

APPENDIX A to the Addendum for Double Master's Degrees between Chalmers Tekniska Högskola and Universität Stuttgart

Double Master's Degree Scheme

The attached MACROPLAN depicts the 2-year MSc double degree structure in **Mobility Engineering at Chalmers** and in **Fahrzeugtechnik (Automotive Engineering at U Stuttgart)**. It shows the courses in each semester as well as the prerequisites for students wishing to spend their 2nd year at the partner institution.

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Who is where	Year 1				ECTS	Year 2		ECTS	Total ECTS
	Semester 1		Semester 2			Semester 3	Semester 4		
Chalmers Students at Chalmers	Engineering of Automotive systems (7,5)	Vehicle Dynamics (7,5)	Road Vehicle Aerodynamics (7,5)	Vehicle Dynamics advanced (7,5)	60				
	Internal Combustion Engines (7,5)	Vehicle and Traffic Safety (7,5)	Hybrid Vehicles and Control (7,5)	Impact Biomechanics (7,5)					
				or ICE advanced (7,5)					
Chalmers Students at UStutt						Project Work - Studienarbeit (12)			
						Internship (12)			
						Elective "UStutt" ⁶⁾ (2 x 3)	Master's Thesis (30)	60	120
UStutt Students at UStutt	Basic Module ¹⁾ - Spec. 1 (6)		Compulsory Elective Mod. ³⁾ (6)		60				
	Specialisation ²⁾ 1 (18)								
	Basic Module ¹⁾ - Spec. 2 (6)								
	Specialisation ²⁾ 2 (18)								
	Key Qualification ⁴⁾ (3)		Compulsory Mod. Lab ⁵⁾ (3)						
UStutt Students at Chalmers						Compulsory - elective ⁵⁾ (7,5)			
						Compulsory - elective ⁵⁾ (7,5)			
						Automotive Eng. Project (15)	Master's Thesis (30)	60	120

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Appendix

Specifications of University of Stuttgart's Course Modules

¹⁾ Table "Basic Module" -> *choose two modules*

No.	Basic Modules (choose 2 x 6 ECTS)	Lecturer; Institute	Assigned to Specialisation
1	Tractors and Oil Hydraulics	Böttinger; Uni Hohenheim	Agricultural Engineering
2	Electrical Machines I	Parspour; IEW	Electric Power Trains
3	The Railway System: Players, Processes, Regulations	Salander; IMA, SFT	Railway Engineering
4	Industrial Management	Bauernhansl; IFF	Intelligent Production
5	Automotive Industrial Design Engineering	Maier; IKTD	Automotive Industrial Design Engineering
6	Fundamentals in Vehicle Aerodynamics	Wagner; IFS	Automotive Engineering
7	Fundamentals in Vehicle Acoustics	Wagner; IFS	Automotive Engineering
8	Fundamentals of Vehicle Propulsions	Casal Kulzer; IFS	Automotive Powertrain Systems
9	Fundamentals in Motor Vehicles	Wagner; IFS	Automotive Engineering
10	Fundamentals in Metal Forming Technology	Liewald; IFU	Fluid Flow and Combustion
11	Fundamentals of railway vehicle technology and operation	König; IMA, SFT	Railway Engineering
12	Combustion Fundamentals I + II	Kronenburg; ITV	Fluid Flow and Combustion
13	Interior Design Engineering	Remlinger; IKTD	Automotive Industrial Design Engineering
14	Concepts of Automatic Control	Allgöwer/Müller; IST	Feedback Control Systems
15	Motor Vehicle Mechatronics I + II	Reuss; IFS	Automotive Mechatronics
16	Machine Dynamics	Eberhard; ITM	Applied Dynamics
17	Methodical Product Development	Kreimeyer; IKTD	Design Technology
18	Modeling, Simulation and Optimization Processes	Resch; IHR	Modeling and Simulation Methods
19	Feedback Control Systems and Control Engineering	Allgöwer/Ebenbauer; Sawodny; Verl	Feedback Control Systems
20	Railway Vehicle Dynamics	König; IMA, SFT	Railway Engineering
21	Technical Fluid Dynamics	Riedelbauch; IHS	Fluid Flow and Combustion
22	Combustion Phenomena in Vehicle Propulsion Systems	Schmidt; IFS	Automotive Powertrain Systems
23	Traffic Engineering and Traffic Control	Friedrich, Ressel; ISV	Road Science
24	Transport Planning and Traffic Engineering	Friedrich, Ressel; ISV	Road Science
25	Dies for Sheet Metal Forming	Baur; IFU	Body Construction

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2) Table "Specialisations" -> *choose two specialisations*

No.	Catalogue Specialisation 1 (FT)	Institute	Person in Charge
1	Automotive Engineering	IFS	Prof. Wagner
2	Automotive Mechatronics	IFS	Prof. Reuss
3	Automotive Powertrain Systems	IFS	Prof. Casal Kulzer
4	Automated and Connected Driving	IFS	Prof. Reuss, Weyrich

3) Table "Compulsory Elective Module" -> *choose one module (to be continued on next page)*

No.	Compulsory Elective Modules (choose 1 x 6 ECTS)	Lecturer; Institute
1	Assembly and Packaging Technology I - Sensor and Systems Assembly	Zimmermann/Vieten; IFM
2	Endurance Strength in Vehicle Engineering	Weihe; IMWF
3	Biological and chemical methods for the industrial use of biomass	Tovar/Schließmann; IGVP
4	Fuel Cell Engineering - Basic Principles, Technology and Systems	A. Friedrich; DLR
5	Design and manufacturing of micro- and nanoelectronic systems	Burghartz; IMS
6	Electrical Drives	Roth-Stielow; ILEA
7	Energy Engineering and Environmental Engineering	Scheffknecht; IFT
8	Strength of Materials I	Weihe; IMWF
9	Interfacial Process Engineering and Nanotechnology - Chemistry and Physics of Interfaces and Nanomaterials	Hirth; IGB
10	Basic Principles of Heating, Ventilation and Air Conditioning Systems	Stergiaropoulos; IGTE
11	Fundamentals of Ceramics and Composite Materials	Gadow; IFKB
12	Basics of Thermal Turbomachinery	Vogt; ITSM
13	Fundamentals of Heat Transfer	Heidemann; IGTE
14	Fundamentals of Plastics Engineering	Bonten; IKT
15	Logistics in the automotive product process	Schulz; IFT
16	Lightweight Construction	Weihe/Seidenfuß; IMWF
17	Lightweight Engineering	Berendes, IKTD
18	Mechanics of Nonlinear Continua	Eugster; INM
19	Finite Element Method in Statics and Dynamics	A. Schmidt; INM
20	Materials Simulation	Schmauder; IMWF
21	Non-destructive Evaluation	Kreutzbruck; IKT
22	Materials Engineering and Simulation	Schmauder; IMWF

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4) Table "Key Qualifications" [3 ECTS]

No.		Modulname deutsch
1	901	Kompetenzbereich 1
2	902	Kompetenzbereich 2
3	903	Kompetenzbereich 3
4	904	Kompetenzbereich 4
5	905	Kompetenzbereich 5

5) Table "Compulsory Mod. Lab" [3 ECTS]

No.	Modul-No.	Module [3 ECTS]
1	67390	Practical Lab Exercises

6) Table "Elective UStutt" -> choose two modules

No.	Elective "UStutt" Modules (choose two modules)
1	Automobiltechnisches Fachpraktikum [13290]
2	Academic Writing in English for Master's and PhD Students (C1) [932820]
3	Deutsch als Fremdsprache: Survival German A2 [933860]
4	Deutsch als Fremdsprache: Survival German B1 [933870]
5	Effective Communication in the Workplace (C1) [930040]
6	Intercultural Communication Skills (C1) [932390]
7	Writing Center: Academic Writing à la carte [933710]
8	Writing Skills for the Workplace (C1) [930010]

Specifications of Chalmers University's Course Modules

5) Table "Compulsory - elective" -> choose two modules

No.	Compulsory - elective (choose two modules)
1	Active Safety [TME192]
2	Vehicle and Traffic Safety [TME202]

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3	Powertrain Mechanics [<i>TME170</i>]
4	Sustainable Transportation [<i>TEK465</i>]
5	Biorefinery [<i>KBT145</i>]
6	Computational Fluid Dynamics [<i>MTF072</i>]