



IRF
GLOBAL

Pavement Design, Management & Preservation

Barcelona, Spain
March 2 – 8, 2024



Workshop



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Background

This comprehensive course has been meticulously crafted to offer participants an in-depth exploration of the multifaceted world of pavement engineering. Through a holistic approach, it aims to empower individuals with a profound comprehension of pavement design, management, preservation, and the strategic utilization of the Mechanistic-Empirical Design Guide (MEPDG) to foster the creation of resilient, cost-effective, and enduring road infrastructure. Whether you're a seasoned civil engineer seeking to broaden your expertise, a transportation professional looking to stay at the forefront of industry advancements, or simply an enthusiast with a passion for understanding the intricate science behind road construction and maintenance, this course has been tailored to cater to a diverse audience. It stands as an educational beacon, guiding individuals toward a mastery of the principles that underpin the modernization and longevity of road networks.

Learning Objectives

- ✓ Master the principles of structural design for pavements
- ✓ Develop a deep understanding of the MEPDG approach
- ✓ Understand the basic concepts of pavement management
- ✓ Learn methods for data collection and evaluation in pavement management.
- ✓ Learn about pavement deterioration and distresses
- ✓ Develop a deep understanding of the MEPDG approach.
- ✓ Identify various pavement preservation techniques and their benefits. Learn about the advances and innovations in pavement management and condition evaluation

Target Audience

- ✓ Road Authorities & Operators
- ✓ Road Design Consultants
- ✓ Road Contractors
- ✓ Maintenance Personnel
- ✓ Pavement design engineers
- ✓ Geotechnical engineers
- ✓ Materials engineers

Lead Instructor



Amin Akhnouk

Associate Professor, East Carolina University

Dr. Akhnouk has 15 years of academic experience as an assistant and associate professor at the Construction Engineering Department at the University of Arkansas and as an associate professor at East Carolina University. Dr. Akhnouk has 60+ refereed publications, including proceeding books, book chapters, research report, journal articles and conference proceedings. Dr. Akhnouk research interests include ultra-high-performance concrete, prestressing applications, additive manufacturing, asphalt materials, and asphalt designs using Hveem, Marshal, and Superpave. Dr. Akhnouk is a NASA faculty scholar, a fellow of the International Road Federation, and a member of the American Concrete Institute committee on 3-D printing of concrete, and a member of the American Society of civil engineers. In addition to his academic experience, Dr. Akhnouk has 10+ years of industry experience in American and International Construction Firms and Companies working in the United States, Dubai/UAE, and Egypt.

Registration

- 3,000 USD IRF Members / Groups of 3 or more
- 3,500 USD Non-IRF Members

Registration: <https://www.irf.global/event/pvmt24-ws-barcelona>

For any support, please contact melabyad@irf.global

Agenda

Saturday – Friday (9:00 AM – 4:00 PM)

Day 1: Introduction to Pavement Engineering

- Understand the fundamentals of pavement engineering.
- Differentiate between various types of pavements and their applications.
- Recognize the importance of pavement design and management in road infrastructure.
- Comprehend the key factors that affect pavement performance.
- Gain an overview of the Mechanistic-Empirical Design Guide (MEPDG) and its role in pavement design.

Day 2: Pavement Design Principles

- Learn how to conduct load and traffic analysis for pavement design.
- Understand the properties of materials used in pavement construction and selection criteria.
- Acquire knowledge of design inputs and parameters essential for pavement design.
- Master the principles of structural design for pavements.

Day 3: Mechanistic-Empirical Design Approach

- Develop a deep understanding of the MEPDG approach.
- Learn how to collect and analyze input data for pavement design.
- Gain proficiency in using design software and tools associated with MEPDG.
- Apply MEPDG through real-world case studies and examples.

Day 4: Pavement Management Systems

- Understand the concept of pavement management and its significance.
- Learn methods for data collection and evaluation in pavement management.
- Explore rehabilitation and preservation strategies for extending pavement life.
- Gain insight into asset management principles.

Day 5: Pavement Preservation Techniques

- Identify various pavement preservation techniques and their benefits.
- Learn about preventive maintenance practices for preserving pavements.

- Differentiate between rehabilitation and reconstruction methods.
- Conduct cost-benefit analysis to evaluate pavement preservation strategies.

Day 6: Practical Application and Workshop

- Participate in hands-on data collection and analysis activities.
- Gain practical experience in using MEPDG software through a workshop.

Day 7: Field Trip

- Apply knowledge gained during the course through a field visit to a pavement construction site.
- Certificate Presentation.

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International Road Federation

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