



# Masterthesis

## *Changing Automotive Industry: Roadmap "Skillset" in Times of Digitalization and Electrification*

### Baseline:

Electromobility is leaving its niche and making its way into a broad industrialized application. In addition to purely battery-powered vehicles, automotive OEMs are increasingly announcing that they will electrify their future vehicle fleets in the form of hybrid drives.

A central effort is the integration of the main components of the electric drive train - namely battery, electric motor, inverter and transmission. For example, there are highly integrated drive systems for hybrid vehicles or complete systems in the form of an electrically driven axle. The integration of peripheral functionalities such as cooling systems or connection concepts to the vehicle also play a decisive role. New challenges arise not only from the design side, but also from the production technology perspective.

This leads to a multitude of new activities for current employees at OEMs and suppliers. At the same time, the contents of the so-called "NewWork" movement are becoming part of everyday working life. The desire for flexible working models and at the same time agile project procedures presents employers and employees with new challenges.

### Your Task:

Your task is to develop the roadmap "skillset". The task is to investigate how the change of components of the electric powertrain affects the required activity profiles of engineers and technicians.

- Technical and production-side comparison of conventional and electric drive trains
- Derivation of changing contents and corresponding activity profile
- Development of perspectives for change taking into account currents such as NewWork.
- Derivation of the roadmap "Skill-set" in order to be able to meet the changes in the automotive industry.

### The prerequisites:

- Studies in industrial engineering or mechanical engineering (or comparable)
- Motivation and commitment
- Interest in the mobility sector
- Ability to structure content
- Very good knowledge of German or English

### We offer:

- Comprehensive support
- Delimited tasks, quick familiarisation possible
- Expert insight into electric vehicle production
- Integration into industrial projects of RWTH Aachen University
- Publication in the course of a master thesis possible

### Application:

In addition to a motivation letter, please send us an excerpt of your current grade as well as your curriculum vitae and testimonials to the e-mail address below.

### Your contact person at the PEM:

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