



# Syllabus: EVR 2001 Environmental Science

## Spring semester 2026

### Course Information

- **Course Number and Title:** EVR 2001 Environmental Science
- **Credit Hours:** 3 (3 lecture)
- **Current Academic Term:** Spring 2026

### Instructor Information

- **Instructor:** Dr. Xiaofan "Caleb" Xu
- **Office:** BARC-2257
- **Office Hours:** Monday/Wednesday/Friday, 10 – 11 AM
- **E-mail:** xxu@floridapoly.edu
- **Ways to Contact You:** Email or by appointment

### Course Details

- **Class Meeting Day, Time & Location:**
  - **Section 1:** Monday/Wednesday/Friday, 9 – 9:50 AM, Room IST-1060
- **Course Modality:** The learning sequence is as follows
  - Prepare for classes
  - Attend lecture classes and participate in active learning
  - Demonstrate skill acquisition by completing after-class assignments
  - Practice self-learning through term projects
  - Evaluate learning outcomes by exams
- **Official Catalog Course Description:** This course is a survey of basic chemical, biological, and physical principles of environmental science and their applications to environmental issues. This course is appropriate for students in a wide range of disciplines or programs.
  - **Course Prerequisites:** CHM 2045 - Chemistry 1 and CHM 2045L - Chemistry 1 Laboratory
  - **Communication/Computation Skills Requirement (6A-10.030):** No
- **Required Texts:** *Environmental Science*, 17<sup>th</sup> edition by G. Tyler Miller, Scott Spoolman, & Danielle Andrews-Brown, Cengage: Boston, MA, 2024, ISBN: 978-0357976319.
- **Equipment and Materials:** Canvas, Microsoft Office, calculator, FL Poly email
- **Course Objectives:** The objective of this course is to provide an introduction to an interdisciplinary concept and approach to exploring the environment that is comprised of both human and non-human elements. Students will apply critical thinking to the analysis and interpretation of environmental information and model output. Students will apply the scientific method to explain natural experiences and phenomena. Students will explain the basic chemical, biological, and physical principles of environmental science. Students will use empirical evidence to describe the historical and modern context of environmental problems and their solutions.
- **Course Learning Outcomes:**

Students who successfully complete this course should be able to:

  - a) Remembering: Recognize common environmental pollutants from human activities and identify their effects on the environment;
  - b) Understanding: Explain how the ecosystems provide humanity and biodiversity with a diverse array of ecological services;
  - c) Applying: Apply interdisciplinary approaches to evaluating and proposing solutions for environmental problems, taking into account the natural, social, technological, and political constraints;
  - d) Analyzing: Differentiate between non-renewable, exhaustible, and inexhaustible material and energy

resources, the physical and biological processes through which they are created, and associated environmental constraints;

- e) Evaluating: Discuss the complex and diverse relationships between humans and the environment from local to global scales and appraise environmental impacts of behaviors, choices, and activities in students' personal lives;
- f) Overall: Clearly communicate related concepts as they apply to current environmental issues through careful and organized work.

- **Alignment with Program Outcomes:**

Course Learning Outcome	Learning Level (Bloom's / ABET Assessment Example)	Program Learning Outcome (ABET, GenEd, Other)
a) Students will <u>recognize</u> common environmental pollutants from human activities and <u>identify</u> their effects on the environment.	<b>Knowledge</b> – ability to recall previously learned material <b>ABET Assessment</b> – assignments, quizzes, exams	ABET 1 – an ability to identify formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
b) Students will <u>explain</u> how the ecosystems provide humanity and biodiversity with a diverse array of ecological services.	<b>Knowledge</b> – ability to recall previously learned material <b>ABET Assessment</b> – assignments, exams	ABET 1 – an ability to identify formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
c) Students will <u>apply</u> interdisciplinary approaches to evaluating and proposing solutions for environmental problems, taking into account the natural, social, technological, and political constraints.	<b>Application</b> – ability to use learned material in new situations <b>ABET Assessment</b> – assignments, term projects	ABET 1 – an ability to identify formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
d) Students will <u>differentiate</u> between non-renewable, exhaustible, and inexhaustible material and energy resources, the physical and biological processes through which they are created, and associated environmental constraints.	<b>Comprehension</b> – ability to grasp meaning, explain, and restate ideas <b>ABET Assessment</b> – assignments, exams	ABET 7 – an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
e) Students will <u>discuss</u> the complex and diverse relationships between humans and the environment from local to global scales and <u>appraise</u> environmental impacts of behaviors, choices, and activities in students' personal lives.	<b>Comprehension</b> – ability to grasp meaning, explain, and restate ideas <b>ABET Assessment</b> – assignments, term projects	ABET 7 – an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.  ABET 4 – an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
f) Students will clearly <u>communicate</u> related concepts as they apply to current environmental issues through careful and organized work.	<b>Application</b> – ability to use learned material in new situations. <b>ABET Assessment</b> – term projects	ABET 3 – an ability to communicate effectively with a range of audiences.  ABET 5 – an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

## Course Policies

### Attendance

- Students in face-to-face courses are expected “to attend all of their scheduled University classes and to satisfy all academic objectives as defined by the instructor” (University Policy, FPU-5.0010AP). **Attendance is mandatory.**
- **A+ Attendance** will be used to track attendance. Falsifying attendance for yourself or for another student is an act of academic dishonesty and is considered a violation of the university's academic integrity policy.
- Attendance demonstrates your interest and seriousness as a student. If you should miss a class, you must inform the instructor **by email before the class and get approval**. Late email is not acceptable. Students must assume full responsibility for work missed when they are absent.
- Participation is a major component of this class. **Class discussions and project presentations** will be factored into participation.

## Participation

Students are expected to participate in the classroom experience.

- The use of **earbuds/headphones** during class is specifically **not allowed** (noting exceptions for authorized accommodations), and students who engage in this behavior may be asked to leave the class for the day.
- **Laptop computers** can be used only for taking notes, not for email, web browsing, or any other activities.
- Students who routinely do not bring materials to class that are required for participation will not be given credit for class attendance, and if this becomes a pattern of behavior, they may be asked to leave the class for the day.
- **Persistent problems** with participation may result in a [code of conduct](#) referral.

## Late Work/Make-up work

- **Homework will be assigned in Canvas with certain due dates.** Be sure check your Assignments in Canvas, and set your reminders as necessary, for the dates and times that correspond to your classwork.
- All assignments and project deliverables must be turned in to **Canvas** to earn credit and receive a grade. If the assignment is not posted in canvas, a zero will be recorded for that assignment.
- Weekly assignments and quizzes must be completed **by the posted due dates (usually Friday)**. All assignments on Canvas will be **closed within 24 hours of being due**. Late submission after the due but before the closing is allowed, however, **scores will be reduced by 50%**.
- Should you have extenuating circumstances, including those dealing with your health, **contact your instructor**. Your instructor will work with you and others, as needed, in the university community to make the appropriate adjustments. They may, at their discretion, accept a 'past due' assignment, however, **you must email your instructor to open the canvas assignment for you**. The instructor retains the right to ask for documentation of your 'extenuating circumstance' before they reopen the assignment. The canvas assignment will remain open for 24 hours, after the request has been accepted with a confirmation email from the instructor to the student.

## Grading Scale

Grade	A	A-	B+	B	B-	C+	C	D	F
Percentage	100 - 93	92 - 90	89 - 87	86 - 83	82 - 80	79 - 77	76 - 70	69 - 60	59 - 0

- Percentages that fall between grades will be rounded up. (See also [University Grading Policy](#)).
- Grades posted to Canvas are for reference only, and the attendance/participation grade will be finalized at the end of the semester. Students should ensure they are recorded correctly.

## Assignment/Evaluation Methods

### Evaluation

Activity	Percentage
Attendance & Class Participation	10
Weekly Assignments & Quizzes	30
Term Projects (2 @ 10% each)	20
Exams (3 @ 13.33% each)	40

- **Attendance & Class Participation** (10% of the total grade)
  - Attendance at all class meetings is mandatory and will be taken at the start of every class. Please be prompt as attendance will be concluded once the lecture starts.
  - Your absence will be recorded in Canvas, and your attendance score will be deducted **1% for each absence** (2 absences = -2%, 10 absences = -10%).
  - If you should miss a class, you must **inform the instructor by email before the class and get approval**.
  - Excused absences require valid documentation (e.g. doctor's office visit record) by email to the instructor. Extenuating circumstances will be evaluated on a case-by-case basis.
- **Weekly Assignments & Quizzes** (34% of the total grade)
  - Completion of assignments and quizzes **posted on Canvas**.
  - Weekly assignments and quizzes must be completed by the posted due dates (usually Friday).
  - Assignments: The instructor cannot stress the importance of making time to work on class assignments outside of class. Students are expected to complete professionally formatted assignments and assignments will be graded with a numerical score.
  - Quizzes: Before the due, **no time limit for quizzes. Unlimited attempts** are allowed (no score deduction for taking new attempts). From the multiple attempts, the best score will be recorded as your final score.
  - **In-class assignments** should be submitted during the class hour. No submission will be allowed before or after the class, except for pre-approved absence.

- **Term Projects** (20%, each 10% of the total grade)
  - Students will work **in groups (or individually)** and learn about specific environmental topics on their own ideas. Students will present their results and findings during the presentation session.
  - **Participation for all group members** is important. Proportional deduction applies to missing group member(s).
  - To get full credit, all work (e.g. presentation slides, CANVA, etc.) should be **submitted to Canvas** by the due date.
  - All work must be created solely for this class and must be the student's own. Students should keep a copy of all materials handed in during the course. Grades will be updated after the submission and feedback will be given through Canvas or email.
  
- **Exams** (40%, each 13.33% of the total grade)
  - There will be three exams taken in class. The exam date is not likely to change, but if it does, any change will be announced sufficiently ahead of time.
  - Students who will not be available for the exams should inform the instructor **at least 1 week before the exam** to make an alternate arrangement. Students who miss the exams unexpectedly (e.g., due to sudden illness, family emergency, or other unforeseen circumstances) must provide documentation or evidence of the reason for missing the exam. It will then be up to the instructor's discretion whether a "make-up" exam will be offered.
  - All exams will be in **closed-book, closed-notes** format. No phones. Only pens and a calculator are allowed.
  - Exams include quantitative, qualitative, problem-solving, multiple choice, true/false, short answer, etc. More specific details will be given to students during classes.
  
- **\*\*Changes in syllabus and assignment sheets may be modified as deemed appropriate. All changes will be announced in class.**

## Civility and Collegiality

Faculty and students come to the university for the same reason, which is to participate in a highly professional educational environment. To that end, both students and faculty are expected to treat each other with mutual regard and civility.

Communication, written, oral, and behavioral, between faculty and students must remain respectful. Within and outside of the classroom, students must refrain from derogatory comments toward the faculty member and their fellow students, and faculty as well must refrain from derogatory comments toward their students. Faculty and students should address each other with respect, in accordance with the wishes of the faculty and the students: for example, no one should be addressed by their last name alone.

Faculty, from the outset of a course, can and should specify what constitutes activities and behaviors that take away from, that diminish, the educational environment. An individual student's distracting behavior impedes the education of fellow students, which itself is a form of disrespect. Civility and collegiality also include respecting each other's time: for example, neither students nor faculty should arrive late to class (unless unforeseen, pressing circumstances prevail); faculty should be present at the posted office hours; and students and faculty should be punctual when meeting times are scheduled. In more general terms, collegiality means respecting the right of both faculty and students to participate fully and fairly in the educational enterprise.

## Course Schedule

- Subject to change per course policies. Watch for Announcements in Canvas.

Week	Date	Lecture Topic	Reading	Assignment (due Friday 11:59 PM)
1	Jan 12 (Mon)	Introduction to environmental science		Week #1 assignments and quizzes
	Jan 14 (Wed)	Sustainability	Chapter 1	
	Jan 16 (Fri)	Environmental systems	Chapter 2	
2	Jan 19 (Mon)	<b>Martin Luther King Jr. Holiday - No Classes</b>		Week #2 assignments and quizzes
	Jan 21 (Wed)	Environmental systems	Chapter 2	
	Jan 23 (Fri)	Ecosystems	Chapter 3	
3	Jan 26 (Mon)	Ecosystems	Chapter 3	Week #3 assignments and quizzes
	Jan 28 (Wed)	Biodiversity	Chapter 4	
	Jan 30 (Fri)	Biodiversity	Chapter 4	
4	Feb 2 (Mon)	Species interaction	Chapter 5	Week #4 assignments and quizzes
	Feb 4 (Wed)	Species interaction	Chapter 5	
	Feb 6 (Fri)	Human population	Chapter 6	
5	Feb 9 (Mon)	Urbanization	Chapter 6	Week #5 assignments and quizzes
	Feb 11 (Wed)	Climate	Chapter 7	
	<b>Feb 13 (Fri)</b>	<b>Exam #1</b>		
6	Feb 16 (Mon)	Climate	Chapter 7	Week #6 assignments and quizzes Term Project #1 Presentation Slides
	Feb 18 (Wed)	Biodiversity: Saving species	Chapter 8	
	Feb 20 (Fri)	Biodiversity: Saving species	Chapter 8	
7	Feb 23 (Mon)	<b>Term Project #1 Presentation</b>		Week #7 assignments and quizzes
	Feb 25 (Wed)	<b>Term Project #1 Presentation</b>		
	Feb 27 (Fri)	Biodiversity: Saving ecosystems	Chapter 9	
8	Mar 2 (Mon)	Biodiversity: Saving ecosystems	Chapter 9	Week #8 assignments and quizzes
	Mar 4 (Wed)	Resources: Food	Chapter 10	
	Mar 6 (Fri)	Resources: Food	Chapter 10	
9	Mar 9 (Mon)	Resources: Water	Chapter 11	Week #9 assignments and quizzes
	Mar 11 (Wed)	Water pollution	Chapter 11	
	Mar 13 (Fri)	<b>Exam #2</b>		
10	Mar 16-20	<b>Spring Break - No Classes</b>		No weekly assignments
11	Mar 23 (Mon)	Resources: Minerals	Chapter 12	Week #11 assignments and quizzes
	Mar 25 (Wed)	Resources: Energy	Chapter 13	
	Mar 27 (Fri)	Resources: Energy	Chapter 13	
12	Mar 30 (Mon)	Environmental hazards	Chapter 14	Week #12 assignments and quizzes
	Apr 1 (Wed)	Environmental hazards	Chapter 14	
	Apr 3 (Fri)	Air pollution	Chapter 15	
13	Apr 6 (Mon)	Air pollution	Chapter 15	Week #13 assignments and quizzes Term Project #2 Presentation Slides
	Apr 8 (Wed)	Climate change	Chapter 15	
	Apr 10 (Fri)	Climate change	Chapter 15	
14	Apr 13 (Mon)	<b>Term Project #2 Presentation</b>		Week #14 assignments and quizzes
	Apr 15 (Wed)	<b>Term Project #2 Presentation</b>		
	Apr 17 (Fri)	Solid waste	Chapter 16	
15	Apr 20 (Mon)	Solid waste	Chapter 16	Week #15 assignments and quizzes
	Apr 22 (Wed)	Environmental economics	Chapter 17	
	Apr 24 (Fri)	Environmental politics	Chapter 17	
16	Apr 27 (Mon)	<b>Exam #3</b>		No weekly assignments
	Apr 29 (Wed)	<b>Reading Days - No Classes</b>		
	May 1 (Fri)	<b>Reading Days - No Classes</b>		

## University Policies

### Reasonable Accommodations

The University is committed to ensuring equal access to all educational opportunities. The Office of Disability Services (ODS), facilitates reasonable accommodations for students with disabilities and documented eligibility. It is the student's responsibility to self-identify as a student with disabilities and register with ODS to request accommodations. If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course through the [ODS student portal](#), and communicate with your instructor about your approved accommodations as soon as possible. Arrangements for testing accommodations must be made in advance. Accommodations are not retroactive. If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring an accommodation, please contact ODS as soon as possible: [DisabilityServices@floridapoly.edu](mailto:DisabilityServices@floridapoly.edu); (863) 874-8770; [www.floridapoly.edu/disability](http://www.floridapoly.edu/disability).

### Accommodations for Religious Observances, Practices and Beliefs

The University will reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. (See [University Policy](#).)

### Title IX

Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment, sexual assault, dating violence, domestic violence and stalking. Resources are available if you or someone you know needs assistance. Any faculty or staff member you speak to is required to report the incident to the Title IX Coordinator. Please know, however, that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University [Ombuds Office](#), BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at [Peace River Center](#), 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment. The Title IX Coordinator is available for any questions to discuss resources and options available.

### Academic Integrity

Violations of [academic integrity regulation](#) include actions such as cheating, plagiarism, use of unauthorized resources (including but not limited to use of Artificial Intelligence tools), illegal use of intellectual property, and inappropriately aiding other students. Such actions undermine the central mission of the university and negatively impact the value of your Florida Poly degree. Suspected violations will be fully investigated, possibly resulting in sanctions up to and including expulsion from the university.

### Recording Lectures

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. Recordings may not be used as a substitute for class participation or class attendance. Recordings may not be published or shared in any way, either intentionally or accidentally, without the written consent of the faculty member. Failure to adhere to these requirements is a violation of state law (subject to civil penalty) and the student code of conduct (subject to disciplinary action). *Recording class activities including, but not limited to, lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), and invited guest speakers is prohibited.*

## Academic Support Resources

- **Library:** Students can access the Florida Polytechnic University Library through the University website and [Canvas](#), on and off campus. Students may direct questions to [library@floridapoly.edu](mailto:library@floridapoly.edu).
- **Tutoring and Learning Center:** The Tutoring and Learning Center (The TLC) provides tutoring to all Florida Poly students who may need additional academic support. The TLC is staffed by students who have excelled in the courses they tutor. They offer support by reviewing concepts and materials from class, clarifying points of confusion and providing assistance with learning strategies. While the focus of TLC is to provide support to students in freshman-level courses, upper-level courses are also tutored at the Center. The TLC is located in the IST Commons (second floor).
  - **Knack Tutoring:** Students looking for additional assistance outside of the classroom are advised to consider working with a peer tutor through Knack. Florida Polytechnic University has partnered with Knack to provide students with access to verified peer tutors who have previously aced this course. To view available tutors, visit [floridapoly.joinknack.com](http://floridapoly.joinknack.com) and sign in with your student account.
- **Academic Success Coaches:** All students at Florida Poly are assigned an Academic Success Coach. Your Academic Success Coach can assist you with academic success strategies. Please visit the Student Success Center on the second floor of the IST building to meet with an Academic Success Coach.
- **Writing Center:** Located on the second floor of the IST (2059/2061), the Writing Center helps students to develop their writing and presentation skills. Consultations are available in person and virtually. For more detail, visit [floridapoly.edu/writing-center](http://floridapoly.edu/writing-center).