

# Environmental Science for the “Greta’s” of the World

## Advanced Placement

*Students will be prepared for the Advanced Placement Exam*

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<b>Grades:</b>	<b>9<sup>th</sup> – 12<sup>th</sup></b>
<b>Prerequisites:</b>	<b>Students should have a basic understanding of mathematics, graphing and experimental design.</b>
<b>Day of Week:</b>	<b>Tuesday</b>
<b>Time of Class:</b>	<b>11:00 am – 12:30 pm ET</b>
<b>Length of Class:</b>	<b>30 weeks</b>
<b>Semester:</b>	<b>Fall 2021, Winter 2022 &amp; Spring 2022</b>
<b>Tuition:</b>	<b>\$600.00</b>

**High School Credit:**      **1 Lab Science**

### **Class Dates:**

#### **Fall Semester**

Week 1: Week of October 4

Week 2: Week of October 11

Week 3: Week of October 18

Week 4: Week of October 25

Week 5: Week of November 1

Week 6: Week of November 8

Week 7: Week of November 15

No classes: November 22 – November 26 (Thanksgiving Week)

Week 8: Week of November 29

Week 9: Week of December 6

Week 10: Week of December 13

Make Up Week: Week of January 3

#### **Winter Semester**

Week 1: Week of January 10

Week 2: Week of January 17

Week 3: Week of January 24

Week 4: Week of January 31

Week 5: Week of February 7

Week 6: Week of February 14

Week 7: Week of February 21

Week 8: Week of February 28

Week 9: Week of March 7

Week 10: Week of March 14

Make Up Week: Week of March 21

### **Spring Semester**

Week 1: Week of March 28

Week 2: Week of April 4

Week 3: Week of April 11

No classes: Week of April 18 – 22 (Spring Break: Passover and Easter)

Week 4: Week of April 25

No classes: Week of May 2 – 6 (Eid Al Fitr)

Week 5: Week of May 9

Week 6: Week of May 16

Week 7: Week of May 23

Week 8: Week of May 30

Week 9: Week of June 6

Week 10: Week of June 13

Make Up Week: Week of June 20

**Instructor's Name:** Sarah Pope  
**Instructor's Email:** Sarah@ebbingtides.com  
**Instructor's Phone:** 757-567-4601  
**Instructor's Whats App:** 757-567-4601

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### **Description of Class:**

Environmental Science is an interdisciplinary class. It embraces a wide variety of topics from different areas of study including science, economy, politics and geography.

Environmental science concepts covered in this course include ecology, resources, human population, over consumption, waste management, pollution, and sustainable alternatives.

### **Class Approach:**

This is a web based class with a lab component. Students will be required to read, take notes, and apply concepts in weekly assessments. In addition, each student will design and conduct a long term experiment, with guidance from the teacher that will be peer reviewed and used as a portion of the final grade.

## Goals:

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.

## Textbook:

Friedland & Relyea Environmental Science for AP  
ISBN-13: 978-0716738497

[https://www.amazon.com/Friedland-Relyea-Environmental-Science-AP/dp/071673849X/ref=sr\\_1\\_1?dchild=1&keywords=Friedland+%26+Relyea+Environmental+Science+for+AP+ISBN-13%3A+978-0716738497&qid=1611353971&sr=8-1](https://www.amazon.com/Friedland-Relyea-Environmental-Science-AP/dp/071673849X/ref=sr_1_1?dchild=1&keywords=Friedland+%26+Relyea+Environmental+Science+for+AP+ISBN-13%3A+978-0716738497&qid=1611353971&sr=8-1)

## Additional Supplies/Resources Needed:

- Daily: Computer, printer, headset, microphone, Microsoft word, notebook, pen/pencil, highlighter/markers, calculator
- For Project: 2-3 2 liter bottles, dirt, sand/rocks, water, aquatic plants, alfalfa seeds, pill bugs, snails, beta, etc. Most supplies can be found around the house or outside at no cost. The animal and plants can be found at the pet store for under \$15.

## Requirements:

Each student is responsible for attending the weekly classes, completing all online assignments in canvas, as well as participates in discussions and peer review presentations.

## Weekly Homework:

Print the note sheets, read the weekly reference material, complete online assignments

## Homework Policy:

Student will be required to complete 2-3 hours of homework outside of the weekly classes. Most assignments can be printed and uploaded for grading.

## Additional Policies:

You only get what you put into it. Please be engaged, ask questions, and answer the ones in class.

## Evaluation:

You will have 2-3 quizzes each month, as well as, graded assignments in canvas, and a final project. There will opportunities for extra credit throughout the course.

Class Participation – 20%  
 Quizzes – 20%  
 Weekly HW – 30%  
 Final Project – 30%

### Grading Scale:

Percentages/Grades

100-90: A  
 89-80: B  
 79-70: C  
 69-60: D  
 59 – 0: No effort: F

### Anticipated Weekly Course Schedule:

#### Fall

Week	Topic
Week 1	Introduction to Environmental Science: What is your environmental world view?
Week 2	Easter Island: a lesson in sustainability & ecosystem services
Week 3	Resource use & Tragedy of the commons *Lab
Week 4	Developed vs. developing countries & My ecological Foot print
Week 5	Human Population growth & Earth's carrying capacity *Math
Week 6	Age structure diagrams & human demographics *Graph
Week 7	Human Population control methods
Week 8	Population Ecology-population density & distribution
Week 9	Exponential vs. logistic growth *Lab & Graph
Week 10	Survivorship curves & reproductive strategies *Lab & Graph

#### Winter

Week	Topic
Week 1	Introduction to Ecosystems & Biodiversity
Week 2	Energy flow, primary productivity, trophic levels and food webs *math
Week 3	Matter flow through ecosystems- Biogeochemical Cycles (carbon, water, nitrogen)
Week 4	Ecosystems response to anthropogenic disturbances *Long term Lab
Week 5	Climate, Biomes & Biodiversity *graph & math
Week 6	Land & Water Resources
Week 7	Feeding the world
Week 8	other land use
Week 9	Waste generation & disposal
Week 10	Land Pollution

## Spring

<b>Week</b>	<b>Topic</b>
<b>Week 1</b>	Water Pollution & Eutrophication
<b>Week 2</b>	Powering the World
<b>Week 3</b>	Non-renewable energy resources
<b>Week 4</b>	Air Pollution: Smog
<b>Week 5</b>	Global Warming
<b>Week 6</b>	Ozone Depletion
<b>Week 7</b>	Impacts on Human Health
<b>Week 8</b>	Renewable Energy Resources
<b>Week 9</b>	Sustainable Cities
<b>Week 10</b>	Final Project Presentations