East Carolina University Sustainability-Related Continuing Education Courses for 2018-19

2nd Annual Sustainability Symposium: Solar Energy

Solar energy has emerged as a clean and reliable alternative source of power. It is experiencing a remarkable growth across the United States and around the world. The Sustainability Symposium on Solar Energy will engage community residents, public institutions, private sector industry, university faculty and staff and agencies interested in solar energy, with a primary focus on rooftop residential solar units and community solar farms.

The symposium will present pivotal details pertaining to the following topics:

- 1) Legal and economic challenges to community solar farms
- 2) Homeowner perspectives on rooftop residential solar units
- 3) Environmental impact of solar energy use
- 4) Battery back-up and energy storage issues for solar units.

The symposium will catalyze discussion on ways to increase the usage of solar energy at the community and residential levels. It will also address legal and economic challenges in the solar energy sector. The goal of the symposium is to increase awareness about the benefits and challenges of using solar energy in the communities of eastern North Carolina and beyond. There will be four parts to the symposium: a keynote speaker, two panel sessions, and a student poster session. The symposium will showcase sustainability related research and projects of students in the poster competition.

UNC Coastal Studies Institute Program: Exploring Estuaries

Through this hands-on experience students will explore a local estuarine system through data collection of water and plankton sampling, seining, soil cores or wetland mapping. Students will get out in the field to collect data in the estuary (weather depending) to gain a better understanding of the complex systems that make up the Albemarle and Pamlico system.

UNC Coastal Studies Institute Program: Renewable Ocean Energy

Students will learn about UNC CSI's mission to extract energy from ocean waves, currents and tides. Participants will view technology used in ocean research, participate in a series of activities to understand the process of harnessing power from the ocean and learn the basics of oceanographic processes. This program can be taught at a middle or high school level to address the standards listed below.

UNC Coastal Studies Institute Program: Ocean Waves

Students will explore concepts of energy transfer through orbital waves by observing different wave characteristics in a 10-meter research wave tank. Students will use the data they have collected to solve mathematical equations that calculate the energy available, wave steepness, etc. This program allows to students to visualize concepts they are learning in science and math.

UNC Coastal Studies Institute Program: Sustainable Coastal Communities

This program investigates promoting economic growth on the Outer Banks while preserving our fragile environment while considering the needs of the citizens and the ecosystems. Students will learn about local ecosystems through hands-on experiences, and will design a community based on the needs of both the citizens and the ecosystem by using large maps and templates. This program can be taught at a middle or high school level.

UNC Coastal Studies Institute: Spring Break Program

Through this multi-day program students will explore the unique environments of the Outer Banks during Spring Break. Campers will participate in on-the-water activities and research, as well as lab-based programs.

UNC Coastal Studies Institute Program: Marine Technology
This program highlights the technology used by UNC CSI scientists and researchers to collect oceanographic and estuarine data. Students have the opportunity to construct an observational buoy or Remote Operated Vehicle (ROV).

UNC Coastal Studies Institute Camp: Oceanography
Oceanography camp targets students 12 - 15 years old who are interested in a better understanding of the complex processes that take place in our oceans. This camp will require students to learn and work on the beaches, estuaries and ocean as we investigate and explore what happens on over 70% of our planet. Students will engineer technology like drifters and gliders to explore how scientists can learn in an environment we are ill equipped to visit. Students will boogie board, kayak, go on boat trips, collect data, and work alongside scientists at UNC CSI. This camp will include some snorkeling and opportunities to explore in water environments.

Diversity Seminar – A Plan for Excellence: Women and Leadership
The Diversity Seminar is a half-day seminar for faculty and staff designed to encourage and support the development of diversity and inclusion in a variety of ways, both in classroom and on campus in general.

Diversity Seminar: The School to Prison Pipeline and Its Impact on School Communities
The College of Education and Office of Equity and Diversity invite you to a discussion on the school-to-prison pipeline (STPP). This talk will address the STPP and its connection to practices such as school discipline. The speakers will use Critical Race Theory's critique of liberalism and colorblindness and their connections to school based policies and policing. Time will be spent addressing school arrests and their legal ramifications; systemic barriers to equity and points of entry to the STPP; and policies and practices that increase STPP in some school communities. Additionally, the speakers will share national and local efforts to address the STPP.

Engaging in Difficult Dialogues for an Inclusive Campus
The Diversity Seminar is a half-day seminar for faculty and staff designed to encourage and support the development of diversity and inclusion in a variety of ways, both in the classroom and on campus. This year, we strive to educate attendees on how to have difficult dialogues in the workplace and classroom. Upon completion of this course, you will be able to:

- Understand and articulate the importance of having difficult dialogues across differences in the workplace and classroom
- Practice skills for facilitating difficult dialogues around diversity in the workplace with colleagues
- Practice skills for engaging in difficult dialogues around diversity in the classroom

Real Energy Savings
Our homes are a system that works like the body, where all parts interact together for a common purpose. In this interactive course, you will learn how your home's performance affects your comfort and your wallet, and how to calculate energy items throughout your home. Special information will be provided on building science-related issues for healthy living, such as the causes and remedies for wet crawl spaces.

Sustainability in Health Care
Health Care is ubiquitous in the industrialized world. Yet, every medical development, technique, and procedure impacts the environment. Green bioethics synthesizes environmental and biomedical ethics, thus creating an interdisciplinary approach to sustainable health care. Notably, green bioethics addresses not the structure of environmental sustainability in health care institutions; but, the sustainability of individual health care offerings. It parallels traditional biomedical ethics by providing four principles for ethical guidance: distributive justice, resource conservation, simplicity, and ethical economics. Through these four principles, green bioethics presents a coherent framework for evaluating the

sustainability of medical developments, techniques, and procedures. The future of our world may very well depend on how effectively we halt ecological destruction and conserve our resources in all areas of life.

ISO 50001: Energy Management Systems Overview

ISO 50001 supports organizations in all sectors to use energy more efficiently, through the development of an energy management system (EnMS). This course is designed to provide a general overview of the concepts, requirements and benefits of using an energy management system based on the ISO50001 standard.

Benefits to Your Business

- Facilitate energy management best practices
- Reduce energy costs and improve energy performance
- Meet energy performance targets
- Improve operations and capital cost decisions
- Build energy management into business practices
- Develop a framework for promoting energy efficiency throughout the supply chain

Learning Objectives:

An experienced instructor, Charles Parrish, who sat on the original technical committee (TC) that developed ISO 50001, will discuss the requirements outlined in the standard and explain how developing and systematically managing policies and procedures can improve energy efficiency, achieve targets, and reduce energy costs. Upon completion of this course, you will be able to:

- Discuss the purpose of an energy management system
- Explain the benefits of an energy management system
- Describe the requirements of ISO 50001
- Understand the next steps in getting started with ISO 50001 in your organization

ISO 14001: Environmental Management Systems

When your organization demonstrates commitment to improving the environment it is a win-win for businesses, customers and the environment. This one-day overview will provide the understanding of what will be required to accomplish that goal. Being certified to ISO 14001:2015 brings many business benefits that include:

- Cost savings in waste, recycling and consumption
- Reduction in material storage costs
- Reduced energy consumption
- Improved environmental performance of supply chain
- A process to verify regulatory compliance
- Improved image and credibility
- Expansion into new markets as some sectors require ISO 14001 certification

Learning Objectives:

Our goal is to provide you with an understanding of the requirements of the standard and help you identify gaps in your current EMS. Our experienced instructor will discuss the ISO 14001:2015 EMS standard requirements and provide guidance as you start your ISO journey. Upon completion of this course, you will be able to:

- Explain the requirements, structure, purpose and background of ISO 14001:2015
- Identify typical gaps for companies transitioning from the 2004 to the 2015 standard
- Apply the concepts of risk-based thinking
- Contribute to the development of your organization's ISO 14001:2015 implementation
- Defining and articulating basic EMS terminology
- Explain how to build an EMS

Scientific Diving

This is a modular course based on the scientific diver training standards defined by the American Academy of Underwater Sciences (AAUS), and provides the classroom, confined water, and open water instruction necessary to obtain ECU Scientific Diving Certification. Modules generally consist of an online academic section, confined water lab, and open water diver qualification. Online academics are self-paced. Confined water sections will be scheduled on Monday mornings either 8-10am or 10-12pm. Open water qualification dives are conducted after the close of spring exams and require approximately 10 days. This course lays the fundamental groundwork necessary for students to meet the academic, confined water, and open water requirements for scientific diver certification as outlined by the AAUS. Students are exposed to a variety of diving and sampling techniques and practices from several academic areas involved in scientific diving. Students are evaluated through the use of academic and skills testing for basic proficiency in activities deemed pertinent for scientific diving practices in which ECU is involved.