**University of Arkansas**

Environmental Resiliency Sustainability

Graduate Certificate

Curriculum

**SUST 5103 Foundations of Sustainable and Resilient Systems**

Exploring sustainability foundations, application, and assessment, this course provides students the skills and competencies to understand, communicate, and evaluate sustainability at multiple scales. Using core sustainability concepts, such as systems and complexity, resilience and vulnerability, we evaluate interrelationships among environmental, societal, and economic well-being and the implications for decision-making.

**SUST 5203 Decision Making, Analysis and Synthesis in Sustainability**

Provides an applied framework for analyzing decision dynamics, supporting, and promoting more sustainable decisions, and measuring the sustainability of systems. The course applies theories of change, institutional decision theory, social and institutional constructs of sustainability, indicator and metric development across social, ecological, and economic domains, and communication strategies.

**SUST 5303 Sustainable Global Food, Energy, and Water Systems**

Provides a detailed review of the existing global food production/distribution and water systems, with an emphasis on scarcity, equity, management, and challenges from changing global systems. This course explores the inputs and efficiencies of existing agricultural production systems and examines equity and value in these systems.

**ENRE 5123 Foundations of Environmental Resiliency**

An introduction to the concepts and strategies centered on resilience as it relates to the built and natural environment.  Concepts include systems thinking, socio-ecological frameworks, Panarchy, and resilience frameworks, and diagnostics. Strategies include foundations of sustainability science and policy with ideas about dynamic environmental events and adaptation methods.  Case study investigations provide a summative and formative conclusion to course activities.

3 Hour Elective (Recommended Courses)

**BUSI 5023 Sustainability in Business (SIB)**

Sustainability in Business (SIB) is not a new field, nor is this class a new offering. Still, in recent years it has increased in significance. The concept of the class is simple: Sustainability is cultural, financial, and environmental in character – sometimes referred to as Triple-Play Sustainability – or it is not truly sustainable. Culture is the ocean in which we swim; we are no more aware of it than fish are aware of water. We are not aware of it, but it forms the basis of our decisions. Businesses must be financially profitable to exist; they must expand the value they offer to increase profits. The environment is finite and there is a ripple effect from our actions. Engineers optimize, scientists observe and extrapolate, businesses create wealth, governments organize, and artists capture an idea and convey it; each of these can be beneficial or can be distorted to damage our common world. You will also hear references to “People, Planet, and Profit”, the “3 Ps”, or the Triple Bottom Line. Class topics start with principles and progress to applications of the principles to real world companies and organizations.

**SUST 6913 Sustainable Design and Construction: Remediation and Plants on Structure**

Plants on Structure introduces students to strategies and techniques of plant use in the built environment. Potential topics include green infrastructure (e.g., green roofs and walls), site, soil, and water remediation techniques (e.g., phyto-remediation, bioswales, and living machines), and structural considerations. Technical documentation methods and other representation and/or communication techniques are included.