NJIT New Jersey Institute of Technology

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE

Environmental Biology:
Spring 2023 Course Syllabus

NJIT Academic Integrity Code: All Students should be aware that the Department of Chemistry & Environmental Science (CES) takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description:

This course introduces the essential concepts and principles of biological science and a ecological approach to understand human's impact and dependence on the natural environment. Broad topics include ecosystems, nutrient cycles, pollution, pest management, conservation of natural resources, energy, and human population, food, agriculture and water resources. The course applies the way of thinking of food-water-energy-ecosystem nexus through problem-based learning to solve real world challenges in sustainable development.

Number of Credits: 3

Prerequisites: EPS202 or Junior or Senior Standing

Course-Section and Instructors

Course-Section	Instructor
EVSC375 – 102	Zeyuan Qiu; Zeyuan.qiu@njit.edu; 973-596-5357

Office Hours for All Chemistry & Environmental Science Instructors: Fall 2019 Office Hours and Emails

Required Textbook:

Title	Environmental Biology
Author/Editor	Matthew R. Fisher
Edition	2019 Edition
Weblink	https://openoregon.pressbooks.pub/envirobiology/

Reference Book:

Salam, P.A., Shrestha, S., Pandey, V.P. and Anal, A.K. (2017). Water-Energy-Food Nexus: Principles and Practices. Wiley. Print ISBN: 978-1-119-24313-7

University-wide Withdrawal Date: The last day to withdraw with a **W** is Monday, April 3, 2023. It will be strictly enforced.

Learning Outcomes:

- To enhance students' understanding of the complex and dynamic interrelationships between biological science and the natural and built environments.
- To understand and measure the ecosystem services
- To solve real world sustainability problems by applying the way of thinking of water-energy-food nexus and quantification tools
- To empower students with critical thinking skills in understanding the impacts of humans on natural environments to pursue successful careers in environmental science and engineering.

POLICIES

All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Class Activity Participation	10%
Assignments	20%
Midterm Exam	30%
Group Project	40%

Your final letter grade in this course will be based on the following tentative curve:

A	90% above	**C**	70-75%
B+	85-90%	**D**	60-70%
B	80-85%	**F**	Below 60%
C+	75-80%		

Attendance Policy: Attendance at classes will be recorded and is **mandatory**. Each class is a learning experience that cannot be replicated through simply "getting the notes."

Class Activity Participation (10%): This course is taught using a problem-based learning strategy. The attendance and participation are critical to achieving the learning outcomes. There are significant amounts of activities that are arranged for the students to engage and learn.

Weekly Assignments (20%): There are weekly assignments on the topics being discussed weekly before the midterm. The assignment will be submitted online on time. **The score for late submission will be deducted 5% a day until the maximum deduction of 50%. All missing assignments will be given a score of zero. One assignment with the lowest score will be dropped out in calculating your final score to account for various reasons that results in such low scores: sickness, tardiness, and any other excuses.**

Midterm Exams (30%): There will only be one exam: a midterm in the eighth week of the semester. The midterm will cover the materials from the first week to the seventh week of the semester.

Group Project (40%): The class will be divided into different groups and each group is comprised of TWO or THREE students. Each group will learn how to critically identify a particular issue in sustainable development, develop a comprehensive understanding of the issue and apply a quantitative method to provide the understanding and/or solutions to the issue. The group project will be evaluated through a sequence of class activities throughout the second half of the semester such as topic selection and problem identification, quantitative modeling exercises and result presentation, project draft report, draft peer-review report, project

report and presentation.

Makeup Exam Policy: There will normally be **NO MAKE-UP ASSIGNMENTS, QUIZZES OR EXAMS** during the semester. In the event that a student has a legitimate reason for missing a quiz or exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the CES Department Office/Instructor that the exam will be missed so that appropriate steps can be taken to make up the grade.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all class times. Such devices must be stowed in bags during exams or quizzes.

ADDITIONAL RESOURCES

Course Website: The detailed reading list, weekly assignments and additional materials are provided in the course website at http://canvas.njit.edu/, which can be accessed using your NJIT UCID.

Accommodation of Disabilities: Office of Accessibility Resources and Services (***formerly known as Disability Support Services***) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Scott Janz, Associate Director at the Office of Accessibility Resources and Services at 973-596-5417 or via email at spj6@njit.edu. The office is located in Kupfrian Hall 201. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support services provided please visit the Accessibility Resources and Services (OARS) website at:

- http://www5.njit.edu/studentsuccess/disability-support-services/

Important Dates See: Spring 2023 Academic Calendar, Registrar

https://www.njit.edu/registrar/calendars

Date	Day	Event
January 17	T	First Day of Classes
January 21	S	Saturday Classes Begin
January 23	M	Last Day to Add/Drop a Class Last Day for 100% Refund, Full or Partial Withdrawal
January 24	T	W Grades Posted for Course Withdrawals
January 30	M	Last Day for 90% Refund, Full or Partial Withdrawal No Refund for Partial Withdrawal after this date
February 13	M	Last Day for 50% Refund, Full Withdrawal
March 6	M	Last Day for 25% Refund, Full Withdrawal
March 13	M	Spring Recess Begins
March 18	S	Spring Recess Ends
April 3	M	Last Day to Withdraw
April 7	F	Good Friday – No Class
May 2	T	Friday Classes Meet

May 2	T	Last Day of Classes
May 3	W	Reading Day 1
May 4	Th	Reading Day 2
May 5	F	Final Exams Begin
May 11	Th	Final Exams End
May 13	Sa	Final Grades Due

Course Outline

Lecture	Section	T	Assignment
1	1/18	Introduction	Assignment 1
2	1/25	Environmental Biology: Essential Concepts	Assignment 2
3	2/1	Biogeochemical Cycles	Assignment 3
4	2/8	Ecosystems and Ecosystem Services	Assignment 4
5	2/15	Water-energy-food nexus: Focus on Water	Assignment 5 / Group assignment
6	2/22	Water-energy-food nexus: Focus on Energy	Assignment 6
7	3/1	Water-energy-food nexus: Focus on Food	Assignment 7
8	3/8	Case Studies and Midterm Review	Group project: Topic Selection
	3/15	*Spring Recess*	
9	3/22	Midterm	Group project: Introduction and Objectives
10	3/29	Quantify disruption of biogeochemical cycles	Group project: Draft Report
11	4/5	Quantify ecosystem services	Group project review and presentation
12	4/12	Quantify water-energy-food nexus	Group project: Peer Review Report
13	4/19	Assessments and applications	Group project: Presentation File Upload
14	4/26	Group Project Presentation	Group Project: Final Report
15	5/10	Final Group Project Report Due	