TECHNISCHE UNIVERSITÄT KAISERSLAUTERN

Module Handbook

TUK MODHB Homapage

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-FBK-M202-M-7

Advanced Industrial Engineering (M, 3.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
MV-FBK-M202-M-7	*Advanced Industrial Engineering*	3.0 CP (90 h)

Basedata

CP, Effort	3.0 CP = 90 h
Position of the semester	1 Sem. in WiSe
Level	[7] Master (Advanced)
Language	[DE] German
Module Manager	Aurich, Jan, Prof. Dr.-Ing. (PROF | DEPT: MV)
Lecturers	Schneider, Frank, Dr.-Ing. (EXT | DEPT: MV)
Area of study	[MV-FBK] Manufacturing Technology and Production Systems
Reference course of study	[MV-88.B78-SG] M.Sc. Production Engineering in Mechanical Engineering
Livecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
3V	MV-FBK-86527-K-7	P	-	PL1	3.0	WiSe

- About **[MV-FBK-86527-K-7]**: Title: "Advanced Industrial Engineering"; Presence-Time: 42 h; Self-Study: 48 h

Examination achievement PL1

- Form of examination: **oral examination (30-45 Min.)**
- Examination Frequency: each semester
- Examination number: 10527 ("Forming technology")

Evaluation of grades

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

Contents

From [MV-FBK-86527-K-7] Advanced Industrial Engineering:

- Definition of industrial engineering and production planning
- Classification of industrial engineering and production planning in the context of the production system
- Working system design (simultaneous engineering, value stream design, DFMA, ...)
- Industrial Engineering Methods (MTM, REFA, ergonomics, ...)
- Standards (process releases, work assignments, ...)
- Agile project and production management
- Adaptability of production processes
- Digital tools in the context of Industry 4.0

Competencies / intended learning achievements

From [MV-FBK-86527-K-7] Advanced Industrial Engineering:

The students are able to:

- Define industrial engineering and production planning
- Classify industrial engineering and production planning in the context of the production system
- Describe, apply and evaluate methods of working systems design, e.g. analyze process chains, identify weak points and derive optimizations
- Describe, apply and evaluate methods of working system design, e.g. understand the basic system of the MTM process
- Describe the agile project and production management as well as reproduce and explanation of the advantages and disadvantages
- Record and assess the importance of the adaptability of production processes
- Describe and explain advantages of digital tools in industrial engineering and production planning

Literature

From [MV-FBK-86527-K-7] Advanced Industrial Engineering:

- W. Eversheim: Organisation in der Produktionstechnik, Bd. 1 -4, Springer VDI-Verlag.
- W. Eversheim, G. Schuh: Gestaltung von Produktionssystemen, Springer VDI-Verlag.
- REFA: Industrial Engineering - Standardmethoden zur Produktivitätssteigerung und Prozessoptimierung, Hanser Verlag.
- R. Bokranz, K. Landau: Handbuch Industrial Engineering: Produktivitätsmanagement mit MTM, Schäffer Poeschel Verlag.
- D. Dixius: Simultane Projektorganisation: Ein Leitfaden für die Projektarbeit im simultaneous Engineering, Springer Verlag.
- J. Krottmaier: Leitfaden Simultaneous Engineering: Kurze Entwicklungszeiten, Niedrige Kosten, Hohe Qualität, Springer Verlag.
- W. Domschke: Produktionsplanung: Ablauforganisatorische Aspekte (Springer-Lehrbuch), Springer Verlag.
- K. Erlach: Wertstromdesign: Der Weg zur schlanken Fabrik (VDI-Buch), Springer VDI-Verlag.

Registration

Requires registration! Information about this on the institute's notice board and/or the institute's homepage.

Requirements for attendance of the module (informal)

Recommended:

Modules:

- [MV-FBK-104-M-4] Manufacturing Systems Engineering I (M, 3.0 LP)
- [MV-FBK-112-M-4] Manufacturing Systems Engineering II (M, 3.0 LP)
- [MV-FBK-114-M-4] Quality Management I (M, 3.0 LP)
- [MV-FBK-192-M-7] Quality Management II (M, 3.0 LP)

Requirements for attendance of the module (formal)

None

References to Module / Module Number [MV-FBK-M202-M-7]

Module-Pool	Name
[MV-ALL-MPOOL-6]	Wahlpflichtmodule allgemein
[MV-MBBWL-MPOOL-6]	Wahlpflichtmodule Maschinenbau mit Betriebswirtschaftslehre
[MV-MV-SIAK-DT-ENG-MPOOL-6]	SIAK Zertifikat "Digitale Transformation" - Module MV "Engineering"
[MV-PE-MPOOL-6]	Wahlpflichtmodule Produktentwicklung im Maschinenbau
[MV-PT-MPOOL-6]	Wahlpflichtmodule Produktionstechnik