Highway Design Safety 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

Highway design safety is critical in ensuring the safe and efficient movement of vehicles and pedestrians on roadways. With the increasing complexity of transportation networks, road designers must focus on creating infrastructure that minimizes accidents, reduces risks, and enhances overall safety. Highway Design Safety Basics Training Course is tailored to equip professionals in the field of transportation engineering, urban planning, and road safety with foundational knowledge of best practices in highway safety design. By applying advanced design principles and innovative safety measures, this course ensures that roads are optimized for safety, functionality, and longevity, while addressing the evolving challenges posed by modern traffic systems.

The course covers the core concepts and methodologies of highway design safety, focusing on road geometry, traffic flow management, pedestrian safety, and the integration of modern technologies like Intelligent Transportation Systems (ITS). Participants will learn about hazard identification, risk assessment, and the latest safety design standards set by organizations like AASHTO (American Association of State Highway and Transportation Officials) and ISO (International Organization for Standardization). Whether you're a beginner or an experienced professional, this course will enhance your understanding of safety-critical elements in highway design, ensuring that participants can make informed decisions that benefit both the public and the environment.

Programme Curriculum

Highway Design Safety Basics Training Course

Introduction

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Course Duration

5 days

Course Objectives

1. Gain a solid foundation in road safety design theories and methodologies.
2. Learn to identify potential hazards and assess risk factors on highways and urban streets.
3. Master techniques to optimize traffic flow and reduce congestion, improving driver and pedestrian safety.
4. Understand safety guidelines from AASHTO, ISO, and other regulatory bodies.
5. Explore how ITS can enhance safety through real-time data monitoring and management.
6. Learn to design roads with pedestrian safety in mind, including crosswalks and traffic calming techniques.
7. Understand how driver behavior impacts safety and how design can mitigate risks like speeding and distracted driving.
8. Analyze the role of road geometry in preventing accidents.
9. Specialize in designing roads that cater to cyclists, pedestrians, and public transport users.
10. Learn to use crash data to inform design improvements and safety measures.
11. Explore sustainable design practices that reduce environmental damage while maintaining safety.
12. Understand how to ensure highway designs meet both legal and safety compliance requirements.
13. Learn how to conduct safety audits and implement corrective actions for ongoing improvements.

Target Audience

1. Transportation Engineers
2. Urban Planners
3. Road Safety Professionals
4. Public Policy Makers
5. Highway Designers and Planners
6. Traffic Analysts
7. Environmental Engineers
8. Construction Managers

Course Modules

Module 1: Introduction to Highway Safety Design

- Overview of highway safety principles
- Key terminology and concepts
- Regulatory frameworks for highway design
- Risk assessment in road design
- Case study: Redesigning a high-risk intersection for pedestrian safety

Module 2: Roadway Geometry and Traffic Flow

- Importance of road geometry in safety
- Analysis of horizontal and vertical alignment
- Traffic flow modeling techniques
- Managing congestion through intelligent systems
- Case study: Improving traffic flow on a congested freeway interchange

Module 3: Pedestrian and Cyclist Safety Design

- Design elements for pedestrian safety
- Managing pedestrian-vehicle interactions
- Bicycle lane integration in urban road networks
- Safety measures for high-traffic pedestrian areas
- Case study: Implementing pedestrian islands in busy intersections

Module 4: Intelligent Transportation Systems (ITS)

- Overview of ITS and its role in safety
- Real-time data collection and analysis
- Traffic signal control and incident management
- Integrating ITS with traffic safety initiatives
- Case study: ITS applications in accident prevention on highways

Module 5: Crash Data Analysis and Application

- Understanding and analyzing crash data
- The role of data in identifying high-risk areas
- Use of GIS in accident mapping
- How to use crash data to inform design decisions
- Case study: Using crash data to redesign an accident-prone intersection

Module 6: Advanced Pedestrian and Vehicle Interaction

- Designing roads for mixed traffic environments
- Managing vehicle speeds for safety
- Use of traffic calming methods
- Infrastructure for pedestrian crossings
- Case study: Designing shared space environments for urban areas

Module 7: Environmental and Sustainable Safety Design

- Sustainable practices in highway design
- Mitigating environmental impacts of transportation infrastructure
- Safety considerations for eco-friendly roads
- Integrating green spaces and noise barriers

- Case study: Green roadways in urban planning

Module 8: Safety Audits and Maintenance

- Conducting safety audits and identifying improvements
- Ongoing monitoring and maintenance strategies
- Using safety audits for proactive risk management
- Stakeholder involvement in safety planning
- Case study: Continuous safety improvements on a major urban road

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
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

Ready to enroll or request a customized program? Book online or contact us:

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