

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-WKK-251-M-4

Laboratory "Technology of Materials" (M, 5.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
MV-WKK-251-M-4	Laboratory "Technology of Materials"	5.0 CP (150 h)

Basedata

CP, Effort	5.0 CP = 150 h
Position of the semester	1 Sem. in WiSe
Level	[4] Bachelor (Specialization)
Language	[DE] German
Module Manager	Beck, Tilmann, Prof. Dr.-Ing. (PROF DEPT: MV) Geiß, Paul Ludwig, Prof. Dr.-Ing. (PROF DEPT: MV) Mitschang, Peter, Prof. Dr.-Ing. (EXT DEPT: MV) Seewig, Jörg, Prof. Dr.-Ing. (PROF DEPT: MV)
Lecturers	Beck, Tilmann, Prof. Dr.-Ing. (PROF DEPT: MV) Geiß, Paul Ludwig, Prof. Dr.-Ing. (PROF DEPT: MV) Seewig, Jörg, Prof. Dr.-Ing. (PROF DEPT: MV) Breuer, Ulf, Prof. Dr.-Ing. (EXT DEPT: MV) Mitschang, Peter, Prof. Dr.-Ing. (EXT DEPT: MV)
Area of study	[MV-WKK] Materials Science and Engineering
Reference course of study	[MV-82.103-SG] B.Sc. Mechanical Engineering
Lifecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
4L	MV-WKK-86169-K-4	P	LABOR	no	5.0	WiSe

- About [MV-WKK-86169-K-4]: Title: "Laboratory "Technology of Materials""; Presence-Time: 56 h; Self-Study: 94 h
- About [MV-WKK-86169-K-4]: The study achievement "[LABOR] practical laboratory / experimental work" must be obtained.
- About [MV-WKK-86169-K-4]:

Active participation in the lab required.

Depending on the examination regulations, the course work can/must be submitted as graded examination work. In this case the repetition rules of the examination regulations for practical laboratory work apply.

Contents

From [MV-WKK-86169-K-4] Laboratory "Technology of Materials":

- Measurement of surface roughness
- Metallography
- Crack propagation
- Fatigue strength
- Processing of polymer materials 1 – preparation of composite materials and adhesive joints with chemically reacting resins
- Processing of polymer materials 2 - preparation of composite materials with thermoplastics
- The fracture mechanics of polymers and composites - crack resistance and mechanisms of reinforcement
- The tribology of polymers and composites - friction and wear
- Polymer mechanics and temperature - the glass transition

- Mechanisms of corrosion and corrosion protection of metallic materials

Competencies / intended learning achievements

From [MV-WKK-86169-K-4] Laboratory "Technology of Materials":

Students will be able to

- interpret experiments in the field of materials engineering
- evaluate experiments
- explain relationships between materials, manufacturing processes and component properties

Literature

From [MV-WKK-86169-K-4] Laboratory "Technology of Materials":

- E. Macherauch: Praktikum in Werkstoffkunde, F. Vieweg, Braunschweig
- H. Blumenauer: Werkstoffprüfung, Deutscher Verlag für Grundstoffindustrie, Leipzig, Stuttgart
- E. Roos: Werkstoffkunde für Ingenieure, Springer Verlag, Menges, Haberstroh, Michaeli, Schmachtenberg: Werkstoffkunde Kunststoffe, Carl Hanser Verlag
- G.W. Ehrenstein: Faserverbund-Kunststoffe, Carl Hanser Verlag

Requirements for attendance of the module (informal)

Modules:

- [MV-WKK-B100-M-4] Materials Science (M, 11.0 LP)

Requirements for attendance of the module (formal)

None

References to Module / Module Number [MV-WKK-251-M-4]

Course of Study	Section	Choice/Obligation
[MV-82.103-SG] B.Sc. Mechanical Engineering	[Specialisation] Material Science and Technology	[P] Compulsory
[MV-82.103b-SG#2022] B.Sc. Maschinenbau 2022 [2022]	[Specialisation] Wahlpflichtbereich / Kompetenzfelder	[WP] Compulsory Elective
Module-Pool	Name	
[MV-MB-2022-MPOOL-4]	Wahlpflichtmodule Bachelor Maschinenbau	