RUTGERS
School of Environmental and Biological Sciences

COURSE SYLLABUS

ENVIRONMENTAL BIOLOGY

11:375:201
Fall, 3 credits

Class Meets: 2 – 80 min lectures each week (in person)
Location: Cook Campus

Instructors:
Dr. Jeffra Schaefer
Office: Room 356, Environmental & Natural Resource Sciences Building (ENR)
Email: **jschaefer@envsci.rutgers.edu** (include "201 Env Bio" in subject line)
Office Hours: email for appointment.

Dr. Donna Fennell
Office: Room 234, Environmental & Natural Resource Sciences Building (ENR)
Email: **fennell@envsci.rutgers.edu** (include "201 Env Bio" in subject line)
Office Hours: email for appointment.

Textbook: There is no textbook in this course.
Canvas: All course materials are on Canvas: canvas.rutgers.edu

Environmental Sciences Learning Goals:
This class will contribute toward students' ability to:

1. apply knowledge, skills, and techniques from the sciences and mathematics to identify, characterize, and provide solutions to environmental problems
2. communicate technical information effectively (orally, in writing, and through electronic media)
3. function effectively on teams to accomplish collaborative tasks

Assignments & Assessments:

Three Exams	50%
Problem Sets (3 total, 20 points each)	25%
Collaborative Project	15%
Class Participation (Canvas and In-Class activities)	10%

Letter grades will be assigned using Rutgers grade scale: A ≥90%; B+ = 85.0 – 89.9%; B = 80.0 – 84.9%; C+ = 75.0 – 79.9%; C = 70.0 – 74.9%; D = 60.0 – 69.9%; F < 60%

Problem Sets:
There will be three problem sets assigned throughout the semester. Due dates for each on the Schedule and on Canvas. These must be uploaded to Canvas. If you have trouble uploading the document, a paper copy will be accepted but must be turned in to the instructor **during class time on the date it is due**.

Collaborative Project Presentations:
There will be one mandatory group project. Each student is required to present the project to a small group of their peers. The date of the presentation is clearly indicated on the class schedule and on Canvas. On-time attendance and in-class participation are mandatory. Please plan accordingly so you do not lose points unnecessarily. If you expect to be absent that day, notify the instructor immediately.

Participation Activities/Assignments:
A variety of activities and online assignments will be incorporated throughout the semester. These include assignments on Canvas and in-person activities. Attendance and participation is expected, and the assignments/activities will be graded.

Exams:
There will be 3 non-cumulative exams in this class. All exams are in class and are clearly indicated on the class schedule and on Canvas. Make-ups require a university-approved excuse or **prior** approval by the instructor.

Late Assignments and Make-Ups:
Meeting deadlines and completing assignments on time are important parts of this class. The Due Dates for all assignments are posted on Canvas. Make-ups (if allowed) will be deducted by 10% per day. Note that for some assignments, late work will not be accepted. These are clearly indicated in the instructions on Canvas. Accommodations will be made for students with a university-approved excuse. Please reach out the instructor as soon as possible, if this is the case. If you have a time conflict with one of the activities or exams, email the instructors immediately to see if any accommodation can be made. Note that accommodations for non-university-approved excuses are not guaranteed.

Absence Policy:
Attendance will occasionally be collected at the beginning of class. Students are expected to attend all classes **on-time**. If you are unable to attend class for any reason, reach out to a fellow student for lecture notes.

Accommodations for Students with Disabilities:
Students with a disability: please contact the instructor(s) immediately so that we may make any necessary arrangements to support a successful learning experience. For more information, please follow the procedures outlined at https://ods.rutgers.edu/ . Full policies and procedures are at https://ods.rutgers.edu/

Schedule:

Week	Topic
1	**Living Organisms and Cell Structure**
2	**Oxidation-Reduction Chemical Reactions** **Metabolism and Energy Generation**
3	**Populations, Communities, and Ecosystems** Case Study: Salt Marsh
4	**Biogeochemical Cycles**: Water and Carbon Cycles
5	**Biogeochemical Cycles**: Nitrogen, Phosphorus & Sulfur Case Study: Passion Puddle
6	**Environmental Pollution** – Organic Contamination Biodegradation of Petroleum Constituents
7	**Environmental Pollution** – Metal Contamination (Arsenic & Mercury) Bioavailability, Bioaccumulation, & Biomagnification **Remediation of Environmental Contaminants:** Attenuation & Bioremediation
8	**Water Quality and Pollution** Waterborne Diseases Water Quality: Eutrophication, BOD/COD, coliforms and water quality standards
9	**Drinking Water and Municipal Wastewater Treatment** Microscope Activity of Activated Sludge (ENR 203 & 205)

10	**Environmental Toxicology:** Routes of Exposure, Health Impacts & Risk Assessment
11	**Environmental Toxicology:** Dose response & test methods Guest Lecture: Plastics and Pathogens in Urban Waters
12	**Environmental Toxicology:** Case Study: Endocrine disruptors (Atrazine; dioxins)
13	**Environmental Policy and a Role for Environmental Scientists, Engineers, and Citizens**
14	GROUP PRESENTATIONS