An Introduction to the Connected and Autonomous Vehicles Landscape
3.5 hour course

Course Introduction

This course is composed of 3 units plus a short final assessment. The first unit will give an overview of Connected and Autonomous Vehicles (CAVs) including both road-based CAVs, such as cars, buses, pods, etc., and non-road-based CAVs such as railways and aircrafts. Numerous CAV examples are given to illustrate CAV operation in different scenarios operating at different levels of autonomy. The unit also includes a history of the development of road-based CAVs.

The second unit gives an overview of the implications for the deployment of CAVs (for both road-based CAVs and non-road-based CAVs), including the potential benefits and drawbacks. It also looks at some of the potential barriers to large-scale CAV deployment and implications for cybersecurity.

The third unit is concerned with the future of CAVs, including how the vehicle manufacturing industry is changing and scenarios for CAV uptake over the coming decades. It also looks at CAV infrastructure requirements, potential use cases for road-based CAVs and the potential interaction between CAVs and traffic signal controllers.

Course units
- Unit 1: Connected Autonomous Vehicles – Overview
- Unit 2: Implications of Connected Autonomous Vehicles
- Unit 3: Future of Connected Autonomous Vehicles
- Unit 4: Final Assessment

Learning outcomes
- Understand what CAVs are and how they are being used and developed across a range of sectors
- Understand the SAE classification for levels of autonomy
- Understand the historical background to the development of CAVs
- Understand the potential benefits, potential drawbacks, potential barriers and implications for cybersecurity associated with CAV deployment
- Understand the manufacturing trends within the motor vehicle industry and some of the potential scenarios for CAV uptake
- Understand how the existing road infrastructure might be adapted for CAVs
- Understand some of the potential use cases for CAVs

Course content may be subject to change or updates. Please contact the IET for the latest course content.
Expert multidisciplinary e-courses for engineers at all career stages

Key features

- Provides an accessible but informative introduction to CAVs
- Thought-provoking and teaches students to think for themselves in what is a relatively new area

What makes the IET Academy online courses different?

A new training resource from the IET, the Academy provides flexible e-learning using the latest techniques to enhance engagement and recall.

Each individual unit is fully interactive, with tasks to compete along the way to help embed your learning. Hosted on the renowned Cross Knowledge platform, the Academy uses proven, effective learning techniques.

Benefits for organisations

This course can be booked for multiple users across your organisation, ensuring that your workforce is up to date and working to the same level. The flexible access allows learners to complete modules in their own time and at their own pace, so that businesses are not impacted by external training days.

Cost effective and flexible

For many engineers staying informed or changing technology to remain current in their role is paramount, however, finding the time and budget to attend external training is challenging. The IET Academy’s flexible learning platform allows access to training ‘anytime, anywhere’ or the course content can be quickly and easily integrated into an existing learning management system.

Target audience

Anyone wanting to gain an understanding of what CAVs are and the issues associated with their deployment across a range of sectors will find this course useful and it introduces the other courses in the Connected and Autonomous Vehicles series.

Other related courses

- Connected and Autonomous Vehicles – Computer Vision and AI
- Connected and Autonomous Vehicles – Cybersecurity
- Connected and Autonomous Vehicles – Connectivity
- Connected and Autonomous Vehicles – Sensors and Sensor Fusion
- Connected and Autonomous Vehicles – Human Factors and Human-Machine Interface

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