IRF GLOBAL

# Bridge Preservation Techniques

*Expert training by professionals, for professionals*

## Tirana, Albania
## June 16-20, 2025

## Workshop

# Bridge Preservation Techniques

**Tirana, Albania**

**June 16 – June 20**

## Background

The AASHTO Committee on Bridges and Structures developed a Guide intended to offer guidance on selecting specific, cost-effective preservation and maintenance actions and treatments for agencies wishing to extend service life and estimate needed budgets to optimize performance of bridge inventories. It can be used to help preserve bridges and extend their service life by selecting cost-effective actions and treatments for various bridge elements based on exposure.

This course provides stakeholders in bridge design and construction, especially maintenance engineers and bridge inspectors with state-of-the-art information, guidelines, and practices for bridge preservation and maintenance. Specifically, the course assists bridge personnel in identifying candidates for bridge preservation; lists actions in bridge preservation; lists costs of actions and time intervals for use of actions; and presents a method of Preservation-Cycle Cost Analysis for cost evaluation of preservation actions, used to compute monetized benefits of preservation.

## Learning Objectives

- ✓ Learners will study principles as related to bridges and bridge preservation
- ✓ Learners will study bridge preservation techniques for different types of bridges
- ✓ Learners will get introduced to how to identify bridges that are candidate for preservation
- ✓ Learners will be introduced to bridge management systems and life cycle cost analysis of bridges and how preservation actions are prioritized and/or optimized

## Target Audience

- National /State Bridge Engineers
- Bridge Contractors
- Maintenance Engineers and Inspectors
- Private Consultants
- QC/QA Personnel

## Lead Instructor

**Amin K. Akhnoukh, Ph.D., P.E.**
**Professor, East Carolina University**

Dr. Amin Akhnoukh is a professor of construction engineering and management at East Carolina University, North Carolina, USA. Dr. Akhnoukh earned his B.S. in Civil Engineering (1997) from Cairo University, M.S. in Civil Engineering from Kansas State University (2005), Kansas, USA, and Doctorate in Construction Engineering (2008) from the University of Nebraska-Lincoln, Nebraska, USA. Dr. Akhnoukh has worked as an assistant and associate professor of civil and construction engineering at the University of Arkansas at Little Rock (2009-2017) and as associate and professor of construction management (2018-todate) at East Carolina University. Dr. Akhnoukh has generated more than $3.0 million in research funding from the National Science Foundation, NASA, and State Departments of Transportation. Dr. Akhnoukh has more than 100 refereed publications in the area of construction materials, infrastructure asset management, and artificial intelligence applications in construction. Dr. Akhnoukh has more than 10 years of construction experience in Egypt, the middle east, and the United States. He is a registered professional engineer in Egypt and the United States, and a NASA and IRF Fellow.

## Registration

- **$1,500 USD Delegates from Albania**
- **$2,500 USD IRF Members / Groups of 3 or more**
- **$3,000 USD Non-IRF Members**

### Seminar Hotel:

**Hilton Garden Inn Tirana**
Alpas Center, 146 Bulevardi Gjergi,
Tirana, Albania

Website: https://www.hilton.com/en/hotels/tiagigi-hilton-garden-inn-tirana/?msockid=0551da00cde46a3e1fa8cf64ccab6b58

**Registration:**
**For any support, please contact** melabyad@irf.global

# Agenda

**Monday – Friday (9:00 AM – 4:00 PM)**

**Day 1: Introduction to Bridge Management and Inspection**

**09:00– 10:30**

- Bridge Classifications – Structural Systems

***10:30 – 10:45: Coffee/Tea Break***

**10:45 – 12:00**

- Load Path within Bridge Elements

***12:00 – 13:00: Lunch Break***

**13:00 – 14:30**

- Concepts of Bridge Management
- Intro to Bridge Management Systems

**14:30 – 14:45: Coffee/Tea Break**

**14:45 – 16:00**

- Open Discussions, Q&A, and Day 1 Conclusive Remarks

**Day 2: Principles of Preservation**

**09:00– 10:30**

- Bridge Conditions
- Bridge Capacity

***10:30 – 10:45: Coffee/Tea Break***

**10:45 – 12:**

- Bridge Robustness
- Bridge Durability

***12:00 – 13:00: Lunch Break***

**13:00 – 14:30**

- Reliability Concepts for Bridge Evaluations and Bridge Members Performance

**14:30 – 14:45: Coffee/Tea Break**

**14:45 – 16:00**

- Open Discussions, Q&A, and Day 2 Conclusive Remarks

**<u>Day 3: Key Performance Indicators and Detection for Need to Preservation</u>**

**09:00– 10:30**

- Bridge Inspection Techniques

***10:30 – 10:45: Coffee/Tea Break***

**10:45 – 12:**

- Key Points for Successful Preservation
- Relevancy
- Urgency
- Severity

***12:00 – 13:00: Lunch Break***

**13:00 – 14:30**

- Case Studies for Bridge Evaluation

**14:30 – 14:45: Coffee/Tea Break**

**14:45 – 16:00**

- Open Discussions, Q&A, and Day 3 Conclusive Remarks

**<u>Day 4: Preservation Actions – Part I</u>**

**09:00– 10:30**

- Actions for Major Bridge Components
- Actions for Minor/Other Components

***10:30 – 10:45: Coffee/Tea Break***

**10:45 – 12:**

- Superstructure Preservation – Reinforced Concrete Bridges

***12:00 – 13:00: Lunch Break***

**13:00 – 14:30**

- Superstructure Preservation – Prestressed Concrete Bridges

**14:30 – 14:45: Coffee/Tea Break**

**14:45 – 16:00**

- Open Discussions, Q&A, and Day 4 Conclusive Remarks

**<u>Day 5: Preservation Actions – Part II</u>**

**09:00– 10:30**

- Superstructure Preservation – Steel and Painted Steel Members

***10:30 – 10:45: Coffee/Tea Break***

**10:45 – 12:**

- Superstructure Preservation – Bridge Decks and Girders

***12:00 – 13:00: Lunch Break***

**13:00 – 14:30**

- Impact of Bridge Preservation on Life Cycle Cost of Bridge Projects

**14:30 – 14:45: Coffee/Tea Break**

**14:45 – 16:00**

- Open Discussions, Q&A, and Day 5 Conclusive Remarks

**Certificate Distribution**

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