

## CHEN 5825 - Green Engineering

### Fall 2026 Syllabus, Section 01, CRN 43815,

Credit hours: 3

## Instructor

Zhuanzhuan Xie

Email: [zxie01@ysu.edu](mailto:zxie01@ysu.edu)

## Public Instructor Information

Instructor Title: Senior Lecturer

Instructor Professional Qualifications: Ph. D., Chemical Engineering, The University of Kansas, 2013

Instructor Office Location: Moser Hall 2068

Instructor Office Phone: 330-941-3019

## Course Description

5825. Green Engineering. Explore green engineering as a tool to drive sustainability. Prereq.: CHEN 2684 or Consent of the Instructor. 3 s.h.

## Course Readings

| Group    | Title                                                                    | Author                                                    | ISBN          |
|----------|--------------------------------------------------------------------------|-----------------------------------------------------------|---------------|
| Optional | Sustainable Engineering: Concepts, Design, and Case Studies              | David Allen and David Shonnard                            | 0132756544    |
| Optional | Green Engineering: Environmentally Conscious Design of Chemical Process  | David Allen and David Shonnard                            | 0130619086    |
| Optional | Living in the Environment                                                | G. Tyler Miller, Scott Spoolman                           | 9780357142202 |
| Optional | Life Cycle Assessment: Quantitative Approaches for Decisions That Matter | H. Scott Matthews, Chris Hendrickson, and Deanna Matthews | Ebook         |

Textbook is optional for this class. A list of books are recommended for better understanding of the subjects.

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

## Tentative Course Schedule

| Week of | Proposed Topic                     | Due/To Prepare for Class  |
|---------|------------------------------------|---------------------------|
| 8/24    | Current environmental issues       | Homework 1                |
| 8/31    | Environmental laws and regulations | Homework 2                |
| 9/7     | Nonrenewable energies              | No classes 9/7: Labor Day |
| 9/14    | Nonrenewable energies              | Homework 3                |
| 9/21    | Renewable energies                 | Homework 4                |
| 9/28    | Renewable energies                 | Project 1 Presentations   |
| 10/5    | Risk assessment                    | Homework 5                |
| 10/12   | Life cycle assessment              | Homework 6                |
| 10/19   | Life cycle assessment              | Homework 7                |
| 10/26   | Life cycle assessment              |                           |
| 11/2    | Life cycle assessment              | Project 2 Presentations   |
| 11/9    | Principles for green engineering   |                           |

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|-------|----------------------------------|----------------------------------|
| 11/16 | Principles for green engineering |                                  |
| 11/23 | Principles for green engineering | No classes: Thanksgiving Holiday |
| 11/30 | Principles for green engineering | Project 3 Presentations          |

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.