



## Department of Navy Course

# Engineering With Nature<sup>®</sup> for Mission-Ready Infrastructure

Department of Navy (DON) installations face growing impacts from natural hazards. Natural infrastructure can cost-effectively reduce these risks with the help of natural systems alongside conventional infrastructure.

### OVERVIEW ::::::::::::::

This course equips DON personnel with the skills to develop and implement natural infrastructure (NI) at military installations. Developed by the US Army Corps of Engineers' Engineering With Nature<sup>®</sup> Program (EWN<sup>®</sup>), it is designed for DON personnel, including planners, engineers, facility managers, scientists, environmental professionals, natural resources managers, and installation leaders to better understand this form of cost-effective solutions and how implementation can reduce risk to infrastructure and support the warfighter. Participants will learn foundational concepts, explore real-world case studies, and become familiar with a number of tools, techniques, and practices to initiate and scale natural infrastructure projects that reduce risks from natural hazards and increase mission resilience.

### OUTCOMES

- ✓ Understand advantages of NI
- ✓ Achieve systems level thinking
- ✓ Identify NI for coastal, riverine, arid systems, and more
- ✓ Learn permitting requirements
- ✓ Access to technical resources
- ✓ Exposure to numerous case studies
- ✓ Familiarity with steps leading to project implementation



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The U.S. Army Corps of Engineers' Engineering With Nature (EWN) Program, has utilized natural infrastructure (NI) for over 15 years. EWN integrates natural processes into engineering design, combining environmental stewardship with mission objectives and fostering resilience through public and private partnerships.

## Course Delivery

The nine-module course launches in January 2025 via a virtual platform, allowing participation from anywhere. Instructors and practitioners from multiple sectors will provide broad perspectives and practical insights into natural infrastructure.

## Course Credit

The course offers 2 PDHs per module for attending live sessions. While recordings will be available for later viewing, PDHs won't be provided for recorded sessions.



1

### Introduction to NI

Terminology, history, and examples of NI to address natural hazards.

2

### Strategies for Co-Developing NI Projects

Framework, building the business case for NI, scaling, and other considerations.

3

### NI in Coastal Systems - Part 1

Solutions utilizing beaches, wetlands, and reefs (coral and oyster).

4

### NI in Coastal Systems - Part 2

Solutions utilizing islands, mangroves, and horizontal levees (ecotones).

5

### NI in Inland Landscapes - Part 1

Techniques for streambank stabilization, floodplains, levee setbacks, re-meandering, riparian zones, and fish passage.

6

### NI in Inland Landscapes - Part 2

Approaches suited to the Desert Southwest, and arid environments.

7

### NI Regulatory Framework

Agency coordination, laws and regulations, example permitting actions, protected resources, and overcoming barriers.

8

### Existing Guidance

Available engineering guidance, sediment as a resource in construction, NI for roadways.

9

### NI from Concept to Construction

Financing, leveraging partnerships, transitioning designs, example bid packages.