

# Environmental Resiliency (ENRE)

Contact info

## Degree Offered:

Master of Science in Environmental Resiliency (ENREMS)

## Graduate Certificates (non-degree):

Graduate Certificate in Environmental Resiliency (ENREGC)

Graduate Certificate in Sustainability (SUSTGC)

Graduate Microcertificate in Environmental Resiliency (ENREGM)

The coursework leading to a Master of Science in Environmental Resiliency will prepare professionals to lead sustainability and resiliency efforts through their work and community roles. It provides a comprehensive understanding of the science, theory, and methods needed to assist them in making policy decisions and to realize the potential implications of their organizations' policies. A student can learn how to make informed decisions about policies and practices in environmental resiliency that will be needed as a business or organizational leader. And just as importantly, you learn effective ways to share this information with a variety of stakeholders. Learn the science behind environmental and climate changes and how implementing resiliency practices can mitigate the impact of those changes.

## Requirements for M.S. in Environmental Resiliency

### Requirements for Admission include:

- B.A./B.S. from an accredited university or college
- Minimum 3.0 GPA
- Non-native speakers of English must meet the Graduate School's English Language Proficiency Requirement.

### Requirements for the Master of Science Degree:

The Environmental Resiliency M.S. requires students to complete 10 courses or 30 hours (no thesis). Students are required to take SUST 51003, SUST 52003, and SUST 53003 plus ENRE 51203. The remaining 18 hours are electives from the list below or approved by the adviser.

The Environmental Resiliency M.S. presents an advanced study of resiliency in the context of sustainability, climate, and environmental change. The program components are divided into four core areas:

1. Sustainability,
2. Leadership,
3. Resiliency, and
4. Certifications, accounting, and metrics.

Students will learn theories and methods of resiliency and sustainability as part of a broader understanding of climate change and solutions as they apply to the four topic areas above. A common core of classes in sustainability and resiliency will serve as the foundation for the four topic areas.

ENRE 51203	Foundations of Environmental Resiliency	3
SUST 51003	Foundations of Sustainable and Resilient Systems	3

SUST 52003	Decision Making, Analysis and Synthesis in Sustainability	3
SUST 53003	Sustainable Global Food, Energy and Water Systems	3

### Select from the following electives: 18

SEVI 50203	Sustainability in Business	
ENRE 51103	Adaptive Leadership	
ENRE 51303	Science Communication for Executives	
ENRE 52103	Leadership is Convening, Do You Know How to Convene?	
ENRE 52203	You Cannot Manage What You Do Not Measure	
ENRE 52303	Carbon Accounting	
ENRE 53103	Working with Stakeholders	
ENRE 53203	Survey of Watershed Hydrology and Water Resource Management	
ENRE 53303	ESG Reporting	
ENRE 54203	Business and the Environment	
ENRE 54303	Built Environment Certification Systems	
SUST 69103	Sustainable Design and Construction: Remediation and Plants on Structure	

**Total Hours 30**

## Graduate Certificate in Environmental Resiliency

The Environmental Resiliency Graduate Certificate will create a foundation in earth systems with a focus on understanding how resilient practices are created. In this certificate students will explore what resiliency is and how it differs from sustainability. Students will also explore hydrology and water resource management, learn about various types of measurement tools and when they should be used. Students will delve into how the environment influences business and society and learn what businesses and organizations may do to support the environment gaining skills to discuss solutions with executives.

Students enter the program with a minimum of a B.S./B.A. from an accredited university. Students must have a 3.0 GPA, or better, and for non-native speakers must have language test scores acceptable for admission by the University of Arkansas graduate school standards.

ENRE 51203	Foundations of Environmental Resiliency	3
ENRE 52203	You Cannot Manage What You Do Not Measure	3
ENRE 53203	Survey of Watershed Hydrology and Water Resource Management	3
ENRE 54203	Business and the Environment	3
Choose one elective from approved ENRE MS courses		3

**Total Hours 15**

## Graduate Certificate in Sustainability

### Required Courses

Students must earn a grade of "B" or better for all courses used to fulfill requirements of the Graduate Certificate in Sustainability.

SEVI 50203	Sustainability in Business (Required course for the Graduate Certificate)	3
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Elective courses with sustainability focus selected from a broad menu of offerings in four thematic areas:

Sustainability of Social Systems

Sustainability of Natural Systems	
Sustainability of Built Systems	
Sustainability of Managed Systems	
<b>Total Hours</b>	<b>15</b>

Elective courses must be completed in at least two thematic areas. In addition, nine of these 12 hours must be in courses numbered 5000 or above.

A complete list of elective courses may be found on the university's Sustainability website (<https://sustainability.uark.edu/academics/graduate.php>).

## Graduate Microcertificate in Environmental Resiliency

The Environmental Resiliency Graduate MicroCertificate will be the first step in understanding resiliency.

Students enter the program with a minimum of a BS/BA from an accredited university. Students must have a 3 point GPA, or better, and for non-native speakers must have language test scores acceptable for admission by the University of Arkansas graduate school standards.

ENRE 51203	Foundations of Environmental Resiliency	3
Choose 2 of the 3 electives below:		6
ENRE 52203	You Cannot Manage What You Do Not Measure	
ENRE 53203	Survey of Watershed Hydrology and Water Resource Management	
ENRE 54203	Business and the Environment	
<b>Total Hours</b>		<b>9</b>

## Graduate Microcertificate in Sustainability

The Environmental Resiliency Sustainability Graduate Microcertificate will be the first step in understanding sustainability and resilient systems. The foundation will include the ability to analyze the data and to understand sustainability on a global scale.

Students enter the program with a minimum of a B.S. or B.A. from an accredited university. Students must have a 3 point GPA, or better, and for non-native speakers must have language test scores acceptable for admission by the University of Arkansas graduate school standards.

### Course Requirements

SUST 51003	Foundations of Sustainable and Resilient Systems	3
SUST 52003	Decision Making, Analysis and Synthesis in Sustainability	3
SUST 53003	Sustainable Global Food, Energy and Water Systems	3
<b>Total Hours</b>		<b>9</b>

## Courses

### SUST 51003. Foundations of Sustainable and Resilient Systems. 3 Hours.

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. (Typically offered: Fall)

### SUST 52003. Decision Making, Analysis and Synthesis in Sustainability. 3 Hours.

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. (Typically offered: Spring)

### SUST 53003. Sustainable Global Food, Energy and Water Systems. 3 Hours.

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. (Typically offered: Fall)

### SUST 56003. Environmental Sociology. 3 Hours.

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. Graduate degree credit will not be given for both SUST 46003 and SUST 56003. (Typically offered: Fall)

### SUST 56903. Environmental Justice. 3 Hours.

This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. Graduate degree credit will not be given for both SUST 46903 and SUST 56903. (Typically offered: Spring)

### SUST 5900V. Special Problems in Sustainability. 1-6 Hour.

Special Problems is intended to fulfill a need in the sustainability curriculum to offer one-time pilot course work in any semester prior to the formal curriculum approval process, offer seminars on unusual but timely topics in sustainability on a one-time basis, or independent study for students seeking additional expertise in sustainability research and scholarship. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

### SUST 69103. Sustainable Design and Construction: Remediation and Plants on Structure. 3 Hours.

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., phytoremediation, bioswales, and living machines), and structural considerations. Technical documentation methods and other representation and/or communication techniques as a means of conveying design intent are included. (Typically offered: Spring)