

16 DAYS · HYBRID · ENGLISH

Sustainable Technologies

Driving the Mobility Transition: From Vehicle Technologies to Sustainable Transport Systems

DATES

New dates in preparation

Date, price and enrollment deadline appear on the course page as soon as they are confirmed.

FORMAT	Hybrid	LANGUAGE	English
DURATION	16 days	LOCATION	Berlin

EDUCATIONAL LEAVE BEGINNERS ECTS CREDITS

Course Overview

The transport sector is central to reaching climate targets, and technology is reshaping how people and goods move. Electric drivetrains, new energy storage systems, charging infrastructure and smart grids are changing vehicles, business models and energy systems. Professionals in mobility, energy and the public sector need a solid understanding of these technologies and their environmental, economic and social impacts.

This course gives participants a practical grounding in the technologies behind the sustainable mobility transition. It links vehicle technologies with energy, infrastructure, environmental impacts, markets and policy. Lectures, practical activities, guest contributions from industry and site visits give participants the tools to critically assess mobility technologies and identify where they can be improved.

Course Content

FIRST PART

The course starts with the main drivers of sustainable and electric mobility and an overview of vehicle technologies, market developments and the policy context.

SECOND PART

The second part of the course covers the key technologies of the mobility transition, from the vehicle to the energy system. Participants look at how these technologies interact with infrastructure and markets and learn methods to evaluate their costs and environmental impacts.

MAIN TOPICS

The course covers the following topics:

- Drivers of sustainable and electric mobility: technologies, markets and policy
- Electric vehicle drivetrains
- Energy storage systems
- EV charging technologies and strategies
- Smart grid integration
- Electrification of public transport
- Total Cost of Ownership (TCO)
- Life Cycle Assessment (LCA)
- Micromobility
- Future outlook: sustainable aviation
- Site visits and company presentations

Learning Goals

- Understand the main drivers, market developments and policy frameworks of sustainable and electric mobility
- Explain how electric drivetrains, energy storage systems and charging technologies work
- Analyse how vehicles, charging infrastructure and the power grid interact
- Assess the economic viability of electric fleets using Total Cost of Ownership analysis
- Evaluate the environmental impacts of mobility technologies using Life Cycle Assessment
- Critically assess the social, economic and environmental implications of new mobility technologies

Participation & Requirements

TARGET GROUP

This course is designed for professionals who make or support decisions about mobility technologies without being technical specialists. These include staff at public transport authorities and operators, municipal and regional administrations, fleet and mobility managers, consultants, and professionals from the energy sector. It gives a broad overview of the field, from vehicle drivetrains and charging infrastructure to life cycle assessment and policy. No engineering background is required, which makes the course ideal for anyone who needs to understand the full picture of the sustainable mobility transition.

PRIOR KNOWLEDGE

High school/secondary school or higher. This course is recommended for participants who hold a first university degree or have relevant work experience. Language: Proof of English proficiency at Level B2 (or higher) of the Common European Framework of Reference for Languages (CEFR). This is not required for a high school or university degree completed in English. No specialist engineering background is required. Participants should have a general interest in mobility, energy and technology.

Instructors

Prof. Dr.-Ing. Dietmar Göhlich

HEAD OF THE CHAIR OF METHODS FOR PRODUCT DEVELOPMENT AND MECHATRONICS,
TECHNISCHE UNIVERSITÄT BERLIN

Dietmar Göhlich is a professor at TU Berlin and an expert in vehicle design and the methodical development of vehicles and mechatronic systems. He studied mechanical engineering at TU Berlin and earned his doctorate at the Georgia Institute of Technology in Atlanta. From 1989 to 2010, he held senior positions in passenger car development at Daimler AG, including in overall vehicle design, before joining TU Berlin in 2010. His research covers electric mobility, the electrification of bus fleets and heavy-duty trucks, charging infrastructure, and total cost of ownership analysis. He is also spokesperson of the Mobility2Grid research campus on the EUREF site in Berlin, where companies, universities and research institutions work together on the integrated energy and transport transition.

Dr.-Ing. Anne Syré

POSTDOC RESEARCHER AND PROJECT MANAGER, MOBILITY2GRID RESEARCH CAMPUS

Anne Syré is a researcher at TU Berlin and the Mobility2Grid research campus, specialising in the environmental assessment of transport systems. Her work focuses on life cycle assessment of battery electric and fuel cell vehicles, including passenger cars, trucks and city buses. She has developed methods that combine traffic simulation with life cycle assessment to evaluate the emissions of entire urban transport systems, and she researches strategies for decarbonising urban and freight transport.

Dr. techn. Francesco Cigarini**POSTDOC RESEARCHER AND PROJECT MANAGER, TECHNISCHE UNIVERSITÄT BERLIN**

Francesco Cigarini is a researcher at the Chair of Methods for Product Development and Mechatronics at TU Berlin. He studied mechatronics at the University of Modena and Reggio Emilia and earned his doctorate in electrical engineering at TU Wien, where he also worked at the Institute of Automation and Control. His research focuses on electric vehicle technologies and energy efficiency, including the energy consumption of electric buses and the evaluation of battery technologies for new applications such as electric aviation.

QUESTIONS ABOUT THIS COURSE?

Register Now<https://academy-tu.berlin/en/courses/short/engineering-mobility/sustainable-technologies>

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Course is recognized as educational leave in Berlin

No prior IT knowledge required



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