

Project Summary: **Environmental Science,** Oct. 2022 Cohort C

Overview

A brief summary of your OER. Explain how the project came about and its importance. ***What do you hope this resource will achieve?***

Comments here

- Introduce students to basic env science principles and concepts
- Awareness of environmental issues, such as quality of air, water, soil, energy, sustainability, stewardship, sound science, instrumentation use and skills for workforce development, lab reports, presentation/communication skills, data interpretation
- Interdisciplinary
- How humans are influenced by those systems
 - Provide direct examples of Louisiana's environmental landscape based on natural and human impact
- Aligned and measurable goals, objectives, outcomes
- Provide global and sustainable solutions to environmental problems
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Motivators

Identify the primary motivators that drive this project:

Comments here

- Free resources to alleviate cost barriers
- OER professional development
- Increase awareness of environmental issues in young adults and any students without environmental knowledge



Course and Audience

What courses will this OER be used in? Identify both the primary student audience (academic level, discipline etc.) and any secondary audiences (instructors, researchers, professionals, other interested parties).

Comments here

The Course is Environmental Science. The students who are in dual enrollment programs, students in high school AP classes and taking college credits from schools, undergrad college students (online or face to face) are the primary audience. Apart from this, instructors, biology, environmental science professionals can use these OER material as their primary source of learning.

Non-majors and novices. Students who may be interested in exploring Env Science as a career or major. Lifelong learners.

Significant Learning Outcomes

- Articulating the overarching learning goals will guide you in the process of locating useful resources and/or creating your own.
- If the OER is assigned to be used in a particular course, list and revise the course outcomes.
- ***What do you want students to learn that will still be with them several years later?***
- Think expansively, beyond “understand and remember” kinds of learning. Use this as an opportunity to build your dream course.

Comments here

We want to deliver learning materials in a way that they have a higher goal of learning and those goals are measurable by the grading system. Non-measurable learning goals will be avoided for better outcome.





Here's a link to an online copy of Bloom's taxonomy, which lists many concrete action verbs we should use to express outcomes and objectives: <https://www.bloomstaxonomy.net/>
Levels 1 (knowledge), 2 (comprehension), and 3 (application) are especially relevant to our course level and outcomes Dr. Kham outlined...check out verbs listed in the center for those 3 levels.

I used Dr. Murty's LO's and chapter outline. The red writing shows what I added. The blue writing just indicates the corresponding chapter.

1. **Analyze** the basic principles of environmental science.

- a. Chapter 1. Introduction

2. Define and understand the vocabulary related to air, water, and soil physical and chemical characteristics and their relevance to all biota of five kingdoms.

- a. **Modified statement:** Define and **identify the physical and chemical characteristics of air, water, and soil**, their relevance **to the three domains of life, and benefits and challenges of each natural resource.**

- b. Chapter 2. Water, Soil, and Air Quality

- c. Chapter 4. Biodegradable and Non-Biodegradable Waste

- d. Chapter 3. Renewable and Non-Renewable Sources of Energy

- e. Chapter 5. Environmental Hazards and Toxicology

3. Recognize terminology and be able to identify the differences among different spheres namely hydro-, litho-, and atmosphere of the biosphere **and illustrate (Be careful with this verb because everyone may not want to illustrate a concept.) nutrient cycling. Rewrite this statement to be more inclusive of chapter 7 since the atmosphere is mentioned.** Possible rewrite: **Explore the differences among different spheres namely hydro-, litho-, and atmosphere and the impacts of molecules (i.e., greenhouse gases) within the atmospheric levels.**

- i. **I do not like my rewrite.**

- b. Chapter 6. Biogeochemical Cycles

- c. Chapter 7. Global Climate and Greenhouse Gases

4. Apply knowledge base to address/solve environmental problems by critical thinking.

- a. All Chapters





5. Utilize technology and its applications to apply environmental concepts in real-world situations.

a. All Chapters

6. **PROPOSED NEW STATEMENT:** Evaluate the diverse responses of peoples, groups, and cultures to environmental issues, themes, & topics.

a. Chapter 8. Impact of Environmental Health on Public Health

b. Chapter 9. Global Nutrition, Starvation and Malnutrition

c. Chapter 10. Environmental Justice

Course Materials Needed

Think about the teaching environments in which your OER will be used. Identify what materials you will need in addition to a core textbook or ancillary materials. You may want to list and link to items like a syllabus, assessments, lesson plans, teaching aids, etc. List these out below.

Comments here

Power Points, Homework weekly assignments with relevant videos on the subject matter, real time problem solving assignments can be added to improve their critical thinking on subject matter.

Quizzes (formative) in Moodle course modules, perhaps also embedded in H5P activities and/or in videos? For formative assessment, what about a forum discussion?

What about a course Glossary? Should the textbook include an index?

- Yes, we should include a course glossary that is separated by chapter and organized by alphabetical order.



Using Existing OER?

Will you be using existing OER to adapt or remix for your purposes. **Scanning the OER landscape in your discipline** will help decide how much content you will need to create in addition to what you can find among already existing materials.

The [OER worksheet linked here](#) will guide you in the process of locating OER and mapping suitable resources to your project.

Structure

1. **Chapter Structure:** *If you are creating a textbook, how will the textbook be structured? (e.g. 3 parts to every chapter, student-facing text plus instructor handbook etc.).*
2. **Adapting/ Remixing:** *Will you be drawing on existing OER? In what ways?*
3. **Supplementary Materials:** *What (if any) accompanying elements (e.g. instructor resources, presentations, quizzes, maps, data sets) will be produced or collected? If you are creating these, how would these be structured?*
4. **Inclusion, Equity, Diversity:** *What voices and representations will you want to use to help convey specific information in your OER? How will you embed the diverse perspectives?*

Comments here

1. Chapter Structure

2. Adapting/Remixing

This will be wonderful to adapt from existing OER and remix and modify then and enrich them with ancillary material.

- I found a lot of Environmental Science OER Textbooks through Merlot. We can sift through the textbooks at a later date.

3. Supplementary Materials



Moodle quizzes? H5P activities? Study guide? Canvas/Moodle modules? Concept Connection Cards?

Teaching aides?

4. Inclusion, Equity, Diversity

I wonder what y'all think of including Opposing Views chapters at the end of the book. If you've ever used CQ Researcher database, most of their reports contain Opposing Viewpoints on the issue, which is usually timely and controversial. Just a thought.

- This can be interesting during class discussion. It can also give the teacher/instructor/professor a moment to address biases and how people interpret data. In my microbiology textbook, we follow case studies. We can also present case studies where applicable.

Okay, case studies sounds good.--Andrea

Licensing

Explain what license the OER will carry and why. You may want to link to external resources where readers can go for more information on the CC BY license, such as the [Creative Commons website](#), or the [Rebus Community Licensing Policy](#).

Comments here

We should avoid CC ND resources because they are “non-derivative” and don’t allow modification or derivatives. The license for the course itself should be CC BY because it’s the most open CC license and the OER textbook license used by LOUIS.



It's good practice to include a fair use disclaimer for any restrictive licensed content we may incorporate.

Permission must individually be obtained for each uniquely licensed source or piece of licensed content – even if it's already been published in an OER textbook.

Attribution should always be made, even if it's not required – including at least title, artists/author/content creator, source, and license. Links to both source and license are desired.

Fair use factors must be considered if using any licensed content:

1. The purpose and character of the use, including whether such use is of commercial nature or is for nonprofit educational purposes
2. The nature of the copyrighted work
3. The amount and substantiality of the portion used in relation to the copyrighted work as a whole
4. The effect of the use upon the potential market for, or value of, the copyrighted work.

Anticipated Timeline

Provide an approximate timeline for the project. This doesn't have to be comprehensive, or rigid, but an indicator of dates for major milestones (e.g. chapters submitted, editing complete, peer review complete, layout, accessibility review, initial release, classroom review, etc.).

Comments here



- 6-12 months

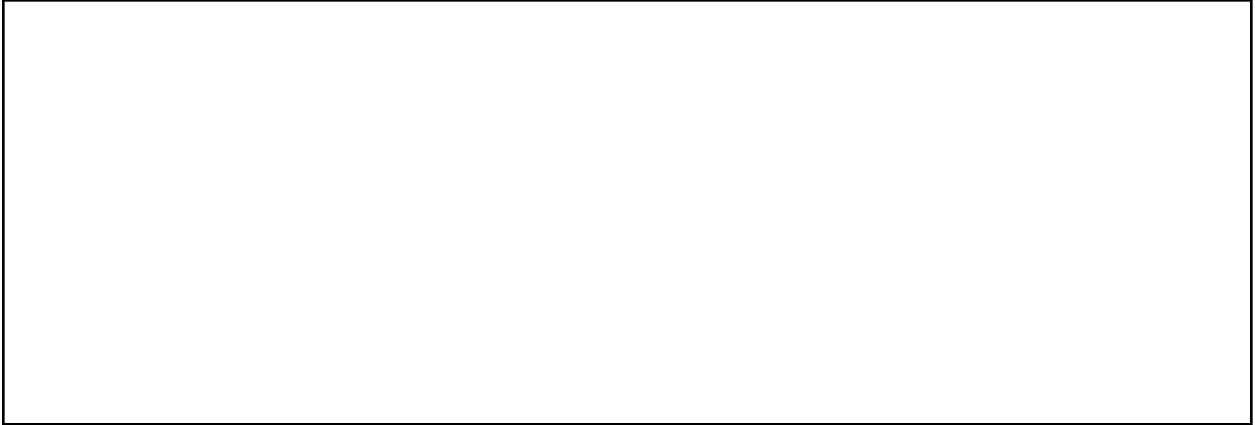
Measures of Success

- How will you know if you've met your goal?
 - What constitutes success, and how will you measure it?
 - Consider indicators along the production process like number of participants, diversity of perspectives (geographic, cultural, social, etc.), feedback opportunities, number of adoptions etc.
 - Also think about student success beyond traditional metrics of grades and focus on deeper learning measures. Do students feel joyful and empowered in the course?
 - These don't have to be comprehensive, but help to clarify what success means to your project, beyond just writing a text.
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Comments here

Working with groups and evaluating each one's contribution by the members will ensure that.





Note that this template can be used in conjunction with the [Session 2 Handout](#):