



Taking Action to Combat Climate Change

EDUO 9317 2 Semester Credits/Units

Instructor – Joe Herz

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Course Syllabus

Course Overview

Empower your students to become Ambassadors of Climate Change. Apply free online resources and the required [The Carbon Almanac](#) text to engage students in STEM-related, authentic classroom learning activities. Guide students into knowledge and actions aimed at negating the impact of climate change. Reaching Net Zero will require the involvement of today's [Generation Carbon](#).

Course Learning Objectives

In this course, participants will have opportunity to:

- Understand the factors that impact climate change.
- Create from that understanding, a classroom environment in which students learn and engage in climate change choices.
- Guide students towards becoming knowledgeable and active advocates of climate change and environmental sustainability.

Course Relation to CCS or other Professional Standards

[NGSS Climate Change](#)

[State science and social studies standards for grades kindergarten through 12](#)

How to Submit Coursework

Each completed assignment in this course is submitted to the instructor for review. Follow directions at the end of each assignment on how to prepare and submit your assignments. Name each file submitted with your last name and assignment number (i.e. BrownAssignment3. Make sure you place your full name, course number and assignment number at the top of each document page. You will receive feedback from your instructor within 5 days indicating successful completion of the assignment or the need for revision. Assignment grades will be averaged for the final course grade.

Submit completed work to the corresponding LMS assignment area

Course Modules / Assignments

The Modules contain objectives and assignments. Several assignments are designed to allow your innovative approaches to meeting course objectives. Students you teach and educators you may support, would not benefit from a one-assignment-fits-all approach. Use the resources, your own experiences and your own concerns regarding the impact of climate change to meet module objectives that ask you to create grade appropriate learning. If you have questions about meeting an objective, please contact me jherz@dominicancaonline.com.

Module 1	Climate Change Basics for the Teacher
Objectives	Familiarize yourself with significant factors that contribute to climate change and how to activate students in the process of helping to reach Net Zero.
Assignment	<p>Assignment: Prepare a Climate Change presentation on factors that are contributing to climate change. The audience is a gathering of educators in your district and perhaps surrounding districts. Create a balance of background and facts with an urgency to educate, encourage and guide students of all ages to take action against climate change.</p> <p><i>Note: If you took EDUO 9315, this is a similar assignment to Module 1, B where you created a presentation outline. In this assignment, you are preparing an actual presentation. Many factors outlined in 9135 1B may be similar to what you prepare for this assignment. Here though, your intent is to strongly encourage student action throughout the presentation.</i></p> <p>The presentation can be made with an app of your choice. Follow this format: Goal: Content (media rich but please do not overuse lengthy video clips or links that require time to look through); present data; summarize; leave a challenge for the audience to involve students in age-appropriate study and projects. The presentations “voice” should be yours, not literally, but represents your passion on the topic as opposed to listing facts. <u><i>If the program allows speaker notes, please include what you would be saying to a live audience.</i></u></p> <p><i>Suggested Assignment Resources but not limited to:</i> Syllabus Resources section, locate content to help develop your presentation. The Almanac Collective Pages 20-37 in the Carbon Almanac.</p> <p>Submit Assignment A to the corresponding LMS Module/assignment submission area.</p>
Suggested Activities for Classroom Students	See Resources section of the syllabus
Assessment	All course assignments will be assessed using the course rubric.

Module 2	Climate Change Basics for Students
Objectives	Engage students in grade-level targeted discussions and learning about significant factors that contribute to Climate Change.
Assignment	<p>A) Create a detailed Unit of Study/Assignment on the topic of Climate Change causes and the damage to the environment. The unit can range from introductory to advanced learning, targeted to student age and how it fits into your curriculum.</p> <p>Suggested resources but not limited to: Syllabus Resources Pages 36-37 in the Carbon Almanac. Generation Carbon: It's time to start</p> <p>Submit Assignment A to the corresponding LMS Module/assignment submission area.</p>
Suggested Activities for Classroom Students	See Resources section of the syllabus
Assessment	Module assignments will be assessed using the course rubric.

Module 3	Promote Action using Infographics
Objectives	Combining visual (visual literacy) and text data, design infographics to communicate causes and effects of carbon emissions to climate change.
Assignment(s) Include Activities and Needed Materials	<p>Assignment: Use easel.ly to create 2 infographics to meet the assignment's objective. Be creative. Engage your students' interest. Both should be aligned with your grade level. Each would be displayed in your classroom and online. Several will be used as models for this assignment in Moodle and in the course page at https://dominicancaonline.com/.</p> <p>A) Infographic 1: A broad overview of Climate Change. Include what you have learned about climate change in earlier assignments and perhaps look ahead and in Resources for content ideas. List 3 to 5 key carbon killers. Solutions are not needed on this project. Its goal is to present data through a visually engaging infographic.</p> <p>B) Infographic 2: Select one specific climate change topic for this infographic. Provide details on its impact to the environment and solutions that students and adults can take to reduce the impact.</p> <p>https://www.easel.ly/blog/do-you-know-your-carbon-footprint-a-case-study-infographics/ will provide you with some excellent examples.</p>

	<p>“At Easel.ly, we believe that each one of us can take small yet significant steps to protect our planet and future generations from rising global greenhouse gas emissions.”</p> <p>Submit Assignment A as one Word or pdf document to the corresponding LMS Module/assignment submission area. The document must contain:</p> <p>A) Links to your infographics. Share with jherzdominicancourses@gmail.com</p> <p>B) A 5-6 sentence overview of the experience and probable uses of both products.</p>
Suggested extension Activities for Classroom Students	<p>Use: https://piktochart.com/ as an option instead of easel.ly</p> <p>See Resources section of the syllabus</p>
Assessment	Module assignments will be assessed using the course rubric.

Module 4	Empowering Students in Community Action
Objectives	The National Wildlife Federation’s Eco-Schools USA program <i>“Whole school communities can play a key role in reducing greenhouse gas emissions by taking actions that can shrink their carbon footprints. Schools can take a systems-thinking approach to engage in evidence-based science investigations in efforts to reduce their overall carbon footprint and, through collaboration, design resilience and mitigation solutions to the climate crisis.”</i>
Assignment(s) Include Activities and Needed Materials	<p>Assignment: There are 4 sections to complete for this assignment, A, B, C and D.</p> <p>A. Review the NWF site. Create a single page document telling parents why and how you will be using this site in your classroom. If you are not a classroom teacher, you can still support use of this site for students you work with.</p> <p>B. Select 2 grade-level appropriate activities or projects from the Activities and Resources page at https://www.nwf.org/Eco-Schools-USA/Resources# that you could use with your students. For each of the five, separately:</p> <ol style="list-style-type: none"> 1) Why you selected it. How does it fit into your curriculum, local environment, community, student interests or other reasons for your selection. 3) When and how you would integrate it into your classroom. i.e. Language Arts, Science, STEM, Social Science or ? <p>C. Select two pathways from Climate Change Pathway (Pathway to Sustainability) for your grade level. Non classroom teachers, select a path you can support. Describe in a two-page document, one page for each pathway;</p> <ol style="list-style-type: none"> a. How you can have your students take this path using the Seven Step Framework. b. List several activities you would have them participate in.

	<p>D. You will not be conducting an audit for this assignment but, you will create 2 plans from Plan for Action. Review the samples and then create your own 2 plans using the appropriate Blank Action Plan templates,</p> <p>Submit A-D in one document. Label each section, A, B, C and D. Use single spaced 12 point font. Turn in your document to the corresponding LMS drop assignment area. If submitting via Google Drive, follow the Google Drive submit instructions found above the Module assignments.</p>
Suggested extension Activities for Classroom Students	See Resources section of the syllabus
Assessment	Module assignments will be assessed using the course rubric.

Module 5	Reducing Food Waste
Objectives	<p>Learn and apply The Impact of Food Waste on the Environment:</p> <p>A. Start a <u>classroom program</u> to mitigate Food Waste as one step to slowing climate change.</p> <p>Create a 10-slide presentation or 2-minute video to show to your students or, if not a classroom teacher, to a group of students in your school. The presentation or video will provide some food waste facts including the impact on climate change and will include actions that each student can take to personally to cut back on food waste.</p> <p>Use what you have gleaned from the activity resources to support the presentation.</p> <p>B. Create a Unit of Study assignment guiding each student or small groups of students, <u>to create for parents/family</u>, facts and suggestions on how to stop food waste. Depending on your grade level:</p> <ul style="list-style-type: none"> - a small booklet of drawings and facts depicting food waste and solutions - a 6-8 slide presentation or, a video - a website or blog - hand-made posters - your own ideas <p>Their project should include food waste data and give suggestions on curbing food waste at home. The unit will contain grade-appropriate resources. (Example) on the topic.</p>
Assignment(s) Include Activities and Needed Materials	<p>- Review food waste statistics, impact; educational activities: Collect data, ideas, to use in this assignment from these resources and others listed here.</p> <ul style="list-style-type: none"> o Review the contents of Imperfect Foods o Review the contents of Consumer Reports article o Review the contents of WWF; Fight climate change by preventing food waste; Be a Food Waste Warrior

	<ul style="list-style-type: none"> ▪ Weekly Plans; Week 1 Plans; Day 2: Learn about FOOD'S CONNECTION TO NATURE ○ EPA Preventing Wasted Food At Home ○ USDA Why should we care about food waste? (Schools) ○ Kids Go Green: Reducing Food Waste ○ The Carbon Almanac - Solutions: Food Waste and Food Loss, p.201/ <p>Submit Assignments A and B to the corresponding LMS Module/assignment submission area</p>
Suggested extension Activities for Classroom Students	See Resources section of the syllabus
Assessment	Module assignments will be assessed using the course rubric.

Module 6	Solutions – Supporting Student Voice through Action
Objectives	Facilitate authentic learning opportunities that empower students in becoming classroom / grade level Ambassadors of Climate Change.
Assignment(s) Include Activities and Needed Materials	<p>Assignment: Select from the Climate Change Resources, three teaching/learning ideas you can use with your classroom.</p> <p>A) Create, for your classroom, a Prezi, Slides or PP presentation as a lead-in to your three ideas. From within the presentation, link directly to at least 2, short YouTube or other videos that will support engaging your students in climate change actions. Keep your video choices under 2 minutes.</p> <p>B) Your three ideas can all be on one document or on three separate documents. Each idea/activity must be detailed as a mini-unit of study that engages students in action-activities that apply to classroom or grade level suggestions that will reduce carbon pollution.</p> <p>Assignment Resources:</p> <ul style="list-style-type: none"> - Resources section of the syllabus - Carbon Almanac for Kids - The Carbon Almanac Collective – <ul style="list-style-type: none"> - Apple Carbon Almanac Connection Podcast Library - Google Carbon Almanac Connection Podcast Library - Look for local Clean Air programs in your area (example program) <p>Submit Assignment A and B to the corresponding LMS Module/assignment submission area. Assignment A can be a link to your presentation.</p>
Suggested extension Activities for Classroom Students	See Resources section of the syllabus
Assessment	Module assignments will be assessed using the course rubric.

Course Assessment Rubric:

EXCELLENT	ACCEPTABLE	NOT ACCEPTABLE
Meets or Exceeds Course Objectives: A to A-	Majority of Work Meets Course Objectives; B+ to B-	Needs Considerable Improvement: Resubmit Work Suggested: C or below
All work submitted reflects in-depth understanding of course objectives.	Most work submitted reflects in-depth understanding of course objectives.	Work shows little or no in-depth understanding of course objectives.
Assignment responses show evidence of new knowledge evidenced by thoughtful, detailed and accurate assignment responses.	Most assignment responses show evidence of new knowledge evidenced by thoughtful, detailed and accurate assignment responses.	Responses show little to no evidence of new knowledge as evidenced by lack of thoughtful, detailed and accurate assignment responses.
Work submitted was organized and clearly articulated. The student carefully followed all assignment instructions. The instructor did not have to provide continual assignment clarification or request revisions.	Most work submitted was organized and clearly articulated. The student carefully followed all assignment instructions. The instructor had to provide continual assignment clarification or ask for revisions.	Work submitted was not organized or not clearly articulated. The instructor had to provide constant clarification and ask for continued revisions.
Assignment content and required projects were original.	Assignment content and required projects were original.	Evidence that not all assignment content and required projects were original.
Work is free of spelling and/or grammatical errors.	Work has few spelling and/or grammatical errors.	Work has numerous spelling and/or grammatical errors.

Course Resources:

Required Text: [The Carbon Almanac](#)

Suggested Supplement (free) [The Carbon Almanac Educators' Guide](#)

Suggested Support: Podcast – [The Almanac Collective](#): The Educators Guide, Facilitating Conversations with Podcasts & How to Use the Carbon Almanac as a Teaching Tool

[Generation Carbon](#)

Shared Lesson Plans:

- Be Part of the Solution, Not the Pollution! *ELA/Science 3rd*

Lesson/Assignment ideas across curriculums. Be innovative. Reports and presentations can quickly disengage creativity when repeatedly assigned. Not all projects need to be digital.

- Create an imaginary diary of a 12-year-old to adult, on their efforts and results to curb climate change over their lifetime.

- Point of View story of a living entity, land or sea or air, that is struggling to live and continue producing offspring in a worsening global environment.

- A current population on the planet whose homes, work and future are being impacted by climate change.

- Review and present as a news program changing economics and business models that are adapting to meet climate change challenges.

- Produce a digital story/video, podcast or personal narrative on climate change.

- Create an imaginary living environment for the year 2060 if climate change continues.

- Tell learning through stories or skits.

Miscellaneous beneficients:

- Switch from Google or other search engines to [Ecosia](#) - The search engine that plants trees.
- WWF International: [Our Planet: Our Business](#) “The global business community can be a powerful force to drive action for nature - find out why we are confident that change is possible.”
- Look for Climate Friendly businesses on and offline.

Videos:

- [Generation Carbon](#)
- [Generation Carbon – A Carbon Almanac for Kids](#) Free Download or purchase
- [What is Climate Change? Explore the Causes of Climate Change](#)
- [Climate Change for Kids | A fun engaging introduction to climate change for kids](#)

Support Links for background and Curriculum development:

- [Google Earth time lapse](#)
- [Teaching Climate – NOAA Climate.gov](#)
- [EPA EnviroAtlas Educational Materials](#)
- <https://climatechampions.ucsd.edu/k12-curriculum/>
- <https://www.cde.ca.gov/ci/sc/ee/>
- <https://www.npr.org/2019/04/25/716359470/eight-ways-to-teach-climate-change-in-almost-any-classroom>
- [NASA Global Climate Change – Vital Signs of the Planet](#) [Images of Change](#)
- 36 organizations helping solve the climate crisis
<https://foodtank.com/news/2020/10/36-organizations-helping-solve-the-climate-crisis/>
- 7 climate change organizations you should know
<https://www.idealists.org/en/careers/7-climate-change-organizations-you-should-know>
- [The Almanac Collective](#): The Educators Guide, Facilitating Conversations with Podcasts & How to Use the Carbon Almanac as a Teaching Tool. The Carbon Connection highlights conversations about the many facets of climate change. These conversations are about hope, advocacy, and changing our future. Have your students record their own episode right there at the site!
- Climate Change Education Overview and 7-12 curriculum – [Stanford University](#)
- [Climate Change and You-What You Can Do at School](#)
- [University of Oxford; Net Zero](#)
- [SLO County APCD](#) (look for programs in your area)

Food Waste's Impact on the Environment

- [Food Waste Reduction Strategies In K-12 Schools](#)
- [Stop Food Waste Challenge 2022](#)
- [Google Image resource links](#)
- **The Carbon Almanac - Solutions: Food Waste and Food Loss**, p.201

Unit of Study Content:

- Lesson title
- Grade level
- Standards covered (CCSS, ISTE or others that pertain to the assignment objectives and outcomes)
- Learning targets / objectives (at least 4)
- Expected product outcomes (at least 4 detailed)
- Lesson procedure (detailed chronology)