

## Energy and Environment

### EVSC 325

### Syllabus Spring 2024

**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.

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#### **COURSE INFORMATION:** *Lecture*

##### **Course Description and Objectives Summary:**

The course is a study about energy production and use, and the resulting climate and other environmental impacts.

The class will examine:

- International and national energy production and usage trends
- Primary forms of energy production: coal, oil, natural gas, nuclear and renewable energy (solar, offshore wind and renewable natural gas)
- Transmission, distribution, and electric utilities
- New Jersey energy programs
- Energy and climate policies
- Microgrids, energy storage and fuel cells
- Energy efficiency
- Electric vehicles
- Building electrification, including geothermal
- Transportation electrification
- Energy storage
- Microgrids
- Waste to energy
- Fuel cells
- Climate change science, policy, and carbon pricing
- Climate resilience
- Sustainability
- Redeveloping landfills and brownfields with solar power
- Perspectives from industry and environmental groups
- The future of energy

**Number of Credits:** 3 Credits

**Prerequisites:** EVSC 125. Fundamentals of Environmental Sciences and CHEM 125: General Chemistry I

**Textbook:** All materials will be available on the class website.

### Course-Section and Instructors

Course-Section	Day	Lecture Time	Instructor
EVSC325	Thursday	6:00 PM - 8:50PM FMH 305	Dr. Xianyang Meng

**Office Hours:** 2:00 pm – 3:30 pm on Friday or by appointment

Dr. Meng's Webex space: <https://njit.webex.com/njit-en/j.php?MTID=m8709eb23b0f63ed12319be9a04f28398>

**University-wide Withdrawal Date:** The last day to withdraw with a **W** is Monday, April 1 2024. It will be strictly enforced.

### 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:

Assignments	12%
Quizzes	20%
Participation	8%
Midterm Exam	30%
Final Exam	30%

Participation: 0 to 8 points will be awarded by instructor, based on your attendance, quality and quantity of your work and discussion.

Exams: There will be two quizzes, a midterm exam and one final exam. Refer to the class website for exam dates and times.

Makeup Exam Policy: There will normally be NO MAKE-UP QUIZZES OR EXAMS during the semester. In the event that a student has a legitimate reason for missing a quiz or exam, the student must 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 instructor that the exam will be missed If a make-up is allowed.

Cellular Phones: All cellular phones must be silenced during class times.

Final Grade	Overall Academic Performance (100%)
A	Above 90
B+	85-89
B	80-84
C+	75-79
C	70-74
D	60-69
F	Below 60

### LEARNING OUTCOMES:

Student learners will:

- Understand baseline energy and environmental conditions.
- Understand the science and physics of energy.
- Understand how energy is produced and used, and its resulting environmental impacts.
- Understand the need to electrify everything, and the means to produce clean energy.
- Understand transportation electrification.
- Understand the several forms of climate resilience.
- Understand the gravity of climate change and their ability to address it
- Understand technological and policy solutions.
- Understand the institutions, politics, and people in the energy field.
- Understand that it is possible to build a career around solving the worlds greatest problems.
- Learn about the future of energy.

### ADDITIONAL RESOURCES

**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 need accommodations due to a disability, please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at **973-596-5417** or via email at [lyles@njit.edu](mailto:lyles@njit.edu). The office is in Fenster Hall Room 260. 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/studentuccess/disability-support-services/>