Utica High School
Environmental Science

Instructor: Jeremy Krausz
Email: jkrausz@northfork.k12.oh.us
Website: www.office.com then login to OneNote
Phone: 740-892-2855
Office Hours: Mornings before school 6:45 – 7:15 in room 206 or by appointment

Course Description: The goal of this course is to provide students with the scientific principles to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, and to examine alternative solutions for resolving and/or preventing them. Environmental science is interdisciplinary and embraces a wide variety of topics from different areas of study. Topics to be explored include environmental economics and policy, human population growth, earth's systems and resources, energy, ecology, and environmental health. Students will conduct field studies, research, labs, and projects.

Materials needed: Students MUST have all materials, including iPads, in class every day. Students must have a scientific calculator, a 3-ring binder and paper with sections for notes, a pencil, and pen.

Grading Scale:
- 90 – 100 = A
- 80 – 89 = B
- 70 – 79 = C
- 60 – 69 = D
- 0 – 59 = F

Grade Weights:
- Tests/Projects– 60%
- Labs/Classwork/Homework – 40%

Major Course Projects and Instructional Activities:
Tests: Test will be given at the end of a unit and represent student knowledge for the topic. There will be 3 or 4 test given per 9 week period.
Quizzes: Quizzes are given frequently over the course content. They often fall in the middle of a unit to check for student understanding.
Labs: Major laboratory experience will include a written lab report that represents students understanding of the lab and the data collected during the lab.
Daily Classwork and Homework: Short assignments done in class and daily homework assignments completed outside of class.

At the end of the 1st 9-weeks, the 9 weeks average will count towards 80% of the grade, and the midterm and final exams counting for the remaining 20%. The average of four 9-weeks grades will count for 80% of the final course grade and the midterm and final will count for the remaining 20% of the final grade.

Denial of Credit Policy for Full-Year Course:
DENIAL OF CREDIT due to absence
Any student who accrues non-professional absences in excess of four (4) days in a nine week period will be subject to receive zeroes on assignments for every additional day of non-professional absence for the remainder of the 9 weeks for each class that this takes place. Each new nine weeks every student will begin with a clean slate with regard to period attendance. Denial of credits can be appealed in writing only to the building principal.

Class Participation
What you put into this class will be what you get out. Active participation is essential in Chemistry. This class is not meant to be observation. You will be given many opportunities to participate in class discussions, activities, and labs. Your grade will reflect poor participation. Remember, poor participation includes not paying attention to discussions, lectures, or instructions; sleeping; talking; and being generally disruptive.

Test Retakes
Students do test corrections for partial credit. Corrections will be done during study hall, before/after school, or academic assist. Only once per unit of study and there will be no corrections if the test is assigned during remote learning.

Classroom Policies:

♦ **Everyone is expected to be in their seats preparing to start class before the tardy bell rings.** When the bell rings, students should complete daily bell work in their folders. Homework and other assignments will be due shortly after the bell.
♦ **Mutual respect is required at all times.** Everyone's opinions and contributions in class are welcomed. When someone else is talking you must be courteous.
♦ **Come to class prepared with all your materials.** You will need to bring your note- book , iPad, textbook and calculator to class everyday.
♦ **All students will wait for specific instructions before entering the lab.** No student should use the sinks, gas jets, safety shower or emergency eye wash unless you have permission from the instructor.
♦ **Safety rules must be followed at ALL times.** The rules are in place to ensure that every student in the room is as safe as possible in all situations.

Absences/Missed Assignments, Quizzes, Tests:

It is your responsibility to make up any missed work not exceeding one day more than the period of absence. Check the class website. Come see me when you miss a day. I will point you towards anything you missed. If there were any additional notes that were not part of a handout, you are responsible for getting them from a partner. You will also need to get with someone in the class who can give you an overview of the class you missed. You are responsible for keeping up with these things during non-instruction time. IF YOU MISS A DAY, IT IS YOUR RESPONSIBILTY TO GET CAUGHT UP!

If you are absent for a quiz or test day, you are expected to take the test/quiz on the day you return to class. Be prepared.
The majority of the work in this course is cumulative. Therefore, keeping up with **your** work will help to insure **your** success.

Recommended/Required Readings: Students are encouraged and may be required to read articles from current science journals and magazines.

Course Outline

Unit: Science Skills

- The Scientific Method
- Observations versus inferences
- Quantitative versus Qualitative
- Review of measurement
- Metric conversion review
- Graphing skills
    - Know when to use a bar, line, pie graph
    - Know the major features of a graph (title, scale, units…)
    - Creating graphs

Unit: Water, Watersheds, Wetlands and Water Pollution and Solutions

- Water distribution on Earth
- The water cycle
    - Clearly define and explain the difference between infiltration and runoff
- Stream characteristics and related vocabulary
- Macro invertebrates in freshwater
- Watersheds
- Wetland types, their characteristics, and functions

Unit: Water, Watersheds, Wetlands and Water Pollution and Solutions (continued)

- Water Pollution
    - Major water diseases: Typhoid, Dysentery, Malaria, Cholera
    - Eutrophication and Ocean Acidification
- Solutions to protect our water

Unit: Electricity, Energy, and Energy Resources

- Energy Generation
- Energy Distribution
- Energy Types Pro's and Con's
- Fracking
- Long term energy planning and conversion to renewable resources
- *Air, Atmosphere, Environmental Health*
- Air and layers/ features of the atmosphere

Unit: Air, Atmosphere, Environmental Health (continued)

- Ozone formation, hole, and The Montreal Protocol
- Carbon Cycle
- Greenhouse Effect
- Climate Change
- Carbon Footprint
- Air Pollution / Particulate Matter
- Environmental Health including human health

Unit: Taxonomy and Classification

- Be able to name animals using Linnaeus's Binomial Nomenclature system
- Know and explain the three Domains of nature
- Be able to use Dichotomous keys

Unit: Ecosystems

- Biomes
- Make and design Food webs and food chains.
- Explain what Trophic levels are and how the 10% rule applies
- Explain animal relationships such as Symbiosis
- Explain changes in population that are both natural and manmade
- Ecological succession
- Invasive Species

*Bonus Unit: Trash/ Landfills/Recycling**

- Be able to explain how trash is dealt with in your area and where it goes.
    - Landfills, Incinerators
- Design Landfills
- Reduce, Reuse, Recycle!
    - End of year project