conservation professions, including sampling and experimental design, basic orienteering skills, and sampling methods in forests, fields, and aquatic habitats.

OUTCOMES

Students who complete this course should be able to:

- 1) Design an appropriate scheme for sampling populations, communities, and habitats in the field to answer specific questions.
- 2) Select and implement the most appropriate sampling methods to meet the objectives of the sampling and study design.
- 3) Understand the field implementation of a variety of sampling methods used in ecology and conservation.

COURSE CONTENT

- 1) Making and recording observations in the field
- 2) Sampling design & experimental design, set up projects
- 3) Presentation of proposals
- 4) Terrestrial sampling – plants, inverts, and herps
- 5) Sampling small and medium mammals and birds
- 6) Sampling aquatic habitats
- 7) Presentation of projects

COURSE REQUIREMENTS

- 1) Required texts and other readings
There will be a variety of scientific articles and technical reports.
- 2) Weekly assignments
Each student will be assigned to write one blog entry per week that relates the student's personal experiences during the class. This entry should be 1-3 paragraphs in length, will be assigned to the student at the end of the day, and will be due before class the next morning.
- 3) Papers/projects (number, type, length and deadlines)
A final project will be presented based on a field study designed, conducted, and analyzed by the students. Students will give an oral presentation and submit a written project report ca. 10 pages in length. These are due on the last class day.
- 4) Approximate time spent outside of class
Students will need to spend at least 2 hours each day outside of class preparing assignments.
- 5) Grading Policy:
Late work will not be accepted and there will be no make ups. In case of a bona-fide medical excuse, an assignment will be dropped.

TENTATIVE SCHEDULE

<u>Date</u>	<u>Day</u>	<u>Topic</u>	<u>Location</u>	<u>Assessment (Due morning of class)</u>
WEEK 1				
14-Jul-14	Monday	PLE Introduction (Dr. Relyea); Instructor and Course Intro; Student Intro Session; Field Observations Exercise	PLE Lab site	
15-Jul-14	Tuesday	<u>Classroom</u> : Designing a field study; Intro to GPS; <u>Field</u> : Point-Quarter method	PLE Lab site Wallace Woods Tryon-Weber	Field Observation report (5)
16-Jul-14	Wednesday	Stream sampling; Overview of aquatic sampling strategies (aquatic inverts, fishes, herps);	Wallace Woods Tryon-Weber	"Why am I here?" blog entry (5)
17-Jul-14	Thursday	Research Project teams formed; on-site project development; Overview of terrestrial sampling strategies	Wallace Woods Tryon-Weber	
18-Jul-14	Friday	<u>AM</u> : Independent Group Work – Developing a proposal for research study, presentation; <u>PM</u> : PA State Fish Hatchery presentation and tour (Rob Brown, PA Fish & Boat Commission)	PLE Lab site/Library State Fish Hatchery	<u>Group</u> : Five Research Questions (10) End of Week 1 Blog (5)
WEEK 2				
21-Jul-14	Monday	<u>Classroom</u> : Project proposal presentations, revisions; preparations for sampling; <u>Field</u> : Project set-up and sampling	PLE Lab site Wallace Woods	Research proposal (10); presentation (10)
22-Jul-14	Tuesday	Project work	Wallace Woods Tryon-Weber	
23-Jul-14	Wednesday	Project work	Wallace Woods Tryon-Weber	
24-Jul-14	Thursday	Lakes and islands (Brian Pilarcik, Crawford Co. Conservation District)	Pymatuning Lake	
25-Jul-14	Friday	<u>AM</u> : Hellbender survey methods (Tim Hummel, IUP grad student); <u>PM</u> : Project work	French Creek Wallace Woods Tryon-Weber	Preliminary project report (10) due by end of day
WEEK 3				
28-Jul-14	Monday	<u>Classroom</u> : Overview of small and meso mammal and bird sampling; <u>Field</u> : bird mist netting; setting overnight mammal traps; Project work wrap-up	PLE Lab site Wallace Woods Tryon-Weber	
29-Jul-14	Tuesday	Check mammal traps; visit Livingston Lab; Project break-down; set mammal traps again overnight	Livingston Lab Wallace Woods Tryon-Weber	
30-Jul-14	Wednesday	Lakes and islands; Tom Ridge Environmental Center (Dr. Jeanette Schnars, Regional Science Consortium)	Presque Isle	
31-Jul-14	Thursday	Final Project Work	PLE Lab site	
1-Aug-14	Friday	Presentation day, wrap up activity	PLE Lab site	Final project paper (20) Presentation (10) Peer Evaluations (5)
				TOTAL (100)