Smart Roads

Course Overview

A two-day course designed to explore the rapidly advancing field of Smart Roads, where traditional infrastructure meets cutting-edge digital technology. This course delves into how emerging innovations, such as AI, autonomous vehicles, IoT, and Vehicle-to-Everything (V2X) communication, are reshaping road design, traffic management, and user experience.

With a strong emphasis on safety, data-driven planning, and the transition toward sustainable, connected transport networks, the course is ideal for professionals involved in highway safety, civil engineering, transport planning, and policy development. It is particularly relevant for those looking to expand their knowledge of how technology is transforming the future of roads.

Candidates will engage with a mix of short lectures, videos, case studies and scenario-based quizzes. Key themes include real-time traffic monitoring, smart sensor integration, connected vehicle infrastructure, predictive maintenance, and the ethical and regulatory challenges of intelligent transport systems.

Aims and Objectives

The aim of the course is to give delegates a comprehensive understanding of how emerging technologies are transforming traditional road infrastructure into smart, adaptive systems that improve safety, efficiency, and sustainability for all users.

The course provides delegates from a range of professional backgrounds with up-to-date knowledge of key topics such as artificial intelligence, connected and autonomous vehicles (CAVs), intelligent traffic systems, and real-time data applications. It highlights new approaches to road design and maintenance enabled by digital tools, and offers delegates the opportunity to network, share experiences, and explore practical applications of smart technology in both urban and rural contexts.

As the aim of the course is to remain current and forward-looking, the content will continue to evolve and may be subject to change in response to the latest innovations, research, and industry developments.

Topics Covered

The two-day course focuses on the following key areas:

- The evolution of Smart Road technologies and infrastructure
- The role of data, sensors, and real-time monitoring in road management
- Introduction to AI and machine learning in traffic analysis and control
- Connected and Autonomous Vehicles (CAVs) – implications for road design
- Vehicle-to-Everything (V2X) communication systems
- Smart signage, adaptive signals, and dynamic lane management
- Applications of predictive maintenance and digital twins
- Cybersecurity and data privacy in intelligent transport systems
- Environmental and sustainability benefits of Smart Roads
- The role of policy, legislation, and regulation in enabling smart infrastructure
- Challenges and opportunities in implementing Smart Roads in different contexts
- Case studies of Smart Road projects in the UK and internationally
- Collaboration across disciplines: engineers, technologists, and planners

Course Fees

For accurate information on pricing, please refer to the relevant website page.

Booking

To make a booking on the course please choose from the following options (via our website):

- Online booking
- Offline booking form (only available on request)

In-House Training

This course can be delivered in-house at your offices or at a suitable venue. In-house training can often work out more cost effective if you have several members of staff you would like to be trained at any one time.

If you would like a quotation or further information regarding our in-house training, please contact us using one of the enquiry forms on our website.