Module Plan

Imagining Science

CUNY Class Information: SCP 231.272A (General Physics 1

International Class Information:

Project Description:
International collaboration between LaGuardia Community College and Vimala College (Autonomous). The LaGuardia class will have approximately 24 students and there will be approximately 12 students from Vimala College. There will be four students from LaGuardia paired with two students from Vimala. The project will occur over a five-week period, with most activities done asynchronously. Students will begin the project by introducing themselves asynchronously via Slack. Then, they will be divided into groups where they analyze a few readings from a scientific and science fiction perspective. The project will culminate in a three-week period where the students watch and analyze a a climate fiction movie. Physics students will analyze how realistic it is from a physics perspective and discuss energy consumption and sustainability and how energy use affects climate.

Student Learning Outcomes:

By the end of the COIL session, the LaGuardia students will be able to critically analyze scientific inaccuracies in popular media by applying the principles of mechanics, specifically through the lens of energy consumption and compare their findings with their peers.

The LaGuardia students will also develop the ability to communicate across cultures and disciplines to explore ways to minimize the effects of climate change to ensure sustainable consumption and production patterns.

The Vimala College students will:

Participation Policy: All components of the project are mandatory and will be graded. Students will lose points for not submitting each task by the deadline.

Assessment and Grading: 10% of overall class grade. Scaffolded so each part is separate. Have a final project worth 7% of overall grade, comparative analysis is 2% of overall grade, asynchronous icebreaker is 0.5% of overall grade and post exchange survey and reflection is 0.5%. Will need to develop rubrics for each part.

Online Platforms: Slack, Zoom

Tentative Calendar and Activities:

Start in April

Outline:

Week 1: The students will introduce themselves, their interests and their hobbies. Each student will record a brief video that they can post to Slack. They will also be required to respond to one post from a student from the other college. If possible, we will arrange a synchronous Zoom classroom meeting.

Instructions:

1) Create a FREE account on Slack. Slack is a platform that allows us to communicate with our classmates in India.
2) You should join the following link: https://join.slack.com/t/coilspring2024/shared_invite/zt-2fqq4l2dh-uT625I4iAv4Ks9axhqZOQQ
3) This assignment will be posted in #introductions.
4) Make a brief video where you introduce yourself. Briefly describe your background (your upbringing), as well as a hobby or interest you might have.
5) Watch a video submitted by a student from Vimala College. Reply to their video with your own comments. You must discuss something the student says specifically in their video.
6) You must do Steps 4 AND 5 to receive full credit.

Weeks 2-3: Comparative analysis: The students will be divided into groups. Each group will read *The complicated relationship between science and sci-fi (https://physicsworld.com/a/the-complicated-relationship-between-science-and-sci-fi/)* Physics students will consider what science is and how it can be used to describe the world, while English students will consider the role science fiction plays in the world. The students will compare and contrast their analysis. All students will also read *Climate Change (https://www.aps.org/policy/reports/popa-reports/energy/climate.cfm)* so they have a general overview of what climate change is and why it is occurring. Both readings are posted.

Instructions:

1) Read both articles.

2) Summarize each article in a paragraph. In a third paragraph, discuss what role you think physics plays in describing the world around us. How do YOU think knowledge of physics can help prevent future climate change?
3) Each student must send these three paragraphs to their group members in the appropriate Slack channel. As a group, you must compare and contrast your responses (my class) to your classmates at Vimala. As a guiding point, think about the difference between science and science fiction and how we can use both to combat climate change.
4) Compile one document (one document per group) to be uploaded to Blackboard. The idea here is you are combining the responses of you and your classmates to write one short paper. This document must contain:
    a) a paragraph summarizing the first article
    b) a paragraph summarizing the second article
    c) a paragraph comparing and contrasting how science (physics) and science fiction can be used to combat climate change.

Weeks 4-6: COIL Final Project

Instructions:

Each group will be assigned one movie to view. At the end, you will be asked to put together a Slide Show presentation. If you use Google Slides (which is free), all group member can access and edit the slides in real time.

You will record your presentation and post to Slack. Each group member must record their own speaking part and post to Slack. Coordinate so that the videos are in order (it's one presentation where you all speak for around 2 minutes).

The presentation should be about **10 minutes**.

- You will work with your group members to analyze a climate fiction film.
- As a group you will create a Powerpoint using Google Slides and plan your presentation. You should also discuss your plan in Slack.

For the First Week :

1) Create a timeline for when and how parts of the presentation will be completed:
    - by when should the slides be completed?
    - do you want to have a follow up group meeting?
    - how will the group communicate? what platform?
2) Assign roles:

- Who will set this up group communication and platform?
- Will someone serve as group leader to check in with everyone?
- Who will complete each part (or slide)?
- Who will discuss each slide during class?
- If you plan to use a video clip, who will find it?
- **Everyone must have a speaking role during the presentation.**

*This should be done as soon as possible. You will only have a week to complete this presentation.

During the Week:

- Discuss answers to each of the questions on the film worksheet.
- Take notes as your classmates speak. The content of the Google Slides will come from your answers to these questions and discussion.
- As a group, choose which examples and quotes from the film that are most appropriate and effective.
- Work on the slides

Suggestions for Organizing Slides (You should not have more than 5 slides.)
Use this outline as a guide. Your slides should not be too wordy. Write notes for yourself to accompany the slides.

You can also show a clip from the film (no more than 3 minutes). This can serve as evidence for one of the sections below.

Slide 1: Film Information (title, director, year, organization) and Group members, class

Slide 2: Summarize the role of climate change in the movie and its effect on the characters. Does the film accurately portray climate change consistent with the alternate Earth from the film? Could the inhabitants of this alternate Earth prevent their current predicament? Could they take actions to improve their world?

Slide 3: Main Point #1 and Examples

Slide 4: Main Point #2 and Examples

Slide 5: Are there any similarities between the film and our Earth? Compare and contrast the two.

Suggested viewings:
The Day After Tomorrow
Waterworld
Wall-E
Beasts of the Southern Wild

Snowpiercer
Interstellar

COIL Final Project Worksheet

Watch the movie and answer these questions. Your responses to these questions will be later used in your slideshow presentation.

1) Film information (title, director, year, organization) and group members

2) In a few paragraphs, summarize the role of climate change in the movie and its effect on the characters.

3) Based on your knowledge of physics and energy (as well as energy consumption), does the film accurately portray climate change consistent with the alternate Earth from the film?

4) How can science fiction promote change in the real world?

5) Could the inhabitants of this alternate Earth prevent their current predicament?

6) Could the inhabitants of this alternate Earth take actions (in their present day) to improve their world?

7) Are there any similarities between the film and our Earth? Compare and contrast the two.