

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
- 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
- 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
- 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

Module MV-IMAD-172-M-4

Railway Vehicles I (Basics) (M, 3.0 LP)

Module Identification

| Module Number | Module Name | CP (Effort) |
|-----------------|------------------------------------|---------------|
| MV-IMAD-172-M-4 | <i>Railway Vehicles I (Basics)</i> | 3.0 CP (90 h) |
| MV-KIMA-172-M-4 | <i>Railway Vehicles I (Basics)</i> | 3.0 CP (90 h) |

Hint concerning Module Number MV-KIMA-172-M-4:
Old module number.

Basedata

| | |
|---------------------------|--|
| CP, Effort | 3.0 CP = 90 h |
| Position of the semester | 1 Sem. in WiSe |
| Level | [4] Bachelor (Specialization) |
| Language | [DE] German |
| Module Manager | Stephan, Nicole, Dr.-Ing. (WMA DEPT: MV) Teutsch, Roman, Prof. Dr.-Ing. (PROF DEPT: MV, GS) |
| Lecturers | Schwickert, Martin, Dr.-Ing. (EXT DEPT: MV) |
| Area of study | [MV-iMAD] Mechanical and Automotive Design |
| Reference course of study | [MV-88.235-SG] M.Sc. Vehicle Engineering |
| Lifecycle-State | [NORM] Active |

Courses

| Type/SWS | Course Number | Choice in Module-Part | SL | PL | CP | Sem. |
|----------|-------------------|-----------------------|----|-----|-----|------|
| 2V | MV-IMAD-86262-K-4 | P | - | PL1 | 3.0 | WiSe |

- About [MV-IMAD-86262-K-4]: Title: "Railway Vehicles I (Basics)"; Presence-Time: 28 h; Self-Study: 62 h

Examination achievement PL1

- Form of examination: **written or oral examination**
- Examination Frequency: each semester
- Examination number: 10262 ("Railway Vehicle Technology I")

Written (60-90 minutes) or oral (30-45 minutes) examination

Evaluation of grades

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

Contents

From [MV-IMAD-86262-K-4] Railway Vehicles I (Basics):

- Classification and importance of the railroad system
- Areas of application of rail vehicles
- Vehicle and train configurations
- Interaction of wheel and rail
- Driving resistances
- Vehicle concepts (car body, chassis, drive units and brake systems)

Competencies / intended learning achievements

From [MV-IMAD-86262-K-4] Railway Vehicles I (Basics):

Students will be able to

- classify the railroad system as a transport system
- describe the different vehicle and train configurations
- explain the wheel-rail contact and the interaction of wheelset and track
- calculate the running resistance of a rail vehicle
- compare and evaluate different rail vehicle concepts
- calculate and compare the required clearance gauge of different rail vehicle concepts

Literature

From [MV-IMAD-86262-K-4] Railway Vehicles I (Basics):

- WENDE, D.: Fahrdynamik des Schienenverkehrs, Teubner-Verlag Wiesbaden
- KNOTHE, K.; STICHEL, S.: Schienenfahrzeugdynamik, Springer-Verl. Berlin
- MAYER, J. et al.: Handbuch - Das System Bahn, Verlag Eurailpress
- JANICKI, J.; REINHARD, H.: DB-Fachbuch Schienenfahrzeugtechnik, 2. Aufl. (2009), Bahnfachverlag

Requirements for attendance of the module (informal)

None

Requirements for attendance of the module (formal)

None

References to Module / Module Number [MV-IMAD-172-M-4]

| Module-Pool | Name |
|------------------|-----------------------------------|
| [MV-ALL-MPOOL-6] | Wahlpflichtmodule allgemein |
| [MV-FT-MPOOL-6] | Wahlpflichtmodule Fahrzeugtechnik |

References to Module / Module Number [MV-KIMA-172-M-4]