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A.P. Environmental Science

Course Overview:
The course is designed to be the equivalent of a college level semester course in Environmental Science. Environmental Science is an interdisciplinary field of study, integrating the concepts of biology, ecology, chemistry, math, sociology, economics, and law and using those concepts to come to an understanding of the natural world and the forces that affect it. The advanced Placement Environmental Science program is intended to prepare students to deal effectively with the increasing problems and questions related to environmental impacts and to plan for the maintenance and management of the environment in the face of population and industrial growth.

The goal of the AP Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them. Another important part of the course is data analysis, measurement, statistics, dimensional analysis and other operations that require mathematical skills.

An Advanced Placement Course is designed to be equivalent to an introduction level college course. This course will be conducted as such including content material, type, and form of assignment. The majority of the grade will be from exams, labs, and TMAs due to the amount of points assigned. Students and parents must be aware that even though the student may have made "all A's" before, they may not have had the challenge of an advance placement science class and the critical thinking required of this course. Earning a B in the advance placement class is a significant accomplishment. All should strive to do the best work possible; however, pressure to earn an A in a difficult class could cause undue pressure and possibly lead to problems in other classes.

Class Profile:
The course is a yearlong consisting of two eighteen week semesters. **Independent work is an expectation of this course**, and you will be required to master some content material with little assistance due to time constraints to allow for laboratory and field work. Labs must be completed even if after school time is required. On average, labs/activities will be conducted one class per week. Students must be prepared to work out doors for some of the labs and field studies. There may be instances when students will need to put in time outside of normal class and school hours.

Timeliness and self discipline must be a part of the student's character to be successful in this class. If an assignment is due on a particular day, then it is due at the beginning of class that day. **Do not ask** to "go print" your assignment. All assignments need to be completed **before the due date** so that you can turn it in on that date. Excuses will be politely listened too, and then proper reductions will be accessed.

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Tentative Schedule

TOPIC	READING ASSIGNMENTS
• Environmental Problems, Their Causes And Sustainability	1
• Science, Systems, Matter, and Energy	2
• Ecosystems: What are they and how do They Work?	3
Test # 1	
• Evolution and Biodiversity	4
• Aquatic Biodiversity	8
• Sustaining Aquatic Biodiversity	11
Test # 2	
• Climate and Terrestrial Biodiversity	7
• Sustaining Biodiversity: The Species Approach	9
• Sustaining Terrestrial Biodiversity: Managing and Protecting Ecosystem	10
Test # 3	
• Population Ecology	5
• Applying Population Ecology: The Human Population	6
• Food and Soil Resources	12
Test # 4	
• Water Resources	13
• Water Pollution	20
Test # 5	
• Air Pollution	18
• Climate Change and Ozone Loss	19
Test # 6	
• Geology and Nonrenewable Mineral Resources	14
• Nonrenewable Energy Resources	15
• Energy Efficiency and Renewable Energy	16
• Solid and Hazardous Waste	21
Test # 7	
• Sustainable Cities	22
• Economics, Environment, and Sustainability	23
• Politics, Environment, and Sustainability	24
• Environmental World Views, Ethics, and Sustainability	25
Final Exam	
• Review, Field Studies	
• A.P. Exam	

- Environmental Film Series

Additional Reading Assignments:, Crash Course AP Environmental Science book. Teacher assigned reading, class handouts, web assignments
Potential Field Trips: Water Works, Water Treatment, Land Fill, Lindsey and Bull Creeks

Textbook: *Living in the Environment: Concepts, Connections, and Solutions* Miller and Spoolman 16th Edition

Labs /Activities

Due to constraints in time, equipment, money, and other resources, labs are conducted in a group setting. Labs to include the performance and lab reports will be completed in groups of three or four. These groups must function together and work as a team. A lab contract will be signed by each member for each lab. The contract will state which portion of the report the student is responsible. If a student does not complete their portion they will receive a zero for that part and the student who completes the extra work will get a double grade for that portion. Students pick their own lab partners.

Cats of Borneo Activity
Tragedy of the Commons Lab
Something's Fishy (mark and recapture simulation)
Moose and Wolves of Isle Royale (predator/prey relationships, graphical analysis of data)
APES in the News Project (9 week collection of newspaper articles related to environmental issues)
Make Your Own Ozone Test Paper
Chemical Weathering Lab
Energy Audit (long term data collection and analysis)
Population Growth in *Lemna minor*
Estimating Population size of *daphnia pulex*
Chemical and Physical Analysis of Natural Water
Estimating Air Pollution Generated by Everyday Activities
Physical Characteristics of Soil
Chemical Characteristics of Soil
Population Density and Biomass Study
Exploring Biodiversity
Acid Deposition: The Threat from Above
Dissolved Oxygen

Potential Videos: In an effort to present the most up to date information and events, short clips from You Tube may be utilized. All clips will relate directly with the topic being discussed in class and will not be more than 12 to 15 minutes.

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Some of these videos will be shown in their entirety or in part. If you object to your student watching any one of the listed, indicate so and which video on the signature portion of the syllabus. The student will be excused from only the listed objections.

The Lorax
A Civil Action
An Inconvenient Truth
The China Syndrome
Medicine Man
Instinct
People Bomb
Race to Save the Planet Series
Silkwood
Strange Days on Planet Earth (National Geographic)
The Last Journey of the Leatherback
Who Killed the Electric Car?
The Meatrix

Field Work

Some activities will require outdoor work. Various environments, such as grassy areas, pine groves, deciduous forest, areas including primary and secondary succession, and water will be explored and sampled.
Each student will participate in and complete a home energy audit, and calculate their individual and family carbon footprint.

TMAs/Research/Term Paper

There will be one major research and presentation TMA (second semester) and two to three smaller research topics.

Grading Policy

- Unit Tests (~every 3 1/2 weeks) → **Tests will be a two day event**. First day there will be 50 multiple choice questions. The second day will be 2 free response questions. Test are formatted and graded AP style (1 pt / correct answer, 0 pts/ blank, incorrect answer. Number of correct answers multiplied by .90) Free response questions graded using AP style rubrics. Each point earned on free response is multiplied by 1.5. Each test is worth 100 points. The grade will be determined by dividing the score earned by the total possible score then multiplied by 100 to get a percentage.
- Quizzes ⟶ 1 grade; Given at the conclusion of each chapter. Points vary
- Small TMAs ⟶ (1 – 2 per 9 weeks) Points vary
- Labs → 1 grade (participation, results, and lab report). Points vary depending on complexity of lab.
- Assignments → Points vary
- Mid-term (end of first semester) and Final (end of second semester) 200 points
- All tests can be considered cumulative

- Unit tests and quizzes will be 60% of the grade while labs, TMAs, and other assignments will be 40%

Homework

- **Standing assignment** → review (and re-write if necessary) class notes and handouts nightly in conjunction with your daily reading in the corresponding chapter of the textbook. Reading and taking notes on the text is a must for success.
- Complete unit packets
- Complete projects and/or lab reports (as assigned)
- Study for exams

Make-up Work

- **Missed exams/ Quizzes**: If a unit test/quiz is missed, then the students **must** take the exam/quiz the next class day in class. Before or after school does not provide sufficient time to take an exam. A grade of zero will remain in the grade book until the test/quiz is scored.
- **Assignments:** If a student misses an assignment due to an excused absence, then the student will have the appropriate time/days to make up the work. If the absence is unexcused, then no make-up is allowed.
- **Late work** – assignments turned in late will lose 50% per day for every day the assignment is late. Work is considered late if it is not turned in at the beginning of class the day it is due.

Notebooks:

You will be expected to keep an organized notebook for this class. In it will go all handouts, returned work, notes, copies of labs and lab results/reports, and articles. All notes should be kept in the "Cornell Notes" method. This notebook will be your portfolio for this class. Some colleges will want an idea of type of work required and completed.

Reading Across the Curriculum:

Our school has a school wide reading across the curriculum program. Every student is expected to have a "pleasure reading" book with them at all times. They are expected to read this book when they finish a quiz or test early or when they have completed all of their assigned work.

Extra Credit

The mid-term test grade can be substituted for a lower test grade during the first semester; likewise, the final exam grade can be substituted for a low test grade during the second semester. **There is no extra credit**. If a situation presents itself that allows for a **unique learning experience**, then an extra credit assignment may be given. However, a low grade, or not making a grade you want is not a reason to give or allow extra credit. If the student has a zero on any assignment for not completing the assignment, then extra credit will not be considered.

Tutoring: Wednesday and Friday mornings from 7:40 till 8:10.

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Academic Integrity:

Any sharing of test or quiz information is a form of cheating. Utilizing work or information obtained from former APES students is also considered cheating. **Your Honor Code must be hand written and signed on every assignment turned in.** Students must read and become familiar with the school's student handbook. I follow all of the school handbook's guidelines for academic integrity. Failure to follow these policies will result in a zero for all work of all students involved, a phone call to your guardian and a referral to Honor Council. Remember: plagiarism is considered cheating and a violation of the academic integrity policy.

Rules:

1. Be inside the classroom before the bell rings. This includes having ready all material needed to participate in class.
2. Write down the daily standard/objective along with essential question.
3. Come to class prepared to discuss past lessons and assignments.
4. Do not eat or chew gum in class.
5. Respect all others including their belongings, views, and space.

This is an advanced fast paced class. Any behavior that disrupts other students or interferes with hearing, seeing, or understanding of the material will not be tolerated.
Not following these rules will result in appropriate disciplinary action.

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I have read and understand all policies in Mr. Morgan's syllabus. If I have any questions, I can contact Mr. Morgan at 706.748.2534 or e-mail him at morgan.robert.m@muscogee.k12.ga.us

Student Signature and date: _____

Parent Signature and date: _____

My student may watch all videos listed: _____

My student may not watch the following videos:_____

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