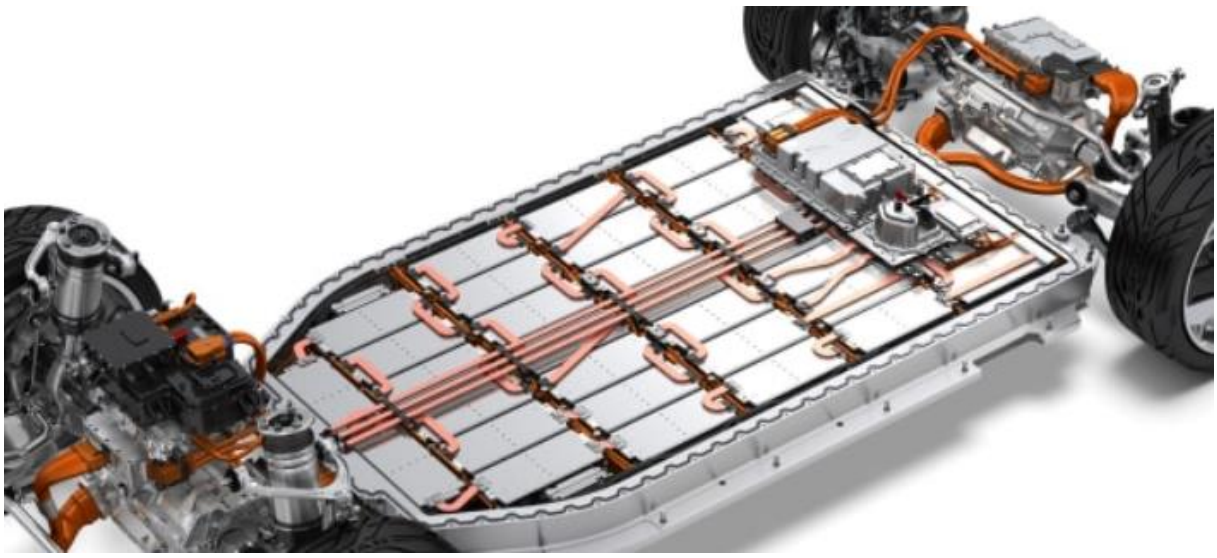

## Introduction to Electric Vehicles - System & Component Design

The aim of the course is to explain the basics of electric drive systems and applications for electric vehicles. Pros and cons of electric vehicles are highlighted and examples are given of how electric drivetrains can be implemented in different types of vehicles. The various main components required for electrification and basic principles of how they work are presented.

A major part of the course focuses on energy storage in vehicles and different types of lithium batteries with regard to different types of chemistry, how they are affected by temperature, aging and charging and how large battery packs are handled.

The course also addresses various standards that exist within the automotive industry regarding electrified vehicles.

The lecturer is a specialist with long experience in system design of electric vehicles.

### Course length: 8 hours, mixed as lectures and demos

### Course overview:

- High-level overview
  - Basic theory
  - Topologies
  - Various electric vehicles
- Component and system design
  - Power electronics
  - Electric Machines
  - Inverters & Converters
  - On-Board Chargers
  - Energy Storage
  - Battery Management System
  - Auxiliary System
  - Vehicle Standards

### Course target group:

Automotive engineers who needs a basic understanding of electric vehicle system design and required components.

### Course outcome:

Better understanding of the challenges and need to shift to electric vehicle development.

**ENGINEERING FORCE Sweden AB**
Skårbyvägen 39
434 95 Kungsbacka

**Telephone** + 46 761-72 99 50
**e-mail** info@e4s.se
**Org.no**. 556960-5347

www.e4s.se
www.engineeringforce.se