

Programme structure valid from the academic year 2024/2025

programme of study: mechanical engineering
level of qualification: first-cycle
type of education: academic

	Course code		Course title	l	c	lab	p/s	No. of hours	exam	ECTS credits
Semester 1										
O	M#2-S1-ME-101	1	Linear Algebra	15	30			45	1	4
O	M#2-S1-ME-102	2	Calculus	30	30			60	1	5
O	M#2-S1-ME-103	3	Ergonomics and OHS	15				15		1
O	M#2-S1-ME-104	4	Technical Drawing	15			30	45		3
HS/K	M#2-S1-ME-105	5	History of Technology and Inventions	15				15		1
O	M#2-S1-ME-106	6	Technical Physics	15	15	15		45	1	4
O	M#2-S1-ME-107	7	Technical Chemistry	15		15		30		2
O	M#2-S1-ME-108	8	Information Technology			30		30		2
K	M#2-S1-ME-109	9	Fundamentals of Electrical Engineering	30	15			45		3
K	M#2-S1-ME-110	10	Theory of Machines	15				15		1
K	M#2-S1-ME-111	11	Applications of Computer Science	15		15		30		2
HS/O	M#2-S1-ME-112	12	Intellectual Property Protection	15				15		1
K	M#2-S1-ME-113	13	Plastics and Composites	15				15		1
Total number of hours and ECTS credits				210	90	75	30	405	3	30
Semester 2										
K	M#2-S1-ME-201	1	Engineering Mathematics	15	30			45	1	4
K	M#2-S1-ME-202	2	Foreign Language			30		30		2
K	M#2-S1-ME-203	3	Engineering Mechanics I	15	30	15		60	1	5
K	M#2-S1-ME-204	4	Plastics and Composites			30		30		2
K	M#2-S1-ME-205	5	3D Printing and 3D Scanning	15		30		45		3
K	M#2-S1-ME-206	6	Fundamentals of Metrology	15				15		1
KW	M#2-S1-ME-207a	7a	Micro- and Nanotechnology	15		15		30		2
	M#2-S1-ME-207b	7b	Fundamentals of Nanotechnology							
K	M#2-S1-ME-208	8	Fundamentals of Electronics	15		15		30		2
K	M#2-S1-ME-209	9	Material Science I	15		15		30		2

K	M#2-S1-ME-210	10	Engineering Drawing	15			30	45		3
K	M#2-S1-ME-211	11	Fundamentals of Control Engineering	15	15	15		45	1	4
			Total number of hours and ECTS credits	135	75	165	30	405	3	30

Semester 3

HS	M#1-S1-ME-301	1	Intellectual Property Protection	15				15		1
K	M#1-S1-ME-302	2	Foreign Language			30		30		2
K	M#1-S1-ME-303	3	Metrology I	15	15			30		2
K	M#1-S1-ME-304	4	Fundamentals of Computer Science	15		45		60		4
K	M#1-S1-ME-305	5	Strength of Materials	30	30	15		75	1	6
K	M#1-S1-ME-306	6	Engineering Mechanics II	15	15			30	1	3
K	M#1-S1-ME-307	7	Computer-Aided Engineering Drawing	10		20		30		2
K	M#1-S1-ME-308	8	Metal Science II	30		30		60	1	5
K	M#1-S1-ME-309	9	Laser Technology	15		15		30		2
K	M#1-S1-ME-310	10	Fundamentals of Casting			15		15		1
K	M#1-S1-ME-311	11	Fundamentals of Welding			15		15		1
K	M#1-S1-ME-312	12	Fundamentals of Metal Forming			15		15		1
K	M#1-S1-ME-313	13	Physical Education		30			30		0
			Total number of hours and ECTS credits	145	90	200	0	435	3	30

Semester 4

K	M#1-S1-ME-401	1	Foreign Language			30		30		2
K	M#1-S1-ME-402	2	Fundamentals of Machine Design I	30				30		2
K	M#1-S1-ME-403	3	Fundamentals of Machining	30		30		60	1	5
K	M#1-S1-ME-404	4	Manufacturing Engineering	15			15	30		2
K	M#1-S1-ME-405	5	Metrology II	15		30		45	1	4
K	M#1-S1-ME-406	6	Theory of Machinery and Mechanisms	15	15			30		2
K	M#1-S1-ME-407	7	Fundamentals of Control Engineering	15	15	15		45	1	5
K	M#1-S1-ME-408	8	Fluid Mechanics	15	15	15		45		3
S3	M#1-S1-ME-KWW-409	9	Fundamentals of CNC Programming	30		15	30	75		5
K	M#1-S1-ME-412	12	Physical Education		30			30		0
			Courses for a specialism of KWW	30	0	15	30	75	0	5
			Total number of hours and ECTS credits for KWW	165	75	135	45	420	3	30

Semester 5

K	M#1-S1-ME-501	1	Foreign Language			30		30	1	3
K	M#1-S1-ME-502	2	Hydraulic and Pneumatic Power and Control	30	15	15		60	1	4
K	M#1-S1-ME-503	3	Computer-Aided Manufacturing	15		30		45		3
K	M#1-S1-ME-504	4	Fundamentals of Machine Design II	15	15	15	15	60	1	5

K	M#1-S1-ME-505	5	Computer-Aided Design I			30		30		2
S3	M#1-S1-ME-KWW-506	6	Machining	30		30		60	1	5
S3	M#1-S1-ME-KWW-507	7	CNC Machine Tools: Design and Operation	30		15		45		3
S3	M#1-S1-ME-KWW-508	8	Metal Forming	15		15		30		2
S3	M#1-S1-ME-KWW-509	9	Fundamentals of Metal Forming Design	15		30		45		3
			Courses for a specialism of KWW	90	0	90	0	180	1	13
			Total number of hours and ECTS credits for KWW	150	30	210	15	405	4	30

Semester 6

K	M#1-S1-ME-601	1	Fundamentals of Machine Design III	15			30	45	1	4
K	M#1-S1-ME-602	2	Thermodynamics I	15	15	5		35		2
K	M#1-S1-ME-603	3	Internship					0		4
K	M#1-S1-ME-604	4	Pre-Final Project				15	15		1
S3	M#1-S1-ME-KWW-605	5	Metrology for Manufacturing	15	15			30		2
S3	M#1-S1-ME-KWW-606	6	Fundamentals of CAD and KWW	15		15	30	60		4
S3	M#1-S1-ME-KWW-607	7	Cutting Tools	15		15	30	60	1	5
S3	M#1-S1-ME-KWW-608	8	Advanced Manufacturing	15			15	30		2
S3	M#1-S1-ME-KWW-609	9	Metal Forming Machinery	30		30		60		4
S3	M#1-S1-ME-KWW-610	10	Computer-Aided Design for Metal Forming	15			15	30		2
			Courses for a specialism of KWW	105	15	60	90	270	1	19
			Total number of hours and ECTS credits for KWW	135	30	65	135	365	2	30

Semester 7

K	M#1-S1-ME-701	1	Quality Engineering	15			15	30	1	3
HS	M#1-S1-ME-702a	2a	HES II	15				15		1
	M#1-S1-ME-702b	2b	HES II	15				15		1
HS	M#1-S1-ME-703a	3a	HES III	15				15		1
	M#1-S1-ME-703b	3b	HES III	15				15		1
K	M#1-S1-ME-704	4	Fundamentals of Mechatronics	15		15		30		2
K	M#1-S1-ME-705	5	Environmental Management and Ecology	15				15		1
K	M#1-S1-ME-706	6	Thermodynamics II	15		15		30	1	3
K	M#1-S1-ME-707	7	Thesis							15
K	M#1-S1-ME-708	8	Thesis Seminar				30	30		2
K	M#1-S1-ME-709	9	Heat Transfer and Fluid Flow Systems	15	15			30		2
			Total number of hours and ECTS credits	105	15	30	45	195	2	30

S3	Total number of hours and ECTS credits for KWW	1045	405	880	300	2630	20	210
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ECTS credits for electives (a minimum of 63 required)	
Thesis Seminar	2
Thesis	15
Pre-Final Project	1
Electives in the Humanities and Economic and Social Sciences (HES)	5
Programme-specific electives	2
Courses for a specialism of KWW	37
Total number of hours and ECTS credits for KWW	62

Programme-specific electives II							
Micro- and Nanotechnology							
Fundamentals of Nanotechnology	15		15		30		2

Electives in the Humanities and Economic and Social Sciences (HES) II, semester 7							
A. Fundamentals of Business Management	15				15		1
B. Negotiations	15				15		1

Electives in the Humanities and Economic and Social Sciences (HES) III, semester 7							
A. Fundamentals of Business Planning	15				15		1
B. Business Plan Basics	15				15		1