

Fall 2018

BIOL 206-001-107: Foundations in Biology: Ecology & Evolution Lab

John Yarotsky

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BIOL 206 (001-107): Foundations in Biology: Ecology & Evolution LAB

COORDINATOR: Dr. John Yarotsky

INSTRUCTOR:

By Appointment Only(Email)

OFFICE HOURS:

OFFICE: 340C Central King Bldg.

COURSE WEBSITE: <http://moodle.njit.edu/>

OFFICE HOURS: By Appointment Only

COURSE SCHEDULE: Sections [001-107](#)

EMAIL: yarotsky@njit.edu

LOCATION: CKB: 328

DESCRIPTION:

This course is the laboratory component of Foundations in Biology: Ecology and Evolution. You **MUST** be registered for the lectures (Biology 205) to take the lab. The labs are designed to complement and elaborate upon concepts learned in the lecture, to give you hands-on experience making observations and gathering data, and to introduce you to common procedures and analyses used in the study of ecology and evolution.

PREREQUISITES:

BIOL 200: Concepts in Biology and current registration in BIOL 205.

TEXT AND COURSE WEB PAGE:

There is no textbook for this lab. All lab materials will be posted on the course website. We will use [Moodle](#) in this course. To use Moodle students must have an NJIT UCID. If you are matriculated at NJIT you should already have a UCID. If you are a Rutgers student you can request one here <https://newacct.njit.edu/~accts/cgi-bin/new> or call the NJIT helpdesk for assistance (973-596-2900).

LAB PREPARATION:

For each lab, a lab handout and a lab worksheet will be posted on the course website by Friday morning of the previous week. Please read through both of these files thoroughly before coming to lab, and be sure to bring a print-out of BOTH files to each lab. Note that for some labs, you will need to bring handouts and worksheets for two labs. Please [obtain a 3-ring binder](#) to keep your lab handouts and worksheets organized into a lab notebook.

LEARNING OUTCOMES

- 1.) Explain how laboratory activities illustrate lecture concepts.
- 2.) Use evidence to support scientific conclusions.
- 3.) Research topics using electronic and print sources and attribute sources properly.
- 4.) Design and carry out an experiment to test a scientific question.
- 5.) Analyze and interpret scientific data using a t-test.
- 6.) Communicate scientific results in written format.

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COURSE GRADE:

Your grade for lab will be determined based on quizzes, Moodle assignments, and one written lab report:

- **Quizzes:** You will begin each lab with a quiz. Students arriving late to lab will not be permitted to take the quiz. Make sure you read the lab handout before coming to lab so you're prepared! The quizzes will focus on the current week's lab and will also include some review from previous weeks.
- **Assignments:** Each week, complete the worksheet that accompanies your lab handout. Some of it will be completed during the lab; often, there are analyses or interpretive questions that you'll need to complete on your own time **Refer to your completed worksheet to complete each lab's Moodle assignment, which will be open for one week after the lab is completed (see schedule above). You will have the opportunity to complete the Moodle assignment twice. You DO NOT need to take it twice! If you are happy with your first score you may simply not take it a second time. If you take it twice the highest score of the two grades will count.** Please note that while you usually work in groups during the lab and will share data and discuss results with your group, your worksheet and other parts of the assignment must be your own work.
- **Lab Report:** You will design a plant experiment and report the results in a full lab report in the style of a scientific publication. Failure to turn in either section of the draft will result in a loss of 25 points. Each person will write their own lab report. Sharing any information other than the raw data is plagiarism and will result in a zero for the assignment. Failure to turn in a draft on time will result in a loss of up to 25 points. Each day that the Draft and Final Report are late will result in a 10% penalty.

POINT BREAKDOWN		
Quizzes:	15 pts per week =	180 points
Assignments:	15 pts per lab =	180 points
Lab Report:	=	100 points
Total	=	460 Points

GRADING SCALE			
A	89.5-100%	C	69.5-76.4%
B+	86.5-89.4%	D	59.5-69.4%
B	79.5-86.4%	F	59.4%-0%
C+	76.5-79.4%		

- **Attendance, Make-Up, and Lateness Policy:** Attendance at every lab is **required** and necessary to earn a good grade in lab. If you must miss lab for a valid reason you must bring documentation to the Office of the Dean of Student Affairs and arrangements can be made to allow you to take the quiz for that week but you will still be unable to carry out the lab activities. You **MUST** let your TA know if you want to make-up a missed lab
- **Academic Dishonesty:** The course has a zero tolerance policy for academic dishonesty, including plagiarism and cheating. Instances of dishonesty will be punished by a zero on the assignment and consultation with the office of the Dean of Students to determine if further action is required. If you have any questions about what constitutes plagiarism or cheating, please ask your TA or refer to the academic integrity code [NJIT Academic Integrity Code](#).

LAB SAFETY: General safety precautions:

- **No eating or drinking in the lab. No Water Bottles!**
- Wear closed-toed shoes to lab.
- Follow the directions for lab procedures and ask your TA if you're unsure about how to operate any equipment.
- Keep an organized workspace and label all materials.

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- Your lab handouts and your TA will alert you to safety concerns specific to a particular lab.

NOTE: You should notify your TA immediately of any injuries, spills, or broken equipment.

LAB SCHEDULE:

WEEK OF	LECTURE TOPIC	ASSIGNMENT DUE	NOTES
Sept. 3	NO LABS		
Sept. 10	Lab 1: Variation and Statistics		Last Day to Add/Drop 9/10
Sept. 17	Lab 2: Genetic Change in Model Populations	Lab 1 DUE	
Sept. 24	Lab 3: Computer Simulation: Darwinian Snails	Lab 2 DUE	
Oct. 1	Lab 4: Plant Species Identification	Lab 3 DUE	
Oct. 8	Lab 5: Computer Simulation: Isle Royale Lab 10: Competition [Week 1] ▪ Begin Your Plant Experiment	Lab 4 DUE	
Oct. 15	Lab 6: How to Write a Lab Report	Lab 5 DUE	
Oct. 22	Lab 7: Island Biogeography	Lab 6 DUE	
Oct. 29	Lab 8: DNA Barcoding and Extraction [Week 1] Lab 10: Competition [Week 2] ▪ End Experiments	Lab 7 DUE	
Nov. 5	Lab 8: DNA Barcoding and Extraction [Week 2] Lab 9: Constructing a Phylogeny [Week 1] Lab 10: Competition [Week 3]	Lab 8 DUE ► Lab Report DRAFT DUE	
Nov. 12	Lab 9: Constructing a Phylogeny [Week 2] Lab 11: Mark-Recapture	Lab 10 DUE	
Nov. 19	NO LABS	Lab 11 DUE	THANKSGIVING 11/22/18
Nov. 26	Lab 12: Ecological Footprint	Lab 9 DUE	
Dec. 3	NO LABS	Lab 12 DUE ► FINAL LAB REPORT DUE	
Dec. 10	NO LABS	Last week of classes: NO LABS	
FINAL EXAM WEEK: DECEMBER 15-21, 2018			