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-TD-68-M-4

Development and Design of Chemical Processes (M, 2.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
MV-TD-68-M-4	*Development and Design of Chemical Processes*	2.0 CP (60 h)

Basedata

CP, Effort	2.0 CP = 60 h
Position of the semester	1 Sem. in SuSe
Level	[4] Bachelor (Specialization)
Language	[DE] German
Module Manager	Hasse, Hans, Prof. Dr.-Ing. (PROF | DEPT: MV) (/staff/314/)
Lecturers	Beßling, Bernd, Dr. (EXT | DEPT: MV) (/staff/653/)
Area of study	[MV-LTD] Engineering Thermodynamics
Reference course of study	[MV-82.B10-SG] B.Sc. Energy and Process Engineering (/mhb/FB-MV/cos-528/)
Livecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V	**MV-TD-86078-K-4** (/mhb/courses/MV-TD-86078-K-4/)	P	-	PL1	2.0	SuSe

- About **[MV-TD-86078-K-4]**: Title: "Development and Design of Chemical Processes"; Presence-Time: 28 h; Self-Study: 32 h

Examination achievement PL1

- Form of examination: **written exam (Klausur) (90-120 Min.)**
- Examination Frequency: each semester
- Examination number: 10684 ("Development and Design of Chemical Processes")

Evaluation of grades

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

Contents

From [MV-TD-86078-K-4] Development and Design of Chemical Processes (/mhb/courses/MV-TD-86078-K-4/)**:**

- Process structure
- Raw materials
- Production network
- Important products / value-added chains
- Economic fundamentals of chemical production (key parameters, sensitivities)
- Incentives for process development
- Unit operations (reaction, separation)
- Stages of process development (synthesis, integration, validation, scale-up)
- Visit of the department of process development at BASF

Competencies / intended learning achievements

From [MV-TD-86078-K-4] Development and Design of Chemical Processes (/mhb/courses/MV-TD-86078-K-4/)**:**

1. Lectures

The students are able to describe and discuss

- basic steps of the development of chemical processes.
- methods applied in the process development.
- economic assessment of processes.
- ways to compare differences between the plan and reality in process design.

2. Exercises:

The students are able to

- mirror the learning outcomes of the lecture to the practice of process development as observed during the visit of BASF.

Literature

From [MV-TD-86078-K-4] Development and Design of Chemical Processes (/mhb/courses/MV-TD-86078-K-4/)**:**

Ullmann's Encyclopedia of Industrial Chemistry, Band 6, Wiley-VCH, Weinheim (2003)

Requirements for attendance (informal)

Basic knowledge of chemistry and physics

Modules:

- [MV-TD-57-M-4] Heat Transfer (M, 5.0 LP) (/mhb/modules/MV-TD-57-M-4/)

Requirements for attendance (formal)

None

References to Module / Module Number [MV-TD-68-M-4]

Course of Study	Section	Choice/Obligation
[MV-82.B10-SG] B.Sc. Energy and Process Engineering (/mhb/FB-MV/cos-528/)	KF1: Verfahrenstechnik	[WP] Compulsory Elective
[MV-88.A29-SG] M.Sc. Biological and Chemical Engineering (/mhb/FB-MV/cos-567/)	Studienschwerpunkt II	[WP] Compulsory Elective

Module-Pool	Name
[MV-ALL-MPOOL-6 (/mhb/modulepools/MV-ALL-MPOOL-6/)]	Wahlpflichtmodule allgemein
[MV-BioVT-MPOOL-6 (/mhb/modulepools/MV-BioVT-MPOOL-6/)]	Wahlpflichtmodule Bioverfahrenstechnik