TECHNISCHE UNIVERSITÄT KAISERSLAUTERN

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

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 wuden 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)
- 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)
- 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)
- 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-FBK-282-M-4

Cutting and abrasive machining of materials (M, 3.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
MV-FBK-282-M-4	*Cutting and abrasive machining of materials*	3.0 CP (90 h)

Basedata

CP, Effort	3.0 CP = 90 h
Position of the semester	1 Sem. in SuSe
Level	[4] Bachelor (Specialization)
Language	[DE] German
Module Manager	Kirsch, Benjamin, Dr.-Ing. (WMA | DEPT: MV) (/staff/259/)
Lecturers	Kirsch, Benjamin, Dr.-Ing. (WMA | DEPT: MV) (/staff/259/)
Area of study	[MV-FBK] Manufacturing Technology and Production Systems
Reference course of study	[MV-82.103-SG] B.Sc. Mechanical Engineering (/mhb/FB-MV/cos-508/)
Livecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V	**MV-FBK-86512-K-4** (/mhb/courses/MV-FBK-86512-K-4/)	P	-	PL1	3.0	SuSe

- About **[MV-FBK-86512-K-4]**: Title: "Cutting and abrasive machining of materials"; Presence-Time: 28 h; Self-Study: 62 h

Examination achievement PL1

- Form of examination: **written exam (Klausur) (90-120 Min.)**
- Examination Frequency: each semester
- Examination number: 10282 ("Cutting and Abrasive Machining of Materials")

Evaluation of grades

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

Contents

From [MV-FBK-86512-K-4] Cutting and abrasive machining of materials (/mhb/courses/MV-FBK-86512-K-4/)**:**

- Material removal processes (turning, milling, drilling, grinding), chip formation, burr formation
- Cutting tools, cutting tool materials, coatings, process kinematics
- Alteration of surface layer and wear
- Material removal micro machining processes
- Machinability of engineering materials

Competencies / intended learning achievements

From [MV-FBK-86512-K-4] Cutting and abrasive machining of materials (/mhb/courses/MV-FBK-86512-K-4/)**:**

The students are able to:

- point out connections between materials and manufacturing processes
- describe chip and burr formation
- name and characterize cutting tool materials
- depict definitions and characteristics of material removal processes

- describe material removal micro machining processes
- calculate undeformed chip parameters and process forces for material removal micro machining processes
- describe the origin of alteration of surface layer and wear
- select processes and tools for different material groups
- estimate processes and tools with regard to their suitability for machining tasks

Literature

From [MV-FBK-86512-K-4] Cutting and abrasive machining of materials (/mhb/courses/MV-FBK-86512-K-4/)**:**

- König / Klocke: Fertigungsverfahren, Bd. 1-5,
- Springer VDI-Verlag, Tönshoff/Denkena: Spanen, Springer VDI-Verlag

Requirements for attendance (informal)

Modules:

- [MV-FBK-15-M-4] Introduction to Manufacturing Technology (M, 5.0 LP) (/mhb/modules/MV-FBK-15-M-4/)
- [MV-WKK-B100-M-4] Materials Science (M, 11.0 LP) (/mhb/modules/MV-WKK-B100-M-4/)

Requirements for attendance (formal)

None

References to Module / Module Number [MV-FBK-282-M-4]

Course of Study	Section	Choice/Obligation
[MV-82.103-SG] B.Sc. Mechanical Engineering (/mhb/FB-MV/cos-508/)	Production Technology (if chosen)	[P] Compulsory
[WIW-82.789-SG] B.Sc. Business Studies with Technical Qualifications (/mhb/FB-WIW/cos-524/)	Field of study Mechanical Engineering	[WP] Compulsory Elective
[WIW-82.?-SG#2021] B.Sc. Business Studies with Technical Qualifications 2021 [2021] (/mhb/FB-WIW/cos-682/)	Technical Profile Area	[WP] Compulsory Elective