

## Module Handbook

TUK MODHB Homepage

### Notes on the module handbook of the department Mechanical and Process Engineering

Die hier dargestellten veröffentlichten Studiengang-, Modul- und Kursdaten des Fachbereichs Maschinenbau und Verfahrenstechnik ersetzen die Modulbeschreibungen im KIS und wurden mit Ausnahme folgender Studiengänge am 28.10.2020, bzw. am 13.01.2021 verabschiedet.

Ausnahmen:

- BEd. Lehramt Metalltechnik (Stand WS 19/20): [https://www.mv.uni-kl.de/fileadmin/mv/Studium\\_Lehre/Modulhandbuecher/MHB\\_Bachelor\\_Lehramt\\_Metalltechnik.pdf](https://www.mv.uni-kl.de/fileadmin/mv/Studium_Lehre/Modulhandbuecher/MHB_Bachelor_Lehramt_Metalltechnik.pdf)
- MEd. Lehramt Metalltechnik Werkstoffe und Fertigung (Stand WS 19/20): [https://www.mv.uni-kl.de/fileadmin/mv/Studium\\_Lehre/Modulhandbuecher/MHB\\_Master\\_Lehramt\\_Metalltechnik\\_-\\_Werkstoffe\\_und\\_Fertigung.pdf](https://www.mv.uni-kl.de/fileadmin/mv/Studium_Lehre/Modulhandbuecher/MHB_Master_Lehramt_Metalltechnik_-_Werkstoffe_und_Fertigung.pdf)
- MEd. Lehramt Metalltechnik Maschinen- und Fahrzeugtechnik (Stand WS 19/20): [https://www.mv.uni-kl.de/fileadmin/mv/Studium\\_Lehre/Modulhandbuecher/MHB\\_Master\\_Lehramt\\_Metalltechnik\\_-\\_Fahrzeugtechnik.pdf](https://www.mv.uni-kl.de/fileadmin/mv/Studium_Lehre/Modulhandbuecher/MHB_Master_Lehramt_Metalltechnik_-_Fahrzeugtechnik.pdf)
- MEd. Lehramt Metalltechnik Verfahrenstechnik (Stand WS 19/20): [https://www.mv.uni-kl.de/fileadmin/mv/Studium\\_Lehre/Modulhandbuecher/MHB\\_Master\\_Lehramt\\_Metalltechnik\\_-\\_Verfahrenstechnik.pdf](https://www.mv.uni-kl.de/fileadmin/mv/Studium_Lehre/Modulhandbuecher/MHB_Master_Lehramt_Metalltechnik_-_Verfahrenstechnik.pdf)

## Module MV-LAF-M157-M-4

Vehicle and Powertrain concepts – develop ideas to projects (M, 2.0 LP)

### Module Identification

Module Number	Module Name	CP (Effort)
MV-LAF-M157-M-4	<i>Vehicle and Powertrain concepts – develop ideas to projects</i>	2.0 CP (60 h)
MV-VKM-M157-M-4	<i>Vehicle and Powertrain concepts – develop ideas to projects</i>	2.0 CP (60 h)

### Basedata

CP, Effort	2.0 CP = 60 h
Position of the semester	1 Sem. in SuSe
Level	[4] Bachelor (Specialization)
Language	[DE] German
Module Manager	Günthner, Michael, Prof. Dr.-Ing. (PROF   DEPT: MV)
Lecturers	Günthner, Michael, Prof. Dr.-Ing. (PROF   DEPT: MV) Ehlers, Claus, Dr.-Ing. (EXT   DEPT: MV)
Area of study	[MV-LAF] Vehicle Propulsion Systems
Reference course of study	[MV-88.B78-SG] M.Sc. Production Engineering in Mechanical Engineering
Lifecycle-State	[NORM] Active

## Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
1V+1X	MV-LAF-86311-K-4	P	-	PL1	2.0	SuSe

- About [MV-LAF-86311-K-4]: Title: "Vehicle and Powertrain concepts – develop ideas to projects"; Presence-Time: 28 h; Self-Study: 32 h

## Examination achievement PL1

- Form of examination: **written or oral examination**
- Examination Frequency: each semester
- Examination number: 10209 ("Vehicle and Powertrain concept")

written (45-60 minutes) or oral (15-30 minutes) examination

## Evaluation of grades

The grade of the module examination is also the module grade.

### Contents

From [MV-LAF-86311-K-4] Vehicle and Powertrain concepts – develop ideas to projects:

1. Mobility of the future
2. Requirements:
  - Customer
  - Society and technology
  - Legislator
  - Competition
3. Product development process - vehicle:

- Vehicle architecture and modules, vehicle concepts and packages, body styles
- Shaping and design process
- Resolution of conflicting goals in the vehicle concept in the early phase
- Specification of vehicle projects
- Business case for new projects

#### 4. Product development process - powertrain:

- Powertrain concepts, technologies, powertrain as a system
- Specification of powertrain architectures and projects
- Business case for new projects

#### 5. E-Mobility:

- Importance
- Concepts
- edrive

## Competencies / intended learning achievements

### From [MV-LAF-86311-K-4] Vehicle and Powertrain concepts – develop ideas to projects:

#### 1. Lecture:

Knowledge of the essential boundary conditions for automotive product projects, strategic thinking, processing of complex and interdisciplinary issues in vehicle and powertrain development, dealing with uncertain boundary conditions.

The students get to know fundamental aspects of the early phase of product projects in the automotive industry, they are able to work out a structured approach and to cooperate in a team from various disciplines to derive a target.

#### 2. Plant visit:

Demonstrating the effects/influences of constructional and conceptual product decisions for large-scale production, independent assessment of complex correlations and the necessary considerations of production-relevant boundary conditions for product design.

## Literature

### From [MV-LAF-86311-K-4] Vehicle and Powertrain concepts – develop ideas to projects:

- Braess, Seifert: Handbuch Kraftfahrzeugtechnik, Vieweg Verlag, ISBN 3-528-33114-3

## Requirements for attendance of the module (informal)

Recommended:

### Modules:

- [MV-IMAD-B107-M-4] Automotive Engineering (M, 5.0 LP)

## Requirements for attendance of the module (formal)

None

## References to Module / Module Number [MV-LAF-M157-M-4]

<b>Module-Pool</b>	<b>Name</b>
[MV-ALLG-2022-MPOOL-6]	Wahlpflichtmodule Master allgemein 2022
[MV-ALL-MPOOL-6]	Wahlpflichtmodule allgemein
[MV-FT-2022-MPOOL-6]	Wahlpflichtmodule M.Sc. Fahrzeugtechnik 2022
[MV-FT-MPOOL-6]	Wahlpflichtmodule Fahrzeugtechnik
[MV-PE-2022-MPOOL-6]	Wahlpflichtmodule M.Sc. Produktentwicklung 2022
[MV-PE-MPOOL-6]	Wahlpflichtmodule Produktentwicklung im Maschinenbau

**References to Module / Module Number [MV-VKM-M157-M-4]**