

Purpose of Course

Environmental Systems and Society is a two-year transdisciplinary course that focuses on the environment as the interaction of multiple Earth systems. In this course we evaluate humankind's role in nature and our obligation to preserve and restore its health and beauty. The interconnected nature of Environmental Systems expands student awareness across disciplines and borders. Scientific fields of Biology, Geology, Climatology and Chemistry are intertwined with human impact and resource management on a global scale. Environmental ethics discussions will be based on case studies from around the world. Hands-on field experiences will be integrated with classroom studies.

Beliefs

As natural resources diminish and global temperatures rise, environmental protection and resource management will prove integral to human health and survival. An understanding of the environment and the systems that compose it are essential to establishing our moral and ethical beliefs. To be responsible decision makers, consumers, and citizens we must critically consider the impact of our decisions and actions on the environment. The study of and development of a personal relationship with the environment can lead to a deeper sense of self and place.

The “Big Questions”

The six ESS Big Questions are designed to encourage a holistic perspective on the relationship between human societies and natural systems. They are discussed throughout the course, providing an opportunity for students to revisit central themes in different contexts. They are:

- A. What strengths and weaknesses of the systems approach and the use of models have been revealed through this topic?
- B. To what extent have the solutions emerging from this topic been directed at preventing environmental impacts, limiting the extent of the environmental impacts, or restoring systems in which environmental impacts have already occurred?
- C. What value systems can you identify at play in the causes and approaches to resolving the issues addressed in this topic?
- D. How does your own value system compare with others you have encountered in the context of issues raised in this topic?
- E. How are the issues addressed in this topic of relevance to sustainability or sustainable development?
- F. In what ways might the solutions explored in this topic alter your predictions for the state of human societies and the biosphere some decades from now?

Assessment Objectives

These objectives reflect how the aims of the ESS course will be assessed. It is the intention of this course that students, in the context of environmental systems and related issues, are able to fulfill the following assessment objectives:

1. Demonstrate knowledge and understanding of relevant:
 - facts and concepts
 - methodologies and techniques
 - values and attitudes.
2. Apply this knowledge and understanding in the analysis of:
 - explanations, concepts and theories
 - data and models
 - case studies in unfamiliar contexts
 - arguments and value systems.

3. Evaluate, justify and synthesize, as appropriate:
 - explanations, theories and models
 - arguments and proposed solutions
 - methods of fieldwork and investigation
 - cultural viewpoints and value systems.
4. Engage with investigations of environmental and societal issues at the local and global level through:
 - evaluating the political, economic and social contexts of issues
 - selecting and applying the appropriate research and practical skills necessary to carry out investigations
 - suggesting collaborative and innovative solutions that demonstrate awareness and respect for the cultural differences and value systems of others.

Assessment objectives 1 and 2, combined, comprise 25% of the course grade. Assessment objective 3 comprises 50% whereas objective 4 comprises 25% of the course grade.

Internal and External Assessments

External Assessments (EA) consist of 2 exams students will sit in the May of their Senior year. These exams will not be marked by your Sturgis teacher, but sent to examiners around the world.

Internal Assessment (IA) consists of a single, student-designed investigation. Your teacher will mark the IA and a small number of student investigations will be selected by the IB to be marked by an examiner at a different school.

Topics:

Year 1:

Foundations of Environmental Systems and Societies
 Ecosystems and ecology
 Biodiversity and conservation
 Human systems and resource use
 Water and aquatic food production systems and societies

Year 2:

Soil systems and terrestrial food production systems and societies
 Atmospheric systems and societies
 Climate change and energy production

Texts

Environmental Systems and Societies for the IB Diploma, 2nd Edition. Guinness, P and Walpole, B.

Living in the Environment, Miller, GT.

Environmental Science, Biozone Workbook

DO NOT write in any of these books. Take really good care of these texts, as they are more expensive than you might think.

Feedback Pledge I pledge to return any submitted work with feedback within 8 school days of when it is submitted.