**2016-2017 AICE Environmental Management:
Course Outline and Policies**

Ms. Paxson, Room 25 – 016

Email: paxsonma@gm.sbac.edu
Website: paxsonscience.com

Twitter: @MsPaxsonScience

**Course Outline:**

Welcome to AICE Environmental Management! This course seeks to educate students about environmental issues, systems, patterns and mechanisms while emphasizing what impact humans have had on the world around us and how we may manage this impact sustainably. Through this class, you will learn to analyze and consider environmental issues on both local and global scales. As a future voter, it is important that you understand not only how the world around us works but why we should protect it and what we can do to achieve these goals. The environment is a complex social and political issue frequently debated by governments and non-governmental organizations alike, but there is still an important role for all individuals to play.

Throughout the year, we will discuss how rapid human population growth is the fundamental environmental issue. Humans are affected by the environment constantly, and in turn impact it through use of resources. Because of this, we will discuss the importance of sustainability in resource management and the necessity of a global perspective when considering these diverse issues.

The AICE curriculum guide defines the environment by segmenting it into four “spheres” on Earth. The spheres are:

 • **The biosphere**: all living organisms that have established themselves on Earth and the
 area they are found within.

 • **The lithosphere:** the upper mantle and crust of the Earth which makes up the ever
 moving tectonic plates.

 • **The hydrosphere:** the entire body of water on Earth, in the form of fresh and salt
 water, ice caps, and water vapor.

 • **The atmosphere:** the gaseous shell that surrounds the other two non-living spheres.

By studying the components and make-up of the world around us, it is hoped that candidates will gain an appreciation for the environment and a desire to help work towards a more sustainable world. As the single greatest stressor to the Earth, it is critical that humans understand the role we play and how best to sustainably manage the environment around us.

Additionally, this year we will be trying something new in AICE Environmental Management. As part of a research project with the National Science Foundation, we will be using 3D printing and scanning technology throughout the year to enhance our understanding of the environment and how it has changed over time. Students will have access to 3D printers and scanners at various points during the course, and will be responsible for using 3D modeling in their own learning.

**Course Requirements**

All students enrolled in this course will be required to:

•Complete an **independent, authentic research project** that investigates the environment and some aspect of environmental management. Accompanying the project will be a 1500-2000 word report summarizing the project and findings. This report is a major part of your class grade and worth 20% of your final Cambridge score.

•Take the **AICE Environmental Management Papers 1&2** in late May/early June (dates TBA).

**AICE/AP Environmental Management Tentative Pacing Guide (subject to change)**

|  |  |  |
| --- | --- | --- |
| Topic | Text page(s) | Approx. time Spent |
| **Intro to Environmental Science and Global Climate Change** | Ch 1, 15 | 5 days |
| **The Biosphere:**  Ecosystems (biotic and abiotic factors, terrestrial and aquatic biomes, ecosystems, primary productivity and photosynthesis, movement of energy through ecosystems) | Ch 3 | 15 days |
| **Changes in Ecosystems:** Community ecology, succession, studying ecological change | Ch 6 | 10 days |
| Populations: Population biology, human population demographics, MEDC’s versus LEDC’s | Ch 7 | 10 days |
| Human Impacts on the Biosphere: effects of human activity on terrestrial and aquatic ecosystems, loss of biodiversity, conservation and management of Earth’s living systems | Ch 5, 10, 18, 20 | 10 days |
| **The Lithosphere:** Structure of the Earth, plate tectonics, rock cycle | Ch 8 207-220 | 10 days |
| **Natural Hazards of the Lithosphere:** volcanoes, earthquakes, hazard management | Ch 8 207-220 | 8 days |
| **Soils and Mass Movements:** formation and characteristics, soil profiles, testing local soil samples, erosion and deterioration, soil mass wasting | Ch 8 221-226, Ch 11 | 7 days |
| **Resources of the Lithosphere:** Renewable, non-reneable, and recyclable resources, mining, resource management in MEDC’s vs. LEDC’s | Ch 8 226-230 | 7 days |
| **Energy from the Lithosphere:** Carbon cycle, fossil fuels, nuclear energy | Ch 12-13 | 6 days |
| **The Hydrosphere:** Water cycle, ocean circulation, groundwater, water quality testing, study of local water sources | Ch 8 | 8 days |
| **Resources of the Hydrosphere:** management of water supply, potential effects of global climate change on water supply | Ch 9 | 7 days |
| **Human Impacts on the Hydrosphere:** Fresh and salt water pollution and remediation, solid waste management | Ch 17, 14, 16 | 8 days |
| **The Atmosphere:** Atmospheric structure and composition, Earth’s “energy budget” | Ch 4 | 5 days |
| **Weather and Climate:** Local weather systems, forecasting, climate, ENSO, wind currents in detail | Ch 4 | 10 days |
| **Human Impacts on the Atmosphere:** stratospheric ozone depletion, air pollution | Ch 15, 19 | 10 days |
| **Independent Research and Write-Up: Final Drafts Due April 1st** | -- | -- |
| **AICE Wrap Up and Review/ AICE Papers 1 & 2**  | -- | TBA |

**AICE Environmental Management Classroom Policies and Procedures:**

Welcome to AICE Environmental Management! This is a challenging, fast-paced course, but I promise it will be enjoyable and worth it. To ensure that we are able to meet our learning goals for this class, I have outlined a few rules, procedures, and my philosophy. Following these will allow us to move through the year smoothly.

**My teaching philosophy**: To me, science is a fascinating and critically important subject. I believe that it is important for all members of a functioning society to understand how basic science works, in particular how the world we live in works. It is also important to understand how we as human beings affect the environment. While many of you will not need to understand the mechanisms for DNA replication ten years from now, every one of you will need to understand the consequences of pollution, the threats posed by global climate change, and the importance of preserving biodiversity. It is the environment around us that provides the means for survival, so we need to conserve and sustain it. Because of this, I believe in emphasizing practical applications while providing you with the hands-on experience necessary to succeed on your AICE exams. I view myself as a facilitator: I will provide you with chapter question guides, lecture notes, and presentations for all units, but I hope that the majority of your learning occurs in small groups through activities and lab-work. Through your research project, I hope you learn what it means to be a scientist, and come to appreciate the way science is “done.” As you will soon learn, science is not just a body of knowledge, but a process dependent on constant revision and cooperative work.

**Rules**

My classroom has three general, simple rules that are explained on our first day of class. I only set forth rules that I am willing to follow, and promise to always adhere to these as well.

•**Be respectful of yourself, others, and the environment.** Please take care to treat those
around you with respect. As juniors and seniors, many of you are completing difficult coursework and preparing for college. Behave appropriately, don’t speak when others have the class’s attention, and refrain from using cell phones unless you have DIRECT PERMISSION from me. Cell phones are absolutely not allowed during lecture or lab activities.

•**Be honest.** If you are struggling, let me know. I am here to help you and make sure you learn! I am here most mornings by 7:30am and stay after school almost every day. If you ever need extra assistance, don’t wait until the night before a test to get it! In addition to this, always abide by the honor code and complete your own work.

•**Try your best.** I have no doubt that everyone in this class wants to succeed. I will always do my best to help you learn, so I expect your best work and effort in return.

**Policies**

1. **Honor Code**: To succeed in this class and truly learn, you must work to complete your own work. *Academic dishonesty* is giving or receiving unduly amounts help on work to an extent that it is no longer your own. While I encourage students to study and work together, keep in mind that all submitted work should be a representation of what YOU as an individual put forth. For partnered or group lab activities, each member of the group must submit original work. There is a clear difference between copying data, and copying an assignment. On project, group, and laboratory work, any conclusion, analysis, or wrap-up questions MUST be written by you and you alone, in your own words. Any instances of academic dishonesty will result in a zero for all involved students, parents will be notified, and Mr. Testa will be informed of what happened. Cambridge students caught cheating on assignments or examinations could be put on Cambridge probation, or in extreme cases, removed from the program. Please refer to the Cambridge Honor Code for examples of academic dishonesty.
2. **Personal responsibility:** AICE courses are written at the college level and move at a college pace. This makes them an excellent opportunity for you to prepare for higher education, but at the same time, you will have to work hard to learn and keep up with information. All students are expected to come to class prepared, and are expected to participate in lectures and class discussions. Come to class with questions and all reading guides completed by the date of in-class lectures. For lectures that are presented online, please be sure to watch lectures by the assigned date so that you are prepared for our classroom activities. This will make the material MUCH more manageable for you!
3. **Labs:** As a college-level course, we will be doing multiple labs each nine weeks. Some labs will require that you create formal lab write-ups in your notebooks, while other labs will be more short-form in either your notebook or on handouts that I provide. Lab notes and procedures will be taken in lab notebooks unless otherwise specified. Please bring your notebook to class every day!
4. **Materials**: All students need to bring pencils, a calculator, a composition notebook for labs, and blue or black pens ONLY every day in class. You must have a working email address for this class, as some assignments must be submitted to me electronically. Please let me know if you need help with this. I recommend also keeping a 2-inch binder to organize your reading guides, lecture notes, practice questions, and additional work. The first pages in your binder should be this syllabus.
5. **Late and Make-up Work:** All work is due at the beginning of your class period unless otherwise specified. **I do not accept late work for any reason.** If you miss a lab or major activity due to emergency or illness and have an excused absence, speak with me privately to arrange making up the work. You will likely have to stay after school for one-several hours. **It is your responsibility to retrieve your makeup work the day you come back.**
6. **Extra Credit:** Extra credit assignments will periodically become available to you. I will allow you to complete enough extra credit to **raise your grade by 2%**. That is to say, if I give 800 points of tests and assignments during the nine weeks, you will be able to complete 16 points of extra credit (though more than this will be available). Extra credit will be varied, with simpler activities being worth fewer points. Environmental Management and Science students may always submit relevant topic article summaries and opinions for 3 points of extra credit each.
7. **Bathroom policy:** You will receive 6 bathroom passes per nine weeks. These are yours to use at your discretion, but please limit bathroom use during lab activities. Any bathroom passes that go unused at the end of the nine weeks may be turned in for 2 points of extra credit each. Please write your name on all of your bathroom passes once you receive them.
8. **Submitting Work:** Work is accepted in one of two media. You may submit work at the start of the class period during which it’s due (unless otherwise specified), OR you may e-mail me your work by the due time. Lab notebooks and all stages of the research project must be submitted in person, with the exception of announced research components that will be submitted electronically. Submitted work must be neat and written either on provided Cambridge pages or your own paper.Writing needs to be legible and in a dark enough color that I can see it. **If I can’t read it, I won’t grade it.**
9. **Tests and Quizzes:** You are responsible for taking tests and quizzes the day they are given. If you are absent the day of a test or quiz, I reserve the right to give you an alternate, likely all essay version of the exam. If your absence is unexcused, you will earn a zero. All tests and quizzes must be made up within two days of returning from an absence, or else the grade is forfeited. **It is your responsibility to keep track of this and schedule a make-up exam before or after school.**
10. **Classroom reminders:** Would you like to receive reminders about assignments that are due, special materials to bring in, and test dates? You can follow me on Twitter (@MsPaxsonScience) for updates and interesting science facts. Additionally, you can receive text message reminders through the remind101 service. To sign up for these alerts, text “@aicea” to (352) 415-9524. Please check with your parents before signing up for text services.
11. **Animals and Vivaria:** I have several animals, plants, and terraria set up in my classroom. Some of these animals may be held, but **only with my express permission.** Please treat my classroom pets with the same respect you would treat your own. Anyone who harasses an animal, opens cages without permission, or intentionally harms any of the animals will be written up with serious consequences, and parents will be called. Classroom animals are a privilege, and only by following careful instructions regarding them can I guarantee their safety.
12. **3D Printing and Scanning:** Throughout the year we will use 3D printers and scanners to help us model environmental change over time. When using this equipment, it is essential that you follow all instructions and safety precautions. Any students disobeying safety codes will not be allowed to use the 3D equipment for the rest of the year, and will receive a zero on the corresponding assignment.

**Grading Policies**

Your grade in this class will be based on a **total point system**. You’re able to calculate your grade at any point by adding up how many points you have earned and dividing by how many points are possible. You may also check Infinite Campus for accurate grades soon after many assignments. While I promise to grade assignments as quickly as possible, I have many students I will be assessing regularly! Your learning will be assessed using the following methods:

1. **Tests/Exams** **(100 or 75 points each, one per unit with some smaller units potentially combined)**: Tests will all be based on past AICE exams. They will comprise of a mix of multiple choice, free response, essay, and diagram questions.
2. **Research Project Progress Checks (50 points for 1st and 2nd nine weeks, 100 points for 3rd and 4th nine weeks):** To ensure that you are working towards completing your required research project for this course, we will have mandatory progress checks on your research. These dates will be announced well in advance, and will include proposals, research data books, drafts, and final copies of your research. All research checks and final research MUST be typed.
3. **Labs (20-40 points for handout labs, 4-7 each nine weeks, plus 40-100 point lab notebook grade each nine weeks):** You will be required to keep a lab notebook to be graded each nine weeks..
4. **Guided Reading Assignments (20-40 points each, one per unit):** I will provide question prior to each unit to complete while reading the textbook. These will be due the first day of lecture on a new topic.
5. **Test Reviews (20-40 points each, one per unit):** I will provide question sets and review questions to help prepare you for each exam. These are due the day of the test, prior to beginning the exam.
6. **Small, additional assignments:** These will be occasional and varied, and will typically be worth 5-30 class points.

The Alachua County Grading Scale is used for this course. As I offer 2% extra credit, there will be **NO rounding up of grades.** Please do not come to me at the end of the semester and say you are only 0.3% away from a B. The extra credit is to buffer against these situations.

Grading scale:

 A = 90 - 100 C = 70 – 76.99

 B+ = 87 – 89.99 D+ = 67 – 69.99

 B = 80 – 86.99 D = 60 – 66.99

 C+ = 77 – 79.99 F = 0 – 59.99

I am looking forward to an excellent year in AICE Environmental Management! I have a lot of fun labs and activities planned, and cannot wait to get started. Please let me know at any point if you have questions, and parents are always able to contact me by e-mail or by leaving a message with the school. Thank you all in advance for your hard work and positive outlooks for the year ahead!

**After reviewing the syllabus with your parent, please return the following (DUE FRIDAY, AUGUST 19, 2016) for a grade.**

**I have read Ms. Paxson’s syllabus and understand what is expected of me in AICE Environmental Management. I also understand all of Ms. Paxson’s policies and I agree to follow them in her classroom.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student’s Name (Please Print)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student’s email address

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_

Student’s Signature Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent’s Name (Please Print)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent’s email address / phone number

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent’s Signature Date