Curriculum for the Master's degree program in Digital Process Engineering

Admission for new students: every winter semester
Last update: 17.01.2025

Module-ID	Module	Semester 1 WS	2 SS	3 WS	4 SS	Total LP
MV-DPE-2025-MPOOL-6	**Bridge Modules**					**30**
MV-INF-314a-M-1	Data Processing 1	4				4
MV-INF-314b-M-1	Data Processing 2		4			4
MV-LRF-59-M-4	Fundamentals of separation technology		(6)			0
MV-MVT-58-M-4	Mechanical Process Engineering I		(6)			0
MV-TD-57-M-4	Heat Transfer	5				5
MV-LTD-B130-M-4	Energy process and systems engineering	4				4
MV-TD-56-M-4	Thermodynamics of mixtures	(5)				0
MV-CPE-M192-M-7	Computational Physics and Experimental Analysis for Digital Twins	5	(5)			5
MV-LRF-43-M-4	Process Engineering		(6)			0
MV-BioVT-60-M-4	Basic Principles in Bioprocess Engineering			(3)		0
MV-BioVT-61-M-3	Bioreactor- and Bioprocess Engineering I		(3)			0
MV-BioVT-B145a-M-2	Introduction into scientific work	3	(3)			3
MV-MV-380-M-7	German for non-native Speakers - Minimum Level A2*	3	(3)			3
MV-MV-M126-M-7	Excursion (two)	2	(2)			2
MV-MV-375-M-6	DPE - Internship (big), 24 weeks	(30)				0
MV-MV-376-M-6	DPE - Internship (small), 12 weeks	(15)				0
EIT-LRS-432-M-4	Computer aided engineering in control	(4)				0
	Mandatory Modules					**27**
INF-02-07-M-2	Scientific Computing			4		4
INF-80-07-M-2	Practical Data Visualization			4		4
MV-LTD-M232-M-7	Machine Learning in Process Engineering		5			5
MV-LTD-M187-M-7	Data evaluation and design of experiments		4			4
MV-LRF-372-M-7	Project computer science in process engineering		4	2		6
MV-TD-298-M-7	Modeling, simulation and optimization in process engineering			4		4
	Focus Areas					**18-26****
	Focus Area 1 (9-13 LP)	3	6			9
	Focus Area 2 (9-13 LP)		6	3		9
	Electives					**7-15****
MV-DPE-2025-MPOOL-6	Electives (specific, 4-12 LP, catalogue of Focus Areas)			8		8
	Electives (general, 3-11 LP, all courses of RPTU in Kaiserslautern***)			7		7
	Thesis					**30**
MV-MV-216-M-7	Master thesis				30	30
	Colloquium					
Total of Credits		**29**	**29**	**32**	**30**	**120**

*** It is not possible for German native speakers to take the module.**
**** Focus areas and elective modules comprise a total of at least 33 LP!**
***** There is no entitlement for modules that are regularly offered in German to be offered in English for this degree program.**

Focus Area: Bioprocess Engineering		**WS**	**SS**	**WS**
MV-BioVT-378-M-7	Bioprocess Modelling		6	
MV-BioVT-134-M-7	Simulation of Biorefineries			3
MV-BioVT-379-M-7	Lab course Bioprocess Engineering			6

Focus Area: Reaction and Fluid Process Engineering		**WS**	**SS**	**WS**
MV-LRF-B146-M-4	Chemical Process Engineering		5	
MV-LRF-123-M-5	Advanced separation technology			5
MV-SAM-276-M-4	Computational Fluid Dynamics with Open Source Tools			5
MV-MFM-M234-M-7	Micro Process Engineering		4	
MV-MFM-M197-M-7	Physicochemical Hydrodynamics		4	

Focus Area: Thermodynamics		**WS**	**SS**	**WS**
MV-TD-135-M-7	Process Thermodynamics			4
MV-TD-264-M-7	Thermodynamics of Transport Processes			3
MV-TD-107-M-7	Molecular Thermodynamics I			3
MV-TD-M172-M-7	Thermodynamics of electrolyte solutions			3
MV-TD-224-M-7	Computerlab Molecular Simulation		3	

Focus Area: Mechanical Process Engineering		**WS**	**SS**	**WS**
MV-MVT-133-M-7	Multiphase Flow			5
MV-MVT-364-M-7	Green Process Value Chains			3
MV-MVT-229-M-7	Aerosol Technology		3	
MV-MVT-124-M-7	Mechanical Process Engineering II			5
MV-MVT-78-M-4	Laboratory Mechanical Process Engineering I		3	
MV-MVT-211-M-7	Laboratory Mechanical Process Engineering II			3
MV-IVW-381-M-7	Digitally supported Processing Technologies for Polymer-based Lightweight Structures			3