



ENVS-101: ENVIRONMENTAL SCIENCE

Also listed as: ENVS-101H

Effective Term

Fall 2024

BOT Approval Date

03/09/2023

Discipline

ENVS - Environmental Studies

Course Number

101

Course Title

Environmental Science

Short Title

Environmental Science

Credit Status (CB 04)

D - Credit - Degree applicable

Units

Lecture Units

3.00

Total Units

3.00

Hours

Lecture Contact Hours

48-54

Out of Class Hours Lecture

96-108

Total Contact Hours

48 - 54

Total Out of Class Hours

96 - 108

Total Student Learning Hours

144 - 162

Distance Education

Yes

Distance Education

Distance Education Type

Both Fully Online and Hybrid Online

Does the DE also apply to the Honors section?

Yes



Honors component will meet synchronously (face-to-face or moderated through online technology such as Zoom)

Fully Online Delivery Requirements:

- a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
- b. Any planned face-to-face meetings, such as an orientation or study session, must be optional
- c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods:

- Orientation - Students must be oriented to the online and face-to-face portions at the start of the course.
- Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc.
- Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction.
- MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students.
- Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS.
- Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Honors / Non-honors

ENVS-101H

C-ID (Admin Only)

CB 00

CCC000279208

Course Title

Honors Environmental Science

Approved Cal-GETC Area

AREA-5A

Approved Second Cal-GETC Area

Approved Third Cal-GETC Area

Catalog Description

This course explores the relationship between human society and the environment. A foundation in core principles from the physical and natural sciences is provided as a means of understanding the impacts human actions have on the planet. Contemporary environmental issues are investigated through the lens of sustainability using methods of scientific inquiry.

Codes

TOP Code (CB 03)

0301.00 - Environmental Science

CIP Code

03.0104 - Environmental Science.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

GE Information**Check GE Types Requested**

AA/AS A - Natural and Physical Sciences

Cal-GETC Areas**Approved Cal-GETC Area**

AREA-5A

Learning Objectives**Learning Objectives****Learning Objective**

1. Integrate critical thinking and the tenets of scientific inquiry to assess issues related to the environment.
2. Synthesize interdisciplinary contributions to environmental science from multiple branches of inquiry, including geology, biology, and chemistry.
3. Analyze biogeochemical cycling as it relates to natural systems and anthropogenic impacts.
4. Relate the laws of thermodynamics to natural systems and models for sustainability.
5. Assess the relevance of ecological principles to human interactions with the environment.
6. Differentiate major movements in conservation and environmental management along with acts of environmental legislation at the local, national, and international levels.
7. Evaluate the intersection between economic systems and environmental issues.
8. Assess the impacts of technology, consumption, and the human population on environmental integrity.
9. Reconcile the advantages and impediments to sustainability.
10. Analyze the role of the individual in environmental stewardship.
11. Evaluate environmental justice and critique the disparities of environmental impacts across race, culture, and gender.

Honors Objectives

- Demonstrate original thinking in exploring environmental issues by engaging in research.
- Recognize the implications, applicability, strengths, and shortcomings of conducting environmental research and scientific research in general.
- Apply critical thinking skills to produce rigorous analyses of current environmental issues.
- Conduct individual research and analysis resulting in novel conclusions. Apply course content as the basis for approaching a unique research project on a topic relevant to current issues in environmental science.

Learning Outcome Information**Course Learning Outcomes****Learning Outcome**

The student will consider the impact of human actions on the environment.

The student will apply the principles of biogeochemical cycling to the issue of global climate change.

The student will explore the ethical considerations relevant to biodiversity decline.

Program Learning Outcomes

Learning Outcome

1. Explain how scientific knowledge is obtained and verified.
2. Evaluate the cycling of matter and the flow of energy in environmental systems.
3. Achieve basic environmental literacy.
4. Think critically about environmental issues by drawing on an understanding of scientific principles.
5. Explore the ethical and social considerations inherent in environmental science.
6. Apply the most current environmental discoveries and regulations to contemporary situations.

Institutional Learning Outcomes

Aesthetic Awareness: The student will identify and evaluate how aesthetic expression leads to an appreciation of social and cultural context as well as the values of art and nature.

Critical Thinking: The student will analyze problems, gather and synthesize relevant information, evaluate ideas, information, and evaluate alternative points of view to create, innovate and implement effective solutions.

Scientific Awareness: The student will apply the scientific method of inquiry to assess potential solutions for real-life challenges by employing science-based knowledge and methodologies in daily life.

Content

Course Lecture Content

1. Science and Sustainability
 - a. The Nature of Environmental Science
 - b. The Nature of Science
 - c. Environmental Ethics
 - d. Environmental impact across cultures, geographical regions, and economic groups
2. Matter, Energy, and Ecosystems
 - a. Matter, Chemistry, and the Environment
 - b. Energy Fundamentals
 - c. Ecosystems
 - d. Biogeochemical Cycles
 - e. Global disparities in energy use and alterations to biogeochemical cycles
3. Evolution, Biodiversity, and Population Ecology
 - a. Evolution: The Source of Earth's Biodiversity
 - b. Ecology and the Organism
 - c. Conserving Biodiversity
 - d. Earth's Biomes
 - e. Cultural aspects and valuations of biodiversity
4. Economics, Policy, and Sustainable Development
 - a. Economics and the Environment
 - b. Environmental Policy
 - c. Sustainable Development
 - d. Global disparities in economic development, resource use, and conservation
5. Human Population
 - a. Demography
 - b. Population and Society
 - c. Cultural and gender disparities in the impacts of population growth
6. Soil, Agriculture, and the Future of Food
 - a. The Changing Face of Agriculture
 - b. Soils
 - c. Genetically Modified Food
 - d. Sustainable Agriculture
 - e. Regional elements of food security
 - i. Food deserts and environmental justice
7. Biodiversity and Conservation Biology

- a. Biogeography
- b. Conservation and Restoration
 - i. Biocapacity and sustainability in the developed and developing regions of the world
- 8. Forests, Forest Management, and Protected Areas
 - a. Forest Ecosystems and Forest Resources
 - b. Deforestation
 - c. Forest Management
 - d. Geographical disparities in forest degradation and impacts on local communities
- 9. Environmental Health and Toxicology
 - a. Environmental Health
 - b. Toxic Substances
 - c. Risk Assessment and Risk Management
 - d. Social and economic impacts of toxic contamination across diverse populations
- 10. Geology, Minerals, and Mining
 - a. Rock Cycle
 - b. Geologic and Natural Hazards
 - c. Earth's Mineral Resources
 - d. Mining Methods and Their Impacts
 - e. People and the impacts of mining on local communities and marginalized groups
- 11. Fresh Water, Oceans, and Coasts
 - a. Freshwater Systems
 - b. The Oceans
 - c. Water Pollution and Its Control
 - d. Human societies and access to clean water
- 12. Atmospheric Science, Air Quality, and Pollution Control
 - a. The Atmosphere
 - b. Outdoor Air Quality
 - c. Indoor Air Quality
 - d. Impacts of air pollution on people around the world
- 13. Global Climate Change
 - a. Current and Future Trends and Impacts
 - b. Responding to Climate Change
 - c. Disparities in the effects of climate disruption on people of different regions.
- 14. Nonrenewable Energy Sources, Their Impacts, and Energy Conservation
 - a. Fossil Fuels: Their Formation, Extraction, and Use
 - b. Energy Efficiency and Conservation
 - c. Nuclear Power
 - d. Energy use disparities and environmental impact
- 15. Renewable Energy Alternatives
 - a. Renewable Energy Sources
 - b. Access to renewable and clean energy
- 16. Managing Our Waste
 - a. Municipal Solid Waste
 - b. Industrial Solid Waste
 - c. Hazardous Waste
 - d. Impacts of pollution on people inhabiting different regions of the world
- 17. The Urban Environment
 - a. Sprawl
 - b. Urban Sustainability
 - c. Economic disparities and the move toward sustainability

Honors Content

- The honors component of the course will cover the same content as the regular ENVS 101 course. In addition, Honors students will explore topics at a greater depth.
- Honors assignments will require students to generate their own data or utilize open-source data sets to investigate a topic relevant to environmental science at a level that goes beyond the standard library research paper.

- Students will work under the guidance of their instructor to determine the best analytical approach to understanding the chosen topic. Representative topics may include but are not limited to, issues pertaining to the consumption of resources, generation of renewable energy, production of agricultural commodities, or conservation of natural resources. Pertinent examples include analyzing carbon emissions as a proxy for resource consumption relative to affluence, the impact of the adoption of small-scale rooftop solar installations on regional air quality, a spatial analysis of food deserts relative to population demographics, or an exploration of water use and availability relative to regional variables within California.
- Successful research assignments will depend on students' use, understanding, and application of the scientific method and critical thinking skills.

Methods of Instruction

Method

Discussion

Integration

Large and small group discussions on a variety of natural and social science issues as they relate to the study of humans in their ecosystem. For example, students may be assigned articles relating to political aspects of environmental science and asked to discuss the manner in which politics and media coverage can distort pertinent issues. Students will explore the extent to which environmental concerns affect different genders and cultural groups differently.

DE Adaptations for MOI

Student discussion will be achieved via asynchronous communication using the online discussion forum feature of the course management system.

Method

Group Projects

Integration

Students will work in groups to engage in critical thinking activities focusing on case study analysis of current environmental topics. For example, students may be asked to work in groups to brainstorm what factors hinder their local communities from functioning like an ecosystem in terms of energy flow and to propose ways in which this could be enhanced. Students will explore whether the model of sustainability is equally accessible to all, regardless of economic class and cultural community.

DE Adaptations for MOI

Groups will be formed within the course management system and collaborations will be achieved via asynchronous communication using the online discussion forum feature. Alternatively, students can meet through an accessible video conferencing application to interact and collaborate.

Method

Critique

Integration

Students will critically assess information from various sources. For example, students may be asked to read and contrast two scientific articles focused on environmental issues that yield conflicting results or lead to conflicting conclusions. Students would then be asked to write a critique of the articles, citing biases in the methodologies used and in the authors' interpretations of the results. A particular example could include studies on the effects of developing alternative energy technologies on global climate change.

DE Adaptations for MOI

Students will base their analysis of environmental research on articles that can be accessed online through the MSJC library databases. Critiques will be uploaded through the Assignment feature on the course management system.

Method

Observation and Demonstration

Integration

Demonstrations of lab and research techniques typically employed in environmental monitoring will be provided by the instructor.

DE Adaptations for MOI

Demonstrations will be facilitated using a wide variety of accessible multi-media approaches, including short video clips, animations, and graphics.

Method

Lecture

Integration

Lectures will be presented using a variety of multi-media approaches to demonstrate major concepts relating to human interactions with their environment. Content will highlight concerns relevant to a broad spectrum of diverse lived experiences, including case studies and examples that highlight the rich tapestry of human diversity.

DE Adaptations for MOI

Lectures will be delivered in an online environment using the Course Management System. Lectures may be PowerPoint presentations, written narratives, or accessible video lectures posted for the students to access.

Additional Methods of Instruction for Honors

Students will meet with their instructor regularly throughout the semester (a minimum of 3 times, possibly more) to evaluate progress on the honors project and to discuss relevant issues further. Students will receive guidance on applying scientific approaches to gathering, manipulating, and interpreting data.

Individual or small-group lectures or workshops will focus on research techniques and demonstrate skills necessary to be discerning in the evaluation of reputable sources of data and information.

Students will be provided additional readings and resources relevant to their research topic and will be expected to consider their significance and integrate the content into their overall understanding of the issue they are investigating.

Methods of Evaluation**Method**

Exams/Tests

Integration

Examinations will be used to assess the student's understanding and grasp of the course content. Examinations may be multiple-choice, written, or oral. A variety of assessment strategies will be integrated into the course in order to accommodate diverse learning styles and means of demonstrating fluency with the material.

DE Adaptations for MOE

Examinations will be given through the online course management system, and may consist of multiple choice, true/false, matching, or written essay questions. Feedback will be provided in a timely manner to allow students to develop proficiency as they proceed through the course.

Method

Group Projects

Integration

Group projects and discussions will involve students in critical thinking interactions and activities concerning current environmental issues and topics. Students will be encouraged to highlight their unique perspectives and diverse experiences. Topics will explore issues that challenge the group to address global inequities in the use and access to environmental resources. Evaluation will be based on participation, demonstrated comprehension of the material, and understanding of the issues and arguments being discussed.

DE Adaptations for MOE

Evaluation will be based upon participation, demonstrated comprehension of the material, and understanding of the issues and arguments being discussed. Evidence will be provided by the student interactions within the discussion forum. Feedback will be provided in a timely fashion and should be available for students before the next iteration of the assignment, so that they may act on suggestions and improve performance. A clear rubric will be presented to guide students and establish expectations for participation.

Method

Papers

Integration

Students will prepare essays based on case studies and current events as they relate to course content. An example is the investigation of case studies and the application of environmental science concepts presented in the course. Students will be graded based on their ability to synergistically evaluate convoluted issues and present an assessment based on sound science and strong, well-developed arguments.

DE Adaptations for MOE

Finished products will be submitted for evaluation through the assignments feature of the course management system, where timely feedback will also be provided. Papers will be scored against a clear rubric to ensure equitable allocation of grades and to enhance the value of the instructor's feedback.

Method

Research Projects

Integration

Students will engage in a research project that will involve the use of published scientific literature. Students will be graded based on their ability to assess the scientific validity of their sources, professional presentation of their work, and their ability to reflect on the impact of what they have learned has on diverse peoples and regions of the world.

DE Adaptations for MOE

Completed research projects will be submitted for evaluation through the assignments feature of the course management system, where instructors will provide timely feedback. Rubrics will be employed to ensure that students are aware of expectations and receive valuable feedback.

Evaluation of Honors assignments

Students in ENVS 101H will complete all of the requirements for the regular ENVS 101 course and will be graded according to the standards set for the regular course. To receive honors credit, students must successfully complete regular course and honors supplemental assignments.

Written research projects will be assessed based on the appropriate application of the scientific method, a valid interpretation of the data collected or used, the relevance of the conclusions drawn from the research, the number and quality of citations, scientific accuracy of the content, originality of work and proper formatting (such as APA).

Assignments**Assignment Type**

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Calculate your ecological footprint using an online calculator. Write a 1-2 page essay discussing your results in relation to the per capita averages from other parts of the world. Investigate the concept of environmental justice by exploring which regions of the world and which cultures are the biggest contributors to environmental degradation and which are the most impacted by it.

How assignment will be adapted in online format

Assignments will be posted in the course management system with clear instructions related to locating and interacting with the data calculator. Students will calculate their ecological footprint online. Completed essays will be submitted through the assignment feature of the course management system.

Assignment Type

Other

In-class and/or outside of class

In-class

Formative or Summative

Summative

Assignment

In a small group, develop a survey to assess people's understanding of plastic pollution as well as their disposition toward regulations aimed at curtailing plastic use. Collect data from a minimum of forty respondents. Discuss the data with your group and then individually write a 2-3 page paper discussing your results.

How assignment will be adapted in online format

The assignment will be posted in the course management system. Groups will be created and students will interact with their peers in the discussion forum. A free and accessible online survey application will be used to develop the survey and to collect data. Papers will be submitted through the assignment feature of the course management system.

Assignment Type

Reading

In-class and/or outside of class

In-class

Formative or Summative

Summative

Assignment

Read the research methods that have allowed for the accumulation of data upon which the human ecological footprint concept is based. In addition, visit the Open Data Platform of the Global Footprint Network (<https://data.footprintnetwork.org/#/>) and interpret spatial disparities of environmental impact based on ecological deficit and total biocapacity for two regions of the world of your choosing. Summarize the key conclusions that can be drawn from this comparison in a poster presentation.

How assignment will be adapted in online format

Students will engage with the research materials as well as the data platform online. Poster presentations can be created digitally and delivered in a virtual poster session hosted in the course management system. Students can engage directly with the instructor for guidance via asynchronous communication or real-time discussions using conferencing applications. Students will share their work with their peers in the online forum of the poster session.

Honors Assignments**Assignment**

Students will complete all regular course requirements for ENVS 101 and be graded according to the standards used for the rest of the class. In addition, students will be expected to complete one of Options A, or B, as well as Option C.

Required or Optional

Required

Assignment

Option A: Students will use their in-depth knowledge of their chosen topic as the foundation for building an independent research project. The core requirement is that students must manipulate and interpret data in a way that allows them to address a particular question and develop novel conclusions. Students may elect to gather their own data using a variety of methods, or they may opt to use open-source data sets such as those provided by the National Oceanic and Atmospheric Administration.

Sample topics may include A geospatial analysis of food deserts in the Inland Empire; a public opinion survey of people's disposition to California's proposed plastic bag ban; a spatial-temporal analysis of wildfire intensity in southern California and its effect on property values and insurance premiums; a survey of burrowing owl populations at the San Jacinto Wildlife Area.

The results of the research will be presented in a research paper of 5-8 pages in length, with a minimum of five peer-reviewed references.

Required or Optional

Optional

Honors Core Values

Academic Rigor and Research

Engagement

Positive Transgressive Behavior (as evidenced by creativity, innovation, risk taking, challenging norms and standard narratives)

Justify how the assignment reflects the Academic Rigor and Research Core Value

Students will develop a research project based on their strong foundation in the core principles presented in the class. They will use data, either generated as a part of their project or borrowed from an open source, to address a question or problem.

Justify how the assignment reflects the Engagement Core Value

Students will move beyond reporting on what they have learned about a topic and engage directly with the scientific endeavor. This is easier than ever to accomplish with the advent of open-source data collection applications (such as iNaturalist) and the free sharing of datasets on the internet. Engagement in the act of conducting science will empower students to see themselves as scientists and to address questions problems and concerns in a proactive way.

Justify how the assignment reflects the Positive Transgressive Behavior Core Value

Developing a research project involves creativity and innovation. Students will challenge the common narrative that science is the realm of trained professionals in sterile environments. They will be encouraged to challenge this stereotype and see themselves as empowered innovators and problem-solvers.

Assignment

Option B: The student will engage in a service learning project. The student, with the approval of the instructor, will identify a local organization where the student can volunteer to assist in some manner. Examples might include a conservation organization (such as California State Parks), an advocacy group (such as the Coalition for Clean Air), or a water district (such as Eastern Municipal Water District). The student will be expected to volunteer a minimum of 20 hours with this organization over the course of the semester. This experience will be integrated into a research project involving the use of data to address an issue. The data component can be catered to the student's interests. While it may involve an issue related directly to the work experience (for example, an analysis of water testing results over time, as the surrounding communities have expanded), it can also focus on practical elements of the experience (such as job outlook data related to the water treatment industry).

The student will prepare a 4-7 page reflection on the experience incorporating a minimum of 3 outside, academic sources.

Required or Optional

Optional



Honors Core Values

Academic Rigor and Research

Engagement

Positive Transgressive Behavior (as evidenced by creativity, innovation, risk taking, challenging norms and standard narratives)

Justify how the assignment reflects the Academic Rigor and Research Core Value

A component of this option involves both library research and data analysis. Students will demonstrate academic rigor in the synthesis and presentation of findings in a final summative essay.

Justify how the assignment reflects the Engagement Core Value

The volunteer component engages students directly in their community and immerses them in their field of interest. Persistence and commitment to the project are requisite to meet the required number of hours.

Justify how the assignment reflects the Positive Transgressive Behavior Core Value

Students will move beyond the campus environment to engage in a volunteer experience. This requires initiative and commitment. It additionally challenges the norms of learning activities and will empower students to see themselves as a part of a professional community in which they can play an active role and make a positive contribution.

Assignment

Option C: Students will keep a journal documenting their progress through Option A or B. Students will document the refinement of the topic, issue, or question they wish to pursue. They will keep track of relevant citations and data sources, including annotations for quick reference. Any service hours or data collection activities will be included along with notes from meetings with the instructor. The journal can be kept digitally or on paper and should be kept up to date and available for consultation with the instructor so that streamlined and personal guidance can be provided for the development of the research or service learning project.

Required or Optional

Required

Honors Core Values

Academic Rigor and Research

Engagement

Justify how the assignment reflects the Academic Rigor and Research Core Value

Rigorous note-taking and documentation are important to conducting research. This project will support students in the development of a successful Honors project and will underscore the importance of attention to detail in academic endeavors.

Justify how the assignment reflects the Engagement Core Value

Students will be engaged throughout the course of the semester in the ongoing development of the research/service learning project. The journal will provide a record of progress and instill a sense of accountability, ultimately leading to refined product.

Course Materials**Textbooks**

Withgott, Jay H and Matthew M. Laposata (2021). Essential Environment: The Science Behind the Stories. Pearson.
Molles, Manuel (2016). Environment: Science, Issues, Solutions MacMillan. ISBN: 978-0-7167-6187-7

Class Size Information**Class Size**

40

Class Size Category

A - Lecture/discussion 40

Diversity and Inclusion

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

This course provides a broad framework in environmental literacy with a focus on how humans interact with the environment both regionally and globally. Assignments invite students to explore environmental justice issues that affect marginalized communities both domestically and abroad. For example, students will consider how different regions and cultural groups differ in terms of their contributions to environmental degradation as well the extent to which they are impacted by these changes and have access to the resources necessary to confer resilience. Considerations of social justice are integrated into the content and students are invited to explore the ways in which the effects of environmental degradation impact cultures and genders in diverse and unequal ways.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

The course centers on global environmental issues and students are exposed to diverse cultures, voices, and lived experiences. Instruction is focused on eliminating structural barriers to success by incorporating open educational resources and presenting a diverse array of media to connect with a spectrum of learning styles. In addition, students are expected to interact with one another in discussions focused on contemporary issues and to share their perspectives and personal experiences while adhering to norms of inclusivity. Students are encouraged to challenge normative expectations of what it means to engage with science and are provided with the tools to be active in the scientific endeavor regardless of their chosen major or career path.

Interactions

Explain how the course will incorporate student-to-student interaction.

Students will have frequent opportunities to interact with one another in online or in-person discussions focusing on environmental issues. These interactions will augment the other forms of content delivery employed in this course by exposing students to diverse perspectives held by members of their own communities. Students will be encouraged to develop and abide by norms of tolerance and inclusivity.

Explain how the course will incorporate instructor-to-student interaction.

Instructors will participate in and guide group discussions. In the distance education modality, these interactions may be either asynchronous, taking place in the discussion forum or via email communication, or synchronous, via video conferencing. For challenging assignments and projects, instructors will model metacognitive approaches, engaging with students to guide them through complex critical thinking processes. This may include demonstrations of map reading techniques, data interpretation approaches, or interactions with complex primary literature sources. Feedback will be provided either verbally, in writing, or in the course management system. Instructors will be available to answer questions and interact with students directly.

Explain how the course will incorporate student-to-content interaction.

Students will be provided with a variety of accessible forms of media for content delivery. These may include written narratives, journal articles, textbook materials, videos, or verbal lectures. A diverse array of approaches will be employed to accommodate a spectrum of learning styles. For the online modality, these materials will be posted in an accessible format in the course management system, with the lecture component being recorded and captioned. Students will work towards concept mastery through formative assessments, engage in deeper more reflective work through critical writing assignments, and will assess their assimilation of the content through summative assignments. Students will engage with content in active ways, bringing their schema to bear with reading assignments, mining data for meaning, and providing feedback to enhance relevance and relatability.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Students will engage in critical thinking activities that require them to explore environmental issues that directly affect their lives. They will be encouraged to critically assess their ethical stance on contemporary environmental concerns. Students will have the opportunity to reflect on any discordance between their subjective worldview and their understanding of objective science. Students will consider their own relationship to the environment and through a variety of analysis projects explore differences in the ways people around the world interact with their local resources. Through reflection, students will be immersed in the global context of the topics presented in the course.