TECHNISCHE UNIVERSITÄT KAISERSLAUTERN

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 wuden 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-195-M-4

Fusion welding and pressure welding technology II (M, 3.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
MV-WKK-195-M-4	*Fusion welding and pressure welding technology II*	3.0 CP (90 h)

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	Beck, Tilmann, Prof. Dr.-Ing. (PROF | DEPT: MV)
Lecturers	Beck, Tilmann, Prof. Dr.-Ing. (PROF | DEPT: MV) Smaga, Marek, Dr.-Ing. (WMA | DEPT: MV, GS)
Area of study	[MV-WKK] Materials Science and Engineering
Reference course of study	[MV-88.202-SG] M.Sc. Production Engineering
Livecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V	**MV-WKK-89163-K-4**	P	-	PL1	3.0	WiSe

- About **[MV-WKK-89163-K-4]**: Title: "Fusion welding and pressure welding technology II"; Presence-Time: 28 h; Self-Study: 62 h

Examination achievement PL1

- Form of examination: **written or oral examination**
- Examination Frequency: each semester
- Examination number: 10179 ("Fusion welding and pressure welding technology II")

Written (90 minutes) or oral (25-35 minutes) examination

Evaluation of grades

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

Contents

From [MV-WKK-89163-K-4] Fusion welding and pressure welding technology II:

- Functional principals of important pressure welding processes, such as:
  - Ultrasonic welding
  - Friction welding
  - Friction stir welding
  - Resistance welding
  - Diffusion welding
- Microstructure evolution in pressure welding process
- Technical applications of welded joints on various metals as well as hybrid joining
- Novel research in the field of ultrasonic welding
- Destructive and non-destructive test methods for fusion and pressure welded joints

Competencies / intended learning achievements

From [MV-WKK-89163-K-4] Fusion welding and pressure welding technology II:

The following expertises will be promoted:

- Explain the function principles of the most important pressure welding processes
- Allocate and analyze the mechanical properties of the welded joints that are set depending on the material and the process
- Specify pressure welding processes for safe and economical welded joints
- Explain destructive and non-destructive test methods for fusion and pressure welded joints

Literature

From [MV-WKK-89163-K-4] Fusion welding and pressure welding technology II:

- J. Ruge: Handbuch der Schweißtechnik, Springer Verlag
- H. Fahrenwaldt: Schweißtechnik, Vieweg Verlag
- U. Dilthey: Schweißtechnische Fertigungsverfahren 1 und 2, Springer Verlag

Requirements for attendance of the module (informal)

Modules:

- [MV-AWP-253-M-4] Materials Science I for Students of other faculties (M, 3.0 LP)
- [MV-AWP-254-M-4] Materials Science I for Students of other faculties (M, 3.0 LP)
- [MV-WKK-187-M-4] Fusion welding and pressure welding technology I (M, 3.0 LP)
- [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-195-M-4]

Module-Pool	Name
[MV-ALLG-2022-MPOOL-6]	Wahlpflichtmodule Master allgemein 2022
[MV-ALL-MPOOL-6]	Wahlpflichtmodule allgemein
[MV-MatWerk-2022-MPOOL-6]	Wahlpflichtmodule M.Sc. Materialwissenschaften und Werkstofftechnik 2022
[MV-MatWerk-MPOOL-6]	Wahlpflichtmodule Materialwissenschaften und Werkstofftechnik
[MV-PT-2022-MPOOL-6]	Wahlpflichtmodule M.Sc. Produktionstechnik 2022
[MV-PT-MPOOL-6]	Wahlpflichtmodule Produktionstechnik