**“Global Solutions for Sustainable Living”**

# ECOSYSTEMS

Grades: 6-8, Undergraduate, Graduate

Discipline: Interdisciplinary

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## Course Description

“Global Solutions for Sustainable Living” identifies the laws of nature that are inherent in the diverse ecosystems that comprise and sustain life on earth. The air we breathe, the water we drink, the energy we need to sustain ourselves, the food we eat and the buildings we live in are all parts of that system.

Our goal in this course is to identify the critical environmental issues that we face in each of these areas: Ecosystems, Architecture and the Built Environment, Air, Water, Renewable Energy and Agroecology.

Internet research such as the United Nations Environment Program, World Economic Forum, TED talks, You Tube Videos and listed websites will provide students with examples of educational re-sources available and offer access to people and organizations on local, national and international levels dedicated to finding solutions to the critical environmental issues affecting our world. Videos of experts working in each field will introduce you to each module. You will identify an issue in each module that is important to you. Listed websites and internet research will help you under-stand solutions that are being implemented across the world in real time. Your research will help you develop your own solution to the problems you have identified and wish to explore in each module. Six examples of topic questions and solutions are provided for each module. Once you have developed your solution you will present a project from one of the modules that was most important to you and present an action plan that can be applied on an individual, local, state, national or international level.

## Ecosystems

Ecosystems represent the interaction of how the laws of nature work within a specific geographic area. These laws of nature express a unique collection of relationships as energy moves and expands throughout the system creating a rich mixture of biodiversity. These diverse systems support all life on earth; the buildings where we live and work, the air we breathe, critical water resources, energy and the food we eat. Ecosystems contain biotic or living, parts, as well as abiotic factors, or nonliving parts. Biotic factors include plants, animals, and other organisms.

Abiotic factors include rocks, temperature, and humidity. The laws of nature that make up the diverse ecosystems on earth are connected and provide the transfer of energy from one system to another in a larger biome. Biomes are large sections of land, sea, or atmosphere. Forests, ponds, reefs, and tundra are all types of biomes that manifest specific laws of nature that are expressed in the flow of energy from one system to another and are connected that make life on Earth possible.

## Resources

1. VPRO Documentary | Regreening the Desert with John D. Liu
2. Ted.com | Willie Smits - How to Restore a Rainforest
3. The Guardian | Our Biggest Challenge? Lack of Imagination (Green Valleys)
4. United Nations University | The True Value of Ecosystem Services
5. EPA | Climate Change Indicators: Oceans

## Topic Questions

1. How are nature-based solutions being applied to restore global ecosystems?
2. What services do ecosystems provide to support human life on earth?
3. How have ocean ecosystems been affected by global warming?
4. How has the degradation and alteration of natural law within Earth's ecosystems affected global equality?
5. How can nature-based solutions be employed to combat the degradation of ecosystems?
6. Why is it important to maintain biodiversity in ecosystems?

**Project and Action Plan**

1. Determine the type of ecosystem where you live. Identify the services that ecosystem provides. Develop a plan to educate those living in your area of the value of systems in order to restore biodiversity in your area.
2. Design a plan to connect existing green spaces in your neighborhood, city, county, prefect or state where you live for a rewilding project. Work with local or state conservations specialists on best methods to establish native species within the corridor.
3. Identify the ecosystem where you live and develop a plan to present to local city officials requiring effective land-use planning and development to protect natural systems within your local ecosystem.

**Instructions**

1. Module education
    a. Watch the Ted Talk from the link at the top of the page.
    b. Read the quote below the link.
    c. Click on each Resource link and read each Resource article on the internet.
2. Choose a topic question
    a. Pick a question that is important to you or that addresses issues that are important in your local area.
3. Use the internet to find at least 3 resource websites to help you develop a solution to your chosen topic question
4. Clearly define your solution to your chosen topic question
    a. Identify resources that may be valuable to your solution.
    b. Resources may include: land, equipment, technology, trained specialists, labor, materials, and other resources your solution requires.
5. Develop an action plan to implement your solution
6. Present your action plan to the class from the module you selected. Projects and action plans may be presented individually or as a group project

**Course Overview**

Global Solutions for Sustainable Living ”provides a simple, effective, holistic creative learning approach for teaching Sustainability in the classroom. The seminar explores best practices and processes in sustainable living addressing the real-world environmental challenges we face in an accessible easy format for students. The seminar encourages student research and innovation. The course is flexible and can be offered in a 1- or 2-day seminar providing teachers with a simple and effective system for teaching sustainability. Teachers will have the opportunity to connect and network with experts working in the field who are finding solutions for increasing sustainability on local, regional, national and international levels. Students learn how to research and analyze information while gaining insight into planning adaptive strategies to increase sustainability. They will learn how to apply those strategies, concepts and experiences within the context of their school, neighborhood and local community. Our goal is to identify the critical environmental issues we face in each of these areas: Ecosystems, Architecture and the Built Environment, Air, Water, Renewable Energy and Agroecology and allow students to find viable solutions to increase greater sustainability on all levels of life. There are no textbooks required to teach the course. The course has been designed to be effective and easy to implement and update.

1. Teachers will expand their understanding and knowledge of the interdependency of ecological and social systems and help students gain an understanding of how to implement sustainable practices in their schools, neighborhoods and local communities.
2. Teachers will be provided with a simple system explaining how the laws of nature function within the larger biome of natural, economic, and social systems allowing students to achieve realistic sustainable goals within their own lives, schools, communities, states and nations.
3. Students will learn how to apply investigative research skills and systems thinking to use information gained through learning experiences helping them understand the interactions between the structure, components and the laws of nature within the natural and built environment.

4. The seminar will provide teachers with simple techniques to help students develop critical thinking skills by examining current methodologies and technologies being used by leading professionals currently working in the field to solve environmental challenges.
5. Teachers will be provided with tools that give students the ability to analyze real-world challenges to environmental systems and allow students to develop a holistic perspective on how the laws of nature inherent in those systems function within their immediate environment.
6. Students will demonstrate an understanding of the decision-making process regarding sustainability to create opportunities and apply their own solutions for current and emerging environmental issues.
7. Enhanced communication skills will help students develop problem solving skills in complex, diverse situations surrounding the global move towards greater sustainability.
8. Each module of instruction will prepare students to compete and be agents of change for the future through best practices in social, environmental and economic responsibility.
9. Teachers will be exposed to the latest advances in sustainability and applied technologies established through local, national and international agencies, organizations and individuals currently working in the field.
10. ”Global Solutions for Sustainable Living“ will provide teachers with a simple and effective method for updating material to present the latest developments in sustainability.

**Course Fee and License Agreement (LA):**

- $1200 with LA to cover 100 students (4 classes avg 25 students)
- If more than 100 students - $1000 per LA for each 100 students (4 classes) up to 500
- Over 500 students - $800 per LA for each for each 100 students (4 classes)
- For larger schools or school systems please call to meet with our team

- Course fee has been developed by assuming an average textbook cost of $12.00 per student per year multiplied by 100 students (avg class size of 25 students per class).
- Note: the subject matter contained in “Global Solutions for Sustainable Living” course are evolving and changing rapidly. Traditional textbooks would not be able to keep up with progress being made in the field of Sustainable Living.

License Agreement Terms

1. License Agreement – 100 students (4 classes)
2. License Agreement term – one school year
3. Course to be taught in sequence in its entirety, beginning with “Ecosystems”
4. Each instructor must sign LA prior to receiving the course

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**"Global Solutions for Sustainable Living"**

Tricia Spencer Eco Design 40 Consulting Services

Fee Schedule

**Professional Development and Curriculum Instruction (2 Days) $2,500**

- Includes up to 10 hours of professional development with Instructor
- Additional hours beyond 10 hours - 125.00 p/hr.
- Housing and Travel Included
- Signed Non-Disclosure Agreement
- Contract for Instruction

**Professional Development: Instruction (3 Days) $3,500**

- Academic staff
- Housing and Travel Included
- Non-Disclosure Agreement
- Contract for Instruction

**University Curriculum and Instruction Online $5,000 per 3 hr credit hour class**

- Maximum class size 20 students
- Signed Non-Disclosure agreement
- Contract for instruction online

**Six Weeks Professional Development: Instruction in Residence $25,000**

- Academic staff and students
- Maximum class size 30 students
- Housing and Travel Included
- Signed Non-Disclosure Agreement
- Contract for Instruction