Pavement Friction and Skid Resistance Basics Training Course

Professional Development Training Course Outline

Category	Traffic Management & Road Safety	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Pavement Friction and Skid Resistance Basics Training Course is designed to equip professionals with the essential knowledge and practical skills required to enhance road safety, traffic performance, and infrastructure durability. Pavement friction is a critical factor influencing vehicle control, accident prevention, and roadway sustainability. This course emphasizes the science of skid resistance measurement, surface texture analysis, and pavement material optimization, providing participants with actionable insights to design, maintain, and assess safer transportation networks.

Through a combination of interactive lectures, hands-on case studies, and real-world simulations, participants will learn the latest techniques in friction testing, pavement evaluation, and road safety engineering. The course highlights cutting-edge methodologies such as continuous friction measurement, macro- and micro-texture assessment, and performance-based maintenance planning. By the end of the program, participants will be prepared to implement best practices that improve vehicle-road interaction, reduce slippage risks, and ensure compliant and resilient pavement systems.

Programme Curriculum

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Course Objectives

1. Understand the fundamentals of pavement friction and skid resistance.
2. Identify factors affecting roadway safety and vehicle traction.
3. Apply friction measurement techniques using advanced tools.
4. Analyze macrotexture and microtexture characteristics of pavements.
5. Interpret skid resistance data for actionable insights.
6. Integrate pavement material selection strategies to enhance friction.
7. Implement road safety interventions for high-risk areas.
8. Evaluate wet and dry surface performance under variable conditions.
9. Conduct performance-based pavement maintenance planning.
10. Optimize traffic performance through friction management.
11. Compare international friction and skid resistance standards.
12. Design predictive maintenance strategies for long-term safety.
13. Leverage technological innovations such as sensor-based friction monitoring.

Target Audience

1. Civil and transportation engineers
2. Highway and road safety managers
3. Pavement maintenance planners
4. Traffic safety analysts
5. Urban and regional planners
6. Construction supervisors and quality control personnel
7. Road research and development professionals
8. Government and regulatory transportation officials

Course Modules

Module 1: Introduction to Pavement Friction

- Definition and significance of friction and skid resistance
- Historical development and current trends
- Factors influencing friction: material, texture, and climate
- Case study: friction improvements on highways
- Hands-on demonstration of friction measurement tools

Module 2: Skid Resistance Fundamentals

- Wet and dry surface friction
- Vehicle-road interaction mechanics
- Friction coefficients and interpretation
- Case study: skid-related accident reduction strategies
- Interactive workshop: measuring friction under controlled conditions

Module 3: Pavement Texture Analysis

- Macrotexture and microtexture
- Surface roughness measurement techniques
- Laboratory and field testing methods
- Case study: evaluating new asphalt mix designs
- Practical session: texture measurement on real pavements

Module 4: Friction Measurement Techniques

- Continuous friction measurement devices
- Static and dynamic testing methods
- Data collection and analysis protocols
- Case study: friction mapping on urban roads
- Simulation exercise: predicting skid risk zones

Module 5: Pavement Material Optimization

- Selection of aggregates for maximum friction
- Binder types and their effect on surface grip
- Surface treatments to enhance skid resistance
- Case study: high-friction overlays for accident-prone areas
- Group activity: designing optimal pavement material solutions

Module 6: Road Safety and Risk Management

- Identifying high-risk segments
- Predictive safety assessment techniques
- Accident data analysis for friction interventions
- Case study: friction improvement leading to 30% accident reduction
- Workshop: integrating friction data into safety audits

Module 7: Maintenance Planning and Performance Monitoring

- Predictive vs reactive maintenance strategies
- Monitoring friction over pavement lifecycle
- Performance indicators for road safety
- Case study: cost-benefit analysis of friction maintenance programs
- Hands-on exercise: preparing a friction monitoring plan

Module 8: Emerging Technologies and Innovations

- Sensor-based friction monitoring
- AI and machine learning in skid risk prediction
- Smart pavements and real-time feedback systems
- Case study: implementation of intelligent friction management systems

- Group discussion: future trends and sustainable solutions

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call +254769199797

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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