Environmental Systems Syllabus

Environmental Systems includes laboratory investigation and fieldwork using appropriate inquiry. This hands-on course is a survey of the many systems, cycles, and processes that impact life on earth, providing real-world examples of how biology and chemistry concepts are found in the environment. In this course, the student will investigate the relationships in ecosystems between abiotic and biotic factors and multiple species, humanity’s impact on the earth, and how pollution negatively impacts everyone.

**Teacher Information:**
Shelby Peyton  
Room: 1st - B5-104, 2nd - B5-113, 4th - B5-102, 5th - B3-206, 6th - B5-204, 7th - B5-211  
Email: shelby.peyton@pisd.edu

**Lab Safety**  
Safety is strictly enforced during all activities. Failure to follow all safety guidelines can result in removal from the lab, office referral, and/or parent conference.

**Digital Citizenship:**  
When online you are expected to conduct yourself with dignity, empathy, and respect at all times. At no time will foul language or inappropriate behavior be tolerated. Failure to do so will result in an automatic phone call to your parents and referral to the administration.

**Cell Phones, etc.**  
Cell phones, headphones, earbuds, etc. are not allowed to be used or displayed in class unless directed to do so by the teacher. Any device that is out (whether in use or not) will be collected and returned at the end of class for the 1st offense. Subsequent offenses will result in the device collected and turned into the office.

**Academic Dishonesty**  
Academic dishonesty in any form will not be tolerated. All students involved will be given a 0 for that particular assignment/assessment, parents contacted, and an office referral issued.

**Required supplies each day:**  
- Chromebook  
- Pencil/Pen  
- Notebook

**Supplemental supplies:**  
- Kleenex/tissue  
- Paper towels  
- Hand sanitizer

**Hello!**

Welcome to the 2021-2022 school year! This year looks like none other in the past, but I am excited for the opportunities for creativity and collaboration during this year. The Environmental Systems team has been working hard to make this a rewarding and innovative learning opportunity for you. Although we are starting this year with many unanswered questions, I know that I am focused on showing patience, compassion, and grace for all students as we forge ahead.

**Chromebooks:**

Every student will need to check-out a Chromebook this year. This will allow us the flexibility to adjust if necessary, according to health guidelines regarding COVID-19. Chromebooks are an essential tool in our class therefore, you will need to bring your Chromebook everyday to class.

**Google Classroom Codes:**

Updated 7/17/2019
You will need to connect to my Google Classroom. This is the place that you will find all the course materials, assignments, and lecture notes. In addition to paper based assignments, you will also utilize google classroom (and other technologies) to complete and submit certain assignments.

**My Website**

To access my website go to the [Plano East Website](https://www.pisd.edu/plano-east), click on Faculty Page, and find my name. Once on my website you will see my daily/tutorial schedules, contact information, and other course materials. Google classroom will be one of the main points of contact for this course therefore, it is imperative that you join as soon as possible.

**Student Email:**

Every student has a student email through the district. This is how you will communicate with all your teachers and other school officials. Please make sure that you check your email regularly. To gain access to this email click on this link [https://www.pisd.edu/studentemail](https://www.pisd.edu/studentemail).

**Other technologies:**

There will be a few additional technologies that we will use to teach the year (Kami, Nearpod, Zipgrade). You will be directed by me on ‘when’ and ‘how’ to sign up for these.

So, in closing, make sure that you have checked out your Chromebook and signed up for my Environmental Systems classroom as soon as possible.

Looking forward to meeting you,

Shelby Peyton
Ecology Unit (53 days)
Students will review the experimental design process, safe laboratory practice, and learn about safe field study practice. Students will design an experiment to practice this skill set. Students will analyze the movement of nutrients and energy through the biogeochemical cycles, and through food chains and food webs in different ecosystems. They will study relationships within these ecosystems at multiple trophic levels. As they move into studying relationships, students will analyze the different roles that organisms can play in their own ecosystems, including how they interact with other species. Finally, students will study population dynamics by calculating birth rate and death rate. They will look at the impact of extinction on ecosystems.

Human Impacts (53 days)
Students will apply their knowledge of populations to analyze human populations. They will differentiate between developing and developed countries, and determine the impact of economics and education on population growth. Students will identify the difference between exponential and logistical growth and analyze the effects of natural disasters on population and biodiversity. The students will then identify types of land management and analyze how they impact land fertility. As students learn about food production, they will study the importance and impacts of soil quality, fertilizer, and pesticides. They will also study how the USA allocates land into national parks and important historical environmental figures. As students finish out this unit, they will analyze the positives and negatives of mining for resources, and differentiate between types of mining. Students will compare and contrast nonrenewable and renewable sources of energy, analyze the impact of energy consumption on ecosystems, and discuss current and future technological advances for meeting our energy needs.

Pollution (36 days)
Students will study the types of waste that humans produce and the impact they can have on ecosystems and communities. Students will analyze the waste they create from everyday activities, such as meals and classwork. They will study different hazardous waste sites and the management of them. Students will study alternative waste management options such as recycling and composting. In the water unit, students will discuss sources of water and where these sources are found on earth. Students will read about aquifers and model how they filter our water. Students will study how water pollution impacts others, including eutrophication and oil spills. Students will also study waterborne diseases. Students will finish the course by studying the atmosphere and air pollution. Students will differentiate between climate and weather. They will discuss how greenhouse gases make the earth livable, but how too high of a concentration or too low can negatively impact all species. Students will discuss the layers of the atmosphere and how pollution in the atmosphere can result in acid rain and health problems.