AP Environmental Science

Course Syllabus · 2026–2027

Central High School

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Tutorials	Tuesdays & Thursdays in Tucker 117 — before school, after school, or during Bobcat Block

About Your Teacher



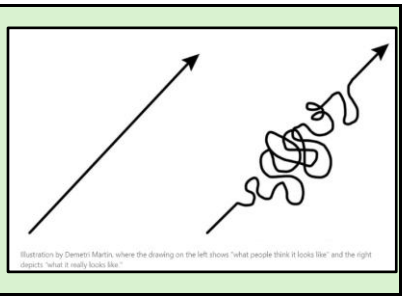
This year I teach Anatomy & Physiology, AP Environmental Science, and AP/DC Biology. I've been teaching for 33 years, primarily in public schools — 20 years of Biology 1 (grade-level and PreAP), 25 years of AP/DC Biology, 13 years of AP Environmental Science, and four years teaching at Angelo State University and Texas A&M University.

I hold a Bachelor of Science and a Master's degree in Biology from Angelo State University, plus additional graduate hours from Texas A&M University. I currently write test items for AP Biology for the College Board, and for the past 22 years I've served as a reader, table leader, question leader, and exam leader at the AP Biology reading each summer.

I love what I do, and seeing students grow and learn is awesome! I have two adult children who graduated from CHS — Kevin (32), who studies computer science, and Kelsey (28), a professional dancer and Academy Director at the San Diego Academy of Ballet. My husband Brian and I have been married for 41 years.

The most important thing: I want students to LEARN and GROW.

Both require using feedback to learn from mistakes. It's normal to worry about grades — but that worry shouldn't come at the expense of learning. Trust the process: if you do the work, the grades will follow.



Course Overview

This is a college-level course taught in high school. At the end of the year, students take a standardized AP Exam that determines eligibility for college credit. The course demands exceptional organizational skills and follows the curriculum framework established by the College Board.

- Students conduct at least two inquiry-based lab activities per Big Idea in the curriculum framework.
- Lab products may be a formal lab report, a mini-poster presentation, or a group presentation.

Grading

Grades are broken into two categories:

Category	Component	Weight
Major 70%	Cumulative Unit Exams	80% of the Major grade
	Labs & Projects	20% of the Major grade
Minor 30%	Homework & minor activities	10% of this category
	Quizzes & FRQs	20% of this category

Semester Exams

• All students take the fall semester exam — there are no exemptions. It's great review for the AP Exam.

• There is no spring semester exam (i.e., you're exempt), if you register for, prepare for, and take the AP Exam in May.

Homework, Late Work & Makeup Policy

Minor Category — Late Penalties

How Late	Penalty
1 day late	−10%
2 days late	−20%
3 days late	−30%
4+ days late	−50%

Weekly homework cannot be submitted after 1 week. The Schoology assignment will be closed the day the next week's homework is due.

All work for a unit must be turned in before the Summative Unit Exam for that unit. Need more time? Submit an Extension Request through this Google Form. Unless arrangements are made in advance, you may only request extensions one time per month.

AP Grading Guidelines

- Assignments are on time if turned in by the beginning of class (paper) or by 11:59 pm on the due date (digital).
- Only submit **COMPLETED** assignments — partially completed work will be returned for you to finish.
- **Unexpected absence**: online work is still due on time, unless you're too sick to work. Message me on Schoology, and we'll make a plan.
- **Planned absence** (school trip, college visit, etc.): all assignments are due on or before the day you leave.
- **Missed a lab day?** Get the data from your group, then complete the pre-lab, data analysis, and finish product on your own — on time.
- I reserve the right to decline any late assignment. Labs and projects, in general, are accepted on time only.
- Study groups are fine — but all answers and notes must be your own.

Independent Learning (Homework)

The full-year calendar, including due dates, is posted in Schoology. Day-to-day work may shift slightly, but independent learning deadlines will not.

- **Independent learning includes** textbook notes, video notes, Achieve, and formative AP Classroom assignments.
- Most independent work is submitted through Schoology — see me in advance if you're having submission trouble.
- Points accumulate throughout the grading period for work completed on time, with appropriate effort and evidence of learning.
- Though a small share of your average**, this work is the most essential part of your learning** — it's the foundation for quizzes, labs, projects, and tests.
- **You can't skip this work and still expect an A or B.** Class time is spent clearing up misconceptions and applying what you've already learned — if you arrive unprepared, you'll be lost.

Lab and Project Expectations

- Try to **attend every Lab in person**. Labs can't be made up, and missing one makes the material harder to understand. You're still responsible for turning in all lab assignments, regardless of attendance.
- Unless other arrangements are made in advance, **Labs and Projects are only accepted on time.**
- You'll **work in groups** throughout the year, just like real scientists do. At some point, you'll fill out a peer evaluation to reflect on how your group worked together.
- **Group work isn't always fair or equal.** If you feel like you're carrying the whole team, use it as a chance to practice delegating. If you feel like you're not contributing much, use it as a chance to practice speaking up. Either way, working with others—messiness included—is part of the experience.
- You are expected to **practice safety in the lab**. This includes dressing appropriately (closed-toe shoes; hair pulled back).

Quizzes & Unit Exams

Quizzes

- **Generally held each Wednesday,** covering that week's readings, videos, and AP Classroom assignments — plus review questions from prior weeks.
- Format varies: short-answer, multiple-choice, or free-response.
- **Expected absence:** arrange to take the quiz BEFORE you leave.
- **Unexpected absence**: take it when you return (before school or during Bobcat Block), in a different format, unless other arrangements are made in advance. Use this Google Form to schedule a makeup time.

Unit Exams

- Study a little each day — cramming doesn't work for long-term retention on Unit Exams or the AP Exam.
- **Exams mirror the AP format:** expect unfamiliar data and experiments that require applying, not just memorizing, what you've learned.
- **Exams are comprehensive** — mostly current-unit material, but often with questions from earlier units.
- **Exams are timed** like the AP Exam and completed in one sitting, unless you have approved extended time.
- Every exam is analyzed the next school day — try to be present for both the test and the analysis; it's an important learning tool.

- Do your best to be **PRESENT** in class on Exam Days!
- **Absent on exam day?**
    - You are expected to **make it up before class starts the following day** if possible—message me and make arrangements.
    - Know about it in advance (trip, appointment, etc.)? Arrange to test BEFORE you leave.

Questions or confusion about something? Please ask! ☺

Textbook & Materials

Textbook

Friedland, A. (2023). Environmental Science for the AP® Course (4th ed.). Macmillan Higher Education. https://bfw-reader.bfwpub.com/books/9781319469498

You'll receive instructions on how to access the book during the first week of school.

Materials

Required	
Five-subject spiral notebook	Bring it every day. One section is your lab notebook. We'll set up the organization system the first week of school.
School-issued Chromebook, charged	Bring it every day. Please leave personal devices at home.
Nice to Have	
Optional supplies	Colored pencils, highlighters, fine-line markers, scissors, tape or glue

Classroom Expectations & Procedures

- Bring your charged, school-issued Chromebook and your spiral notebook every day.
- State law prohibits cell phones at school — phones should never be out or on in the classroom, and since phones are off, earbuds/headphones are off too.
- When you enter class, sit in your assigned seat and look at the screen to prep — we start class as soon as the bell rings.

Food & Drink

- Never in the lab
- No smelly food
- Non-messy snacks are fine — not entire meals

Hall Pass

- Passes can be made after the first 20 minutes of class, before the last 10 minutes, and at other appropriate times — check with me.
- We will discuss the procedure during class.

AI, Plagiarism & Academic Integrity

Artificial Intelligence

- Unless directed otherwise, work is done without AI.
- There may be times we use AI for specific, approved assignments.
- When in doubt, ask!

Plagiarism

- It's not always obvious what counts as plagiarism — here is a helpful resource. When in doubt, ask!

Important Links

- Schoology
- Clever
- District Cell Phone Policy / State Law
- Course and Exam Description
- District Grading Policy

A Letter to AP Environmental Science Students and Parents

This syllabus is meant to help you get familiar with the AP Program and AP Environmental Science, and to understand what it takes to succeed. Here's the full picture:

About the AP Program

The AP Program® allows high school students to earn college credit and/or advanced placement through exams. The AP Exam is administered each May to over 320,000 students worldwide and is scored on a 1–5 scale. A score of 3 is usually acceptable to most colleges and universities, and at CHS roughly 85%+ of our students who take the exam score a 3 or better.

Most exam questions are content-based, but critical thinking is essential — much of the exam consists of lab-based questions that require experimental design, graphing, data analysis, and prediction. We'll build these skills all year.

> **2027 AP Exam**
> Date: Thursday, May 13th. Fee: approximately $40 · All students take the exam, even if registered for dual credit.

Why This Course Is Demanding

This is a college-level course taught to high school students, and universities expect it to match the course taken by introductory Environmental Science students. Score requirements for credit vary by university and major — if you're concerned, contact the department at the university you plan to attend.

- Students read and learn material outside class that may not be covered in class, including current scientific literature.
- A typical college science course involves about 7 contact hours per week; with ~49-minute class periods, we get about 4. To cover the same material, much of the learning happens independently, outside of class.

Attendance Matters

Material moves quickly and in much more depth than regular high school classes. Lab work is hard to make up and shows up on quizzes and unit tests — missing a lab day can mean not understanding a concept well enough to answer related questions later.

- If you're absent, contact your absence partners for help with what you missed, and arrange a time to connect with me.
- I'll do my best to schedule major labs and tests around most students' extracurricular commitments.
- You'll get a detailed calendar and access to the first unit's assignments on day one — look ahead and get ahead if you know you'll be busy.
- Time management is one of the most valuable skills you can build before college.

How to Be Successful in AP Environmental Science

Engage & take ownership

- Ask and answer questions in class — it's okay to be wrong!
- Be curious and know that you're capable of success.

Produce quality work

- Strive for excellence, but don't let perfection cause procrastination.
- Struggling? Find and ask for help — from classmates or from me.

Think like a college student

- Find a **time-management system** that works for you — write down what you need to do instead of relying on memory.
- **Work ahead.** Waiting until the day before is a high school habit that won't hold up here — start assignments early and set your own earlier deadlines.
- You'll do independent learning at home and tackle the hard material together in class — **doing the homework is what makes class work.**
- **Cramming doesn't work.** Review something every day; the night before a test is for polishing one or two tricky concepts, not learning everything.
- Aim to **UNDERSTAND and apply** concepts to new scenarios, not just memorize them.

Be prepared

- Complete independent learning on time.
- Bring your charged Chromebook every day.
- Review and study a little each day ahead of quizzes and tests.

Embrace mistakes

- Growth requires pushing past what's comfortable — breezing through everything means you're not being challenged.
- Expect to make mistakes — grappling with hard material is how you learn.
- Be persistent. Struggling is a sign you're on the right track.
- Focus on learning over grades — do your part, and the grade follows.

Ask questions & seek help

- Ask questions — someone else almost certainly has the same one.
- Form a study group; explaining material to someone else is one of the best ways to learn it.
- Ask me!

Maintain integrity

- Only submit completed work that's your own.
- Copying or googling answers robs you of the chance to learn and to catch your own misconceptions.

Trust the process — every assignment has a purpose, and every student has the potential to succeed by trusting me and doing their part.

Science Practices

1	**Concept Explanation: Explain environmental concepts, processes and models presented in written format**	
	1A	*Describe environmental concepts and/or processes*
	1B	*Explain environmental concepts and/or processes*
	1C	*Explain environmental concepts, processes and/or models in applied contexts*
2	**Visual Representations: Analyze visual representations of environmental concepts and processes**	
	2A	*Describe characteristics of an environmental concept, process or model represented visually*
	2B	*Explain relationship between different characteristics of environmental concepts, processes or models represented visually—in theoretical contexts; in applied contexts*
	2C	*Explain how environmental concepts and processes represented visually relate to broader environmental issues.*
3	**Text Analysis: Analyze sources of information about environmental issues.**	
	3A	*Identify the author's claim.*
	3B	*Describe the author's perspective and assumptions.*
	3C	*Describe the author's reasoning (use of evidence to support a claim).*
	3D	*Evaluate the credibility of a source—recognize bias and scientific accuracy*
	3E	*Evaluate the validity of conclusions of a source or research study.*
4	**Scientific Experiments: Analyze research studies that test environmental principles.**	
	4A	*Identify a testable hypothesis or scientific question for an investigation.*
	4B	*Identify a research method, design and/or measure used.*
	4C	*Describe an aspect of a research method, design and/or measure used.*
	4D	*Make observations or collect data from lab setups.*
	4E	*Explain modifications to an experimental procedure that will alter results.*
5	**Data Analysis: Analyze and interpret quantitative data represented in tables, charts and graphs.**	
	5A	*Describe patterns or trends in data.*
	5B	*Describe relationships among variables in data represented*
	5C	*Explain patterns and trends in data to draw conclusions*
	5D	*Interpret experimental data and results in relation to a given hypothesis.*
	5E	*Explain what the data implies or illustrates about environmental issues.*
6	**Mathematical Routines: Apply quantitative methods to address environmental concepts.**	
	6A	*Determine an approach or method aligned with the problem to be solved.*
	6B	*Apply appropriate mathematical relationships to solve a problem with work shown (e.g. dimensional analysis)*
	6C	*Calculate an accurate numeric answer with appropriate units.*
7	**Environmental Solutions: Propose and justify solutions to environmental problems**	
	7A	*Describe environmental problems.*
	7B	*Describe potential responses or approaches to environmental problems.*
	7C	*Describe disadvantages, advantages, or unintended consequences for potential solutions.*
	7D	*Use data and evidence to support a potential solution.*
	7E	*Make a claim that proposes a solution to an environmental problem in an applied context.*
	7F	*Justify a proposed solution by explaining potential advantages.*

Course Sequence & Textbook Correlation

This table maps each unit's topics to the corresponding chapters in our textbook. The full year calendar with due dates lives in Schoology.

Unit	Topic	Title	Textbook Correlation
1--Ecosystems	5.1	Tragedy of the Commons	Module 24
	1.1	Intro to ecosystems	Module 1
	1.2	Terrestrial biomes	Module 2
	1.3	Aquatic biomes	Module 3
	1.4	Carbon Cycle	Module 4
	1.5	Nitrogen Cycle	
	1.6	Phosphorus Cycle	Module 5
	1.7	Hydrologic Cycle	Module 5
	1.8	Primary Productivity	Module 6
	1.9	Trophic Levels	Module 7

Unit	Topic	Title	Textbook Correlation
	1.10	Energy Flow	
	1.11	Food Chains & Webs	
2--Biodiversity	2.1	Intro to Biodiversity	Module 8
	2.2	Ecosystem Services	Module 9
	2.3	Island Biogeography	Module 10
	2.4	Ecological Tolerance	Module 11
	2.5	Natural disruptions	Module 12
	2.6	Adaptations	Module 13
	2.7	Succession	Module 14
	9.8	Invasive Species	Module 59
	9.9	Endangered Species	
	9.10	Human Impacts on Biodiversity	
3--Populations	3.1	Generalist & Specialists	Module 15
	3.2	K and r selection	
	3.3	Survivorship curves	
	3.4	Carrying capacity	Module 16
	3.5	Population growth & Resource availability	
	3.6	Age structure diagrams	Module 17
	3.7	Total fertility rate	
	3.8	Human population dynamics	Module 18
	3.9	Demographic transition	
4—Earth Systems	4.1	Plate Tectonics	Module 19
	4.2	Soil formation & Erosion	Module 20
	4.3	Soil Composition & Properties	
	4.6	Watersheds	Module 21
	4.4	Earth's Atmosphere	Module 22
	4.5	Global Wind Patterns	
	4.7	Solar Radiation & Earth's Seasons	
	4.8	Earth's Geography and Climate	Module 23
	4.9	El Niño and La Niña	
5—Land and Water Use	5.11	Ecological Footprints	Module 31
	5.12	Intro to Sustainability	Module 32
	5.3	Green Revolution	Module 25
	5.4	Impacts of Agriculture	Module 26
	5.5	Irrigation Methods	Module 27
	5.6	Pest Control Methods	
	5.14	IPM	Module 33
	5.15	Sustainable Agriculture	
	5.7	Meat Production Methods	Module 28
	5.8	Impacts of overfishing	
	5.2	Clearcutting	Review Module 24
	5.17	Sustainable Forestry	Module 34
	5.16	Aquaculture	
	5.9	Impacts of mining	Module 29
	5.10	Impacts of urbanization	Module 30
	5.13	Reducing Urban Runoff	
6-Energy Resources & Consumption	6.1	Renewable & Nonrenewable	Module 35
	6.2	Global Energy Consumption	
	6.3	Fuel Types and Uses	Module 36
	6.4	Distribution of Natural Energy Resources	Module 37
	6.5	Fossil Fuels	
	6.6	Nuclear Power	Module 38
	6.7	Energy from Biomass	Module 39
	6.8	Solar Energy	
	6.9	Hydroelectric Power	
	6.10	Geothermal energy	Module 40

Unit	Topic	Title	Textbook Correlation
	6.11	Hydrogen Fuel Cell	
	6.12	Wind Energy	Module 41
	6.13	Energy Conservation	
7—Atmospheric Pollution	7.1	Intro to Air Pollution	Module 42
	7.2	Photochemical smog	Module 43
	7.3	Thermal Inversion	
	7.4	Atmospheric CO_2 & Particulates	
	7.5	Indoor Air Pollution	Module 44
	7.6	Reduction of Air Pollutants	Module 45
	7.7	Acid Rain	Module 46
	7.8	Noise Pollution	
9—Global Change	9.1	Stratospheric Ozone Depletion	Module 55
	9.2	Reducing Ozone Depletion	
	9.3	The Greenhouse Effect	Module 56
	9.4	Increases in Greenhouse Gases	Module 57
	9.5	Global Climate Change	
	9.6	Ocean Warming	Module 58
	9.7	Ocean Acidification	
8—Aquatic and Terrestrial Pollution	8.1	Sources of Pollution	Module 47
	8.2	Human Impacts on Ecosystems	
	8.3	Endocrine Disruptors	
	8.4	Human Impacts on Wetlands & Mangroves	Module 48
	8.5	Eutrophication	
	8.6	Thermal Pollution	
	8.7	Persistent Organic Pollutants	Module 49
	8.8	Bioaccumulation and Biomagnification	
	8.9	Solid Waste Disposal	Module 50
	8.10	Waste Reduction Methods	Module 51
	8.11	Sewage Treatment	Module 52
	8.12	LD_{50}	Module 53
	8.13	Dose Response Curve	
	8.14	Pollution and Human Health	Module 54
	8.15	Pathogens and Infectious Disease	