



## Syllabus

### BIO 221L Principles of Terrestrial and Aquatic Ecology Lab

#### General Information

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**Date** September 13th, 2023

**Author** Robert Wink

**Department** Science and Technology

**Course Prefix** BIO

**Course Number** 221L

**Course Title** Principles of Terrestrial and Aquatic Ecology Lab

**Dual Listing (also listed as):** CON 202L

#### Course Information

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**Catalog Description** In this hands-on laboratory-based course, students will have the opportunity to conduct studies and perform experiments that enrich their knowledge and understanding of the scientific concepts learned in the lecture portion of CON 202/BIO 221 Principles of Terrestrial/Aquatic Ecology. Laboratory exercises will include a combination of field trips and observational and experimental studies as well as in-classes exercises aimed at preparing students for upper level coursework in the field of ecology (e.g. reading scientific papers, presenting data, interpreting graphs).

**Credit Hours** 1

**Lecture Contact Hours** 0

**Lab Contact Hours** 2

**Other Contact Hours** 0

**Grading Scheme** Letter

#### Prerequisites

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CON 202/BIO 221 Principles of Terrestrial and Aquatic Ecology AND BIO 122 General Biology II OR BIO 125 Foundations of Life Science; minimum grade C -

#### Co-requisites

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CON 202/BIO 221

## First Year Experience/Capstone Designation

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This course **DOES NOT** satisfy the outcomes applicable for status as a FYE or Capstone.

## SUNY General Education

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This course is designated as satisfying a requirement in the following SUNY Gen Ed categories

None

## FLCC Values

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**Institutional Learning Outcomes Addressed by the Course**

None

## Course Learning Outcomes

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### Course Learning Outcomes

1. Exercise the steps of scientific method from the initial stages of collecting observations, to building hypotheses and analyzing results
2. Review, interpret, evaluate, and analyze peer-reviewed scientific studies that are related to laboratory exercises
3. Execute standard ecological sampling procedures, calculate and analyze data, and compare these results to those published in peer-reviewed, scientific papers

## Outline of Topics Covered

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### I. Population Ecology

- a. Population Dynamic Studies (e.g. life history / cohort tables, mark-recapture experiments, dendrochronology studies, intra-specific competition experiments)

### II. Community Ecology

- a. Field Sampling of Different Communities
- b. Species Interaction Experiments (e.g. interspecific competition experiments, predator-prey studies)
- c. Species Richness / Biodiversity Sampling

### III. Ecosystem Ecology

- a. Biogeochemical Studies (e.g. carbon flow experiments, nutrient cycling studies)