

## Module Handbook (<https://modhb.uni-kl.de/>)

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### 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 verabschiedet.

Ausnahmen:

- BSc. Bio- und Chemieingenieurwissenschaften (Stand WS 20/21): [https://www.mv.uni-kl.de/fileadmin/mv/Studium\\_Lehre/Modulhandbuecher/MH\\_BSc\\_BCI.pdf](https://www.mv.uni-kl.de/fileadmin/mv/Studium_Lehre/Modulhandbuecher/MH_BSc_BCI.pdf) ([https://www.mv.uni-kl.de/fileadmin/mv/Studium\\_Lehre/Modulhandbuecher/MH\\_BSc\\_BCI.pdf](https://www.mv.uni-kl.de/fileadmin/mv/Studium_Lehre/Modulhandbuecher/MH_BSc_BCI.pdf))
- 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) ([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))
- MSc. Bio- und Chemieingenieurwissenschaften (Stand WS 20/21): [https://www.mv.uni-kl.de/fileadmin/mv/Studium\\_Lehre/Modulhandbuecher/MH\\_Msc\\_BCI.pdf](https://www.mv.uni-kl.de/fileadmin/mv/Studium_Lehre/Modulhandbuecher/MH_Msc_BCI.pdf) ([https://www.mv.uni-kl.de/fileadmin/mv/Studium\\_Lehre/Modulhandbuecher/MH\\_Msc\\_BCI.pdf](https://www.mv.uni-kl.de/fileadmin/mv/Studium_Lehre/Modulhandbuecher/MH_Msc_BCI.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) ([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) ([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) ([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-IMAD-161-M-7

Principles of Commercial Vehicle Technology (M, 4.0 LP)

### Module Identification

Module Number	Module Name	CP (Effort)
MV-IMAD-161-M-7	<i>Principles of Commercial Vehicle Technology</i>	4.0 CP (120 h)
MV-KIMA-161-M-7	<i>Principles of Commercial Vehicle Technology</i>	4.0 CP (120 h)

### Basedata

CP, Effort	4.0 CP = 120 h
Position of the semester	1 Sem. in WiSe
Level	[7] Master (Advanced)
Language	[EN] English
Module Manager	Stephan, Nicole, Dr.-Ing. (WMA   DEPT: MV) (/staff/279/) Teutsch, Roman, Prof. Dr.-Ing. (PROF   DEPT: MV, GS) (/staff/327/)
Lecturers	Teutsch, Roman, Prof. Dr.-Ing. (PROF   DEPT: MV, GS) (/staff/327/)
Area of study	[MV-IMAD] Mechanical and Automotive Design
Reference course of study	[MV-82.103-SG] B.Sc. Mechanical Engineering (/mhb/FB-MV/cos-508/)
Lifecycle-State	[NORM] Active

## Notice

Examination also possible in German

## Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V+1U	MV-IMAD-86264-K-4 (/mhb/courses/MV-IMAD-86264-K-4/)	P	-	PL1	4.0	WiSe

- About [MV-IMAD-86264-K-4]: Title: "Principles of Commercial Vehicle Technology"; Presence-Time: 42 h; Self-Study: 78 h

## Examination achievement PL1

- Form of examination: **written or oral examination**
- Examination Frequency: each semester
- Examination number: 10264 ("Principles of Commercial Vehicle Technology")

Written (60-90 minutes) or oral (30-45 minutes) examination, will be announced at the beginning of the course.

## Evaluation of grades

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

## Contents

From [MV-IMAD-86264-K-4] Principles of Commercial Vehicle Technology (/mhb/courses/MV-IMAD-86264-K-4/):

- Truck Design and Concept
- Function and Design of Chassis, Drivetrain, Structure and Body, Cab
- Driving Dynamics of Trucks
- Special Trucks and other Commercial Vehicles
- Future Developments

## Competencies / intended learning achievements

From [MV-IMAD-86264-K-4] Principles of Commercial Vehicle Technology (/mhb/courses/MV-IMAD-86264-K-4/):

## 1. Lecture

Students will be able

- to describe the requirements and basic technologies of modern commercial vehicles
- to explain the basic methods for the dimensioning and evaluation of commercial Vehicles and their components
- to understand and explain the major driving dynamics of commercial vehicles including driving resistances, dynamic loads and driving limits
- to give an overview on special vehicles and future developments

## 2. Exercise

Students will be able to

- identify and calculate the dynamic axle loads
- dimension a truck by means of a BO-Kraft circle
- calculate the air suspension of a truck
- describe the typical coast-down test and calculate the driving resistances that occur during this test

## Literature

From [MV-IMAD-86264-K-4] Principles of Commercial Vehicle Technology (/mhb/courses/MV-IMAD-86264-K-4/):

- HOEPKE (Hrsg.) u.a.: Nutzfahrzeugtechnik, 3. Aufl., (2004), Vieweg Verl.;
- WIESBADEN N.N.: Grundlagen der Nutzfahrzeugtechnik - Basiswissen Lkw und Bus, MAN Nutzfahrzeuge AG, München (2004);
- N.N.: Truck Systems Design Handbook (Vol. II) PT-87, Society of Automotive Engineers (SAE), Warrendale, PA, USA (2002);
- NUNNEY, M. J.: Light and Heavy Vehicle Technology (4. Ed.) 2007, Elsevier;
- FITCH, J. W.: Motor Truck Engineering Handbook (4. Ed.) 1994, No. R-125, Society of Automotive Engineers (SAE)

## Requirements for attendance (informal)

Modules:

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

## Requirements for attendance (formal)

None

## References to Module / Module Number [MV-IMAD-161-M-7]

Course of Study	Section	Choice/Obligation
[GS-88.844-SG] M.Sc. Commercial Vehicle Technology (/mhb/FB-GS/cos-680/)	Mandatory modules	[P] Compulsory

## References to Module / Module Number [MV-KIMA-161-M-7]

Course of Study	Section	Choice/Obligation
[MV-82.103-SG] B.Sc. Mechanical Engineering (/mhb/FB-MV/cos-508/)	Vehicle Engineering (if chosen)	[P] Compulsory