

Principles of Biology
01:119:103
Fall 2022 (4 credits)

CONTACT INFORMATION:

Instructor(s): Dr. Suzanne Sukhdeo
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COURSE WEBSITE, RESOURCES AND MATERIALS:

- CANVAS

CORE CURRICULUM LEARNING GOALS: Natural Sciences [NS]

Understand and apply basic principles and concepts in the physical or biological sciences. Explain and be able to assess the relationship among assumptions, method, evidence, arguments, and theory in scientific analysis.

COURSE LEARNING GOALS:

- 1) Ability to observe and describe nature accurately.
- 2) Ability to apply the scientific method: observe a problem, collect data, use deductive reasoning to explain the outcome of the experiment and to make predictions.
- 3) Ability to apply problem-solving to learning.
- 4) Ability to apply quantitative reasoning to biological questions.

COURSE OVERVIEW:

The purpose of this course is to introduce the biological world. It is intended that students completing this course will have knowledge of the biological world and the ability to understand material written for a non-scientific audience in any area of biology. It included a laboratory, many of which are outside, to expose students to biology in a hands-on manner.

Topics include:

Evolution – natural selection

Ecology – population and community ecology and animal diversity

Plant biology – structure/function, reproduction and photosynthesis/respiration

Genetics – mitosis/meiosis and cell development

Cell cycle – unicellular animal and plant cells

Human Physiology – nervous, endocrine, cardiovascular & digestion systems

ASSIGNMENTS/RESPONSIBILITIES Lecture Grading:

Quizzes (9)	~180*
Midterm 1	100
Midterm 2	100
Final (not cumulative)	100
Lab	685
Total	~1165*†

***The number of quiz points are subject to change.**

†Please NOTE, there is NO extra credit.

Lab Grading:

Attendance = 9 @ 5 points each	45
Assignments/Collaborations = 9 @ 50 points each	450
Homework =5 @ 20 points each	100
Quizzes = 3 @ 30 points each	90
Total	685

Note: Three unexcused absence from lab is an automatic FAIL for the entire course!

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Please follow the procedures outlined at <https://ods.rutgers.edu/students/registration-form> Full policies and procedures are at <https://ods.rutgers.edu/>

ABSENCE POLICY

Students are expected to attend all classes; if you expect to miss one or two classes, please use the University absence reporting website <https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence.

There is NO need to fill out the absence reports. I do not get any notification. You are totally responsible for all the lecture material for any quizzes or exams.

ACADEMIC INTEGRITY

The university's policy on Academic Integrity is available at <http://academicintegrity.rutgers.edu/academic-integrity-policy>. The principles of academic integrity require that a student:

- properly acknowledge and cite all use of the ideas, results, or words of others.
- properly acknowledge all contributors to a given piece of work.
- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that

- everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- all student work is fairly evaluated and no student has an inappropriate advantage over others.
- the academic and ethical development of all students is fostered.
- the reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

STUDENT WELLNESS SERVICES

Just In Case Web App <http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that

include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation:

<https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

Scarlet Listeners

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.

Lecture Schedule Fall 2022

DATE	LEC	TOPIC**	Assessment
9/8	1	Introduction & Evolution	
9/12	2	Natural Selection	
9/15	3	Microevolutionary mechanisms	Lec quiz 1
9/19	4	Phylogenetic trees	
9/22	5	Population Ecology	Lec quiz 2
9/26	6	Biomes	
9/29	7	Communities Ecology	Lec quiz 3
10/3	8	Mitosis	
10/6	9	Meiosis & Genetics	Lec quiz 4
10/10	10	The Cell	
10/13	MIDTERM I (LECTURES 2-9)		
10/17	11	Plant Structures I	
10/20	12	Plant Structures II	Lec quiz 5
10/24	13	Photosynthesis & Respiration	
10/27	14	Animal Domestication	Lec quiz 6
10/31	15	Animal Diversity I	
11/3	16	Animal Diversity II	Lec quiz 7
11/7	17	General Body Cell Types	
11/10	18	Nervous System & Sensory System	Lec quiz 8
11/14	MIDTERM II (LECTURES 10-17)		
11/17	19	Brain	
11/21	20	Digestion	
11/22	21	Immune System I	
11/28	22	Immune System II	
12/1	23	Bacteria & Viruses I	Lec quiz 9
12/5	24	Bacteria & Viruses II	
12/8	25	Endocrinology	Lec quiz 10
12/12	26	Last lecture	
12/XX	FINAL EXAM (LECTURES 18-26) TBA		

****Lecture topics are subject to change**

LABORATORY SCHEDULE

Fall 2022

LAB	WEEK OF	TITLE	Homework/Quiz
1	Sept. 13-15	Natural Selection & Phylogenetic tree	Homework 1 assigned
2	Sept. 20-22	Helyar Woods	Homework 1 due Homework 2 assigned
3	Sept. 27-29	Population Ecology	Homework 2 due
4	Oct. 4-6	DNA & Genetics	Homework 3 assigned Quiz 1 (Labs 1-3)
5	Oct. 11-13	Cook Greenhouse-Plant Diversity	Homework 3 due Homework 4 assigned
6	Oct. 18-20	Plant Structure & Photosynthesis	Homework 4 due
7	Oct. 25-27	Cook Farm Animals	Quiz 2 (Labs 4-6)
8	Nov. 1-3	Animal Diversity	Homework 5 assigned
9	Nov. 8-10	Nervous System & Senses	Homework 5 due
10	Nov. 15-17		Quiz 3 (Labs 7-9)