Adaptation Phase – Semester 1

(Technical courses – at least 25 CP)

Description:

Module I – at least 12 CP: Microstructure, nanostructure, materials physics, crystal structures, structural, mechanical and functional, properties

Module II – at least 5 CP: Diffraction, microscopy, spectroscopy, materials testing, micro/nano/atomic scale

Module III – at least 5 CP: Materials selection, deposition techniques, materials for special applications, chemical engineering, processing technologies

Module	Saarland University - UdS				
	Course	Responsible	Code	E / M	CP
I. Structure & Properties	Microstructure Development	Busch		E	3
	Continuum Mechanics	Diebels	KonM	E	4
	Intermetallic Compounds	Busch	IPhas	E	3
	Experimental Mechanics	Diebels	ExMech	E	4
	Computer Simulation in Material Physics	Müser		E	8
	Fracture Mechanics	Marx	Burch	E	4
	Polymer Materials 3	Lienkamp		E	3
II. Materials Characterization	3D Analysis of Micro and Nanostructures - Basics	Mücklich	3DMN1	E	3
	Methodology 2: Basics of Microscopy and Spectroscopy	Motz	TeG	E	5
	Methodology 4: High Resolution Microscopy II (TEM, SPM)	Marx	HMV2	E	3
	Diffraction Methods	Mücklich	BEUG	E	5
	Physical Measurement Technologies in Materials Characterization	Fischer		E	4
III. Materials Engineering & Processing Technologies	Machining Technologies	Bähre	Spanf	E	3
	Surface Engineering	Busch	Otech	E	3
	Nonferrous Metals	Germain	NEM	E	3
	Lightweight Systems 1	Herrmann		E	3
	Additive Manufacturing of Metals	Bähre		E	3

Module	Polytechnical University of Catalonia - UPC				
	Course	Responsible	Code	E / M	CP
I. Structure & Properties	Physical Metallurgy	Prado	CEM01	M	5
	Physical Properties of Materials	Jiménez	CEM04	M	5
	Mechanical Behaviour of Materials	Alcala	24798	M	5
II. Materials Characterization	Microstructural Characterisation of Materials	Manero	CEM05	M	5
III. Materials Engineering & Processing Technologies	Structure and Properties of Polymers		295em112	M	6

Module	Luleå University of Technology - LTU				
	Course	Responsible	Code	E / M	CP
I. Structure & Properties	Deformation and Fracture	Akthar	T7001T	M	7.5
	Material Science & Engineering I	Akerfeldt	T0004T	M	7.5
II. Materials Characterization	Advanced Materials Characterisation Techniques (Course given during the second semester at LTU)	Akthar	T7003T	M	7.5
III. Materials Engineering & Processing Technologies	Materials Technology and Materials Selection	Fernberg	T0003T	M	7.5

Module	University of Lorraine - UL				
	Course	Responsible	Code	E / M	CP
I. Structure & Properties	Properties and Selection of Materials (Mechanics of Materials I, Physical Properties of Materials, Materials Selection)	Ayadi, Czerwiec, Bruyère		M	9
	Physics of Polymers (Physics of Polymers, Polymers Lab)	Royaud		M	6
II. Materials Characterization	Crystal Structures and Defects	Redjaïmia		M	5
III. Materials Engineering & Processing Technologies	Chemical Engineering (Chemical Reaction Engineering, Fluid and Transport Mechanic)	Simmonot, Acem		M	6

Module	University of Padova - UNIPD				
	Course	Responsible	Code	E / M	CP
I. Structure & Properties	Nanostructured Materials – Part I (*)	Martucci	INP7080521	E	4
	Solid state physics	Gasparotto	INM0018236	M	9
II. Materials Characterization	Nanostructured Materials – Part II (*)	Martucci	INP7080521	E	5
III. Materials Engineering & Processing Technologies	Technology of metals	Zambon	INP9086801	M	9

(*) Nanostructured materials 9 ECTS: 5 ECTS for Module II and 4 ECTS for Module I

Module	Montanuniversität Leoben - MUL				
	Course	Responsible	Code	E / M	CP
I. Structure & Properties	Materials Selection	Tkadletz	SE 425.136	E	2.5
	Materials Science - Seminar	Schalk, Hofer	SE 440.050	E	2.5
	Physical Metallurgy and Application of Steels	Schnitzer, Mayerhofer	VO 440.002	E	3
	Materials Physics II	Eckert, Spieckermann	VO 430.046	E	3
	Semiconductor Materials	Teichert, Matkovic	VO 460.094	E	3
	Structural and Functional Ceramics I	Bermejo	VO 410.002	E	3.75
	Computational Interface Design	Romaner	VO 420.XXX	E	1.5
	Structural Principles of Biological Materials	Paris	VO 460.060	E	2.25
	Modelling of Materials on the Atomic Level	Holec, Hartmann	VO 420.020	E	2
	Exercises to Materials Modelling at Atomic Level	Holec, Hartmann	VO 420.120	E	2
	Cellular Solids and Composite Materials	Eckert, Keckes	VO 430.038	E	2
	Polymer Nanotechnology	Gonzalez-G., Holzer, Gooneie	VO 350.100	E	3
	Modelling and Simulation of Microstructural Processes	Stockinger	VO 420.047	E	1.5
	Fracture Mechanics of Solids	Hohenwarter	VO 430.026	E	2
	Functional Materials	Mitterer	VO 425.000	E	3
	Theory of the Mechanical Properties of Solids	Kiener	VO 430.031	E	2
II. Materials Characterization	In-situ and in-operando Characterization Techniques in Material Science	Kiener, Maier-Kiener	VO 430.013	E	2
	Structure and Scattering Methods	Keckes	VO 430.020	E	3
	Nanocrystalline Materials	Daniel	VO 425.031	E	1
	Structural and Functional Ceramics Lab	Bermejo, Harrer, Kraleva, Lube	UE 410.013	E	2
	Mechanical Behaviour of Multilayer Ceramic Components and Microelectronic Parts		VO	E	2
	Advanced Transmission Electron Microscopy for Materials Research	Zhang	VO 430.041	E	1
	Mechanics in Small Dimensions	Kiener, Eckert	VO 430.002	E	2
	Exercises to in-situ and in-operando Characterization Techniques in Material Science	Kiener, Maier-Kiener	UE 430.014	E	1
	Polymer Properties and Component Behavior	Pinter, Primetzhofer	VO 210.020	E	3
III. Materials Engineering & Processing Technologies	Material Selection, Qualification and Failure Analysis in Polymer Engineering	Pilz, Pinter	SE 210.023	E	4.5
	Introduction to Surface and Thin Film Processes	Teichert	VO 460.111	E	2
	Composites I	Schuecker	VO 250.034	E	3
	Metal Forming	Stockinger	VO 560.015	E	4.5
	Additive Manufacturing	Eckert	VO 430.001	E	2
	Materials for Additive Manufacturing	Mayer	VO 420.130	E	2
	Additive Manufacturing with Polymers	Godec, Holzer, Gonzales-Gutierres	VO 350.650	E	3

Track 1: Advanced Metallic Materials

(Technical Courses – at Least 25 CP in each Semester)

Module	Saarland University - UdS				
	Course	Responsible	Code	E / M	CP
Semester 2	Steel II	Busch	Stahl	E	3
	Fundamentals of Steel Science	Kalla		E	3
	Special Steel Science	Maurer		E	3
	Kinetics of amorphous systems	Busch	Kin	E	3
	Powder Metallurgy	Busch	PuMet	E	3
	Amorphous Metals	Busch	AmoMet	E	3
	Precision Machining Technologies	Bähre	FBTec	E	3
	3D Analysis of Micro and Nanostructures - Advanced Methods	Mücklich	3DMN2	E	3
	Methodology 7: Nano- and micromechanical testing methods	Motz	NMMMM	E	3
	Material Modelling	Diebels	MaMo	E	4
	Methodology 3: High Resolution Microscopy I (SEM, EDS)	Marx	HMV1	E	4
	Laser Treatment of Materials - Applications	Mücklich	Las2	E	3
	Physical Acoustics 1	Rabe		E	4
	Functional Materials II	Mücklich	FuWV	E	4
	Interfacial and Microstructure Physics - Materials Physics 2	Motz		E	5
	Methodology 6: Microstructure mechanics and damage mechanisms	Marx		E	3
	Methodology 9: Applications of Atomic Force Microscopy	Motz		E	3
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2
Semester 3	Nonferrous Metals	Germain	NEM	E	3
	Intermetallic Compounds	Busch	IPhas	E	3
	Lightweight Systems 1	Herrmann		E	3
	Machining Technologies	Bähre	Spanf	E	3
	Surface Engineering	Busch	OTech	E	3
	Heavy Plate Production and Processing	Kalla		E	3
	Methodology 4: High Resolution Microscopy II (TEM, SPM)	Marx	HMV2	E	3
	3D Analysis of Micro and Nanostructures - Basics	Mücklich	3DMN1	E	3
	Corrosion and High Temperature Behavior	Motz	KorHT	E	3
	Laboratory Materials Science	Marx and all Professors	PrMW	E	4
	Fracture Mechanics	Marx	Bruch	E	4
	Physical Acoustics 2	Rabe		E	4
	Diffraction Methods	Mücklich	BEUG	E	5
	Methodology 2: Basics of Microscopy and Spectroscopy	Motz	TeG	E	5
	Laser Treatment of Materials - Interaction with Matter	Mücklich	Las1	E	3
	Additive Manufacturing of Metals	Bähre		E	3
	Computer Simulation in Material Physics	Müser		E	8
	Physical Measurement Technologies in Materials Characterization	Fischer		E	4
	Welding	Kalla		E	3
	Elements of Data Science and Artificial Inteligence	Schiele		E	9

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	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2

Module	Polytechnical University of Catalonia - UPC				
	Course	Responsible	Code	E / M	CP
Semester 2	Modern Manufacture of Metallic Materials		295EM021	M	6
	Structural Integrity and Failure Analysis		295EM022	M	6
	Materials Joining Technologies		295EM126	E	6
	Biomedical Materials		295EM122	E	6
	Materials for Energy and Transport Applications		295EM125	E	6
	Design of equipment coating technologies		295EQ242	E	6
Semester 3	Experimentation in Materials Science and Engieering		295EM031	M	6
	Advanced Characterization of Materials		295EM011	E	6
	Nanostructured Materials		295EM114	E	6
	Advanced Surface Engineering		295EM115	E	6
	Functional Materials		295EM123	E	6
	Sustainable Materials		295II133	E	6

Module	Luleå University of Technology - LTU				
	Course	Responsible	Code	E / M	CP
Semester 2	Phase Transformations (offered in semester 1)	Akthar	T7008T	M	7.5
	Select 2 of the following curses:				
	Materials Modelling	Joffe	T7002T	E	7.5
	Surface Engineering	Vuorinen	T7004T	E	7.5
	Nanomaterials	NN	T7006T	E	7.5
	Materials Selection and Ecodesign	Vuorinen	T0007T	E	7.5
	Metal working	Åkerfeldt	T7028T	E	7.5
Semester 3	Advanced Metallic Materials - Project Work	All Professors	T0009T	M	30

Module	University of Lorraine - UL				
	Course	Responsible	Code	E / M	CP
Semester 2	Materials Mechanics II: Plasticity	Ayadi		M	5
	Materials Characterization	Zollinger		M	4
	Conferences and Industrial Visits	Zollinger		M	1
	Bibliographic Project	Horwat		M	6
	Solidification and phase transformation	Horwat, Zollinger		M	10
Semester 3	Ferrous and Non-Ferrous Alloys	Denis		M	6
	Stress-Phase Transformations	Denis		M	4
	Microstructural control	Mathieu		M	6
	Development processes (Extractive Metallurgy, Processing Routes)	Patisson		M	3

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The following study plan is tentative: changes may apply each semester (last update: 03/11/2025)

Module	University of Padova - UNIPD				
	Course	Responsible	Code	E / M	CP
Semester 2	Materials Structural Integrity		INQ2100900	M	9
	Iron Making and Steel Making		INQ1099060	M	9
	Corrosion and Protection of Materials		INQ1099079	M	6
	Computational Materials Science		INP8083385	E	6
	Photovoltaic Science and Technology		INP9087853	E	6
Semester 3	Electromagnetic Processing of Materials		INQ1099020	M	6
	Manufacturing Technology		INQ0092839	M	6
	Materials Selection and Design		INQ1099021	M	6
	Biopolymers Engineering		INQ1099019	E	6
	Quality in Manufacturing Engineering		INQ1099039	E	6
	Introduction to the Finite Element Method		INQ2100903	E	6
	Nanofabrication		INQ1098075	E	6
	Nanostructured Materials		INP9087849	E	6
	Designing with polymers		INQ2100902	E	6

Module	Montanuniversität Leoben - MUL				
	Course	Responsible	Code	E / M	CP
Semester 2	Solid State Physics	Holec	VO 420.003	M	3
	Elasticity and Dislocations in Materials Science	Holec, Romaner	VO 420.069	M	1
	Materials Physics III	Kiener, Bachmaier	VO 430.047	M	2
	Solidification Processes and Phase Transformations	Eckert	VO 430.027	M	2
	Phase Transformations and Precipitates in Metals and their Characterization	Rashkova	VO 420.034	M	2
	Introduction into Synchrotron Radiation	Paris	VO 460.461	E	1
	Synchrotron Radiation in Materials Science	Lechner, Paris	VO 460.462	E	3
	Theoretical and Practical Aspects of Nanoindentation	Daniel	VO 425.067	E	1
	Transmission Electron Microscopy of Solids	Zhang	VO 430.041	E	1
	Atom Probe Tomography in Materials Science	Mendez	IV 420.170	E	2
	Introduction to Surface and Interface Physics	Spieckermann	VO 430.039	E	2
	Data-Driven Materials Science	Romaner	VO 420.225	E	1.5
	Metastable Materials	Eckert, Spieckermann	VO 430.053	E	2
	Non-semiconductor Materials in Microelectronics	Daniel	VO 425.060	E	1.5
	Magnetic Properties of Nanomaterials	Lechner	VO 460.105	E	2
Semester 3	Physical Metallurgy and Application of Steels	Schnitzer, Mayerhofer	VO 440.002	M	3
	Theory of the Mechanical Properties of Solids	Kiener	VO 430.031	M	2
	Fracture Mechanics of Solids	Hohenwarter	VO 430.026	M	2
	Nanocrystalline Materials	Daniel	VO 425.031	M	1
	Mechanics in Small Dimensions	Kiener, Eckert	VO 430.002	M	2
	Metal Forming	Stockinger	VO 560.015	E	4.5
	Modelling of Materials on the Atomic Level	Holec, Hartmann	VO 420.020	E	2
	Exercises to Materials Modelling at Atomic Scale	Holec, Hartmann	VO 420.120	E	2
	Computational Interface Design	Romaner	VO 420.220	E	1.5

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	In-situ and in-operando Characterization Techniques in Material Science	Kiener, Maier-Kiener	VO 430.013	E	2
	Exercises to in-situ and in-operando Characterization Techniques in Material Science	Kiener, Maier-Kiener	UE 430.014	E	1
	Materials Physics II	Eckert, Spieckermann	VO 430.046	E	3
	Functional Materials	Mitterer	VO 425.000	E	3
	Materials for Additive Manufacturing	Mayer	VO 420.130	E	2
	Introduction to Surface and Thin Film Processes	Teichert	VO 460.111	E	2
	Introduction to Vacuum Technology	Mitterer	VO 425.050	E	1
	Materials Science - Seminar	Schalk, Hofer	SE 440.050	E	2.5
	Materials Selection	Tkadletz	SE 425.136	E	2.5

Track 2: Polymers and Composites

(Technical Courses – at Least 25 CP in each Semester)

Module	Saarland University - UdS				
	Course	Responsible	Code	E / M	CP
Semester 2	Lightweight Systems 2	Herrmann		E	3
	3D Analysis of Micro and Nanostructures - Advanced Methods	Mücklich	3DMN2	E	3
	Numerical Mechanics	Diebels	NuMech	E	4
	Physical Acoustics 1	Rabe		E	4
	Material Modelling	Diebels	MaMo	E	4
	Empirical and Statistical Modelling	Bähre	Es Mod	E	4
	Finite Elements in Continuum Mechanics	Diebels	FEMM	E	4
	Polymerwekstoffe 4	Lienkamp		E	?
	Smart Materials	Gallei	MC06	E	3
	NanoBioMaterials 2	Gonzalez-García, Kraus	NBM-2	E	3
	Methodology 9: Applications of Atomic Force Microscopy	Motz		E	3
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2
Semester 3	Synthesis of Polymers	Gallei	MC01	E	3
	Polymer Materials 3	Lienkamp		E	3
	Functional Coatings	Kraus	GuKBe	E	3
	Methodology 4: High Resolution Microscopy II (TEM, SPM)	Marx	HMV2	E	3
	Lightweight Systems 1	Herrmann		E	3
	3D Analysis of Micro and Nanostructures - Basics	Mücklich	3DMN1	E	3
	NanoBioMaterials 1	Gonzalez-García, Kraus	NBM-1	E	3
	Laboratory NanoBioMaterials	Gonzalez-García, Kraus	NBM-P	E	4
	Biomedical Polymers	Del Campo	Biomed	E	3
	Corrosion and High Temperature Behaviour	Motz	KorHT	E	3
	Experimental Mechanics	Diebels	ExMech	E	4
	Continuum Mechanics	Diebels	KonM	E	4
	Physical Acoustics 2	Rabe		E	4
	Computer Simulation in Material Physics	Müser		E	8
	Technology of Polymers and Composites	Becker-Willinger		E	1,5
	Physical Measurement Technologies in Materials Characterization	Fischer		E	4
	Elements of Data Science and Artificial Inteligence	Schiele		E	9
	Laboratory Materials Science	Marx and all Professors	PrMW	E	4
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2

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Module	Polytechnical University of Catalonia - UPC				
	Course	Responsible	Code	E / M	CP
Semester 2	Composite Technology		295EM121	M	6
	New Challenges in Additivation and Degradation of Plastic Materials		295EM125	M	6
	Structural Integrity and Failure Analysis		295EM022	E	6
	Materials for Energy and Transport Applications		295EM125	E	6
	Materials Joining Technologies		295EM126	E	6
	Experimentation and Instrumentation		295EQ221	E	6
	Polymer Transformation Processes		295EQ222	E	6
	Polymer Physics		295EQ022	E	6
	Design of equipment coating technologies		295EQ242	E	6
Semester 3	Advances in the processing of polymeric materials		295EM032	M	6
	Experimentation in Materials Science and Engineering		295EM031	E	6
	Sustainable Materials		295II133	E	6
	Chemistry of polymerizations		295EQ231	E	6
	Biopolymers and bioplastics		295EQ232	E	6
	Biotech processes and polymer Industry		295EQ011	E	6

Module	Luleå University of Technology - LTU				
	Course	Responsible	Code	E / M	CP
Semester 2	Composite Materials	Joffe	T7012T	M	7.5
	Select 1 of the following curses:				
	Phase Transformations (offered in semester 1)	Akthar	T7008T	E	7.5
	Laser Material Processing (offered in semester 1)	Kaplan	T0018T	E	7.5
	Materials Mechanics (offered in semester 1)	Edberg	T7016T	E	7.5
	Select 1 of the following curses:				
	Aerospace Materials	Fernberg	T7005T	E	7.5
	Composites Manufacturing and Lightweight design	Fernberg	T7029T	E	7.5
Semester 3	Polymers and composites - Project Work	All Professors	T0009T	M	30

Module	University of Lorraine - UL				
	Course	Responsible	Code	E / M	CP
Semester 2	Materials Mechanics II: Plasticity	Ayadi		M	5
	Materials Characterization	Zollinger		M	4
	Conferences and Industrial Visits	Zollinger		M	1
	Bibliographic Project	Horwat		M	6
	Chemistry of Organic Materials (Macromolecular Chemistry, Polymers Lab II)	Six		M	10
Semester 3	Manufacturing of Polymeric Materials	Hu, Jonquières		M	6
	Functional Polymeric Materials	Six		M	4
	Natural and Biodegradable Materials	Jonquières		M	4
	Polymeric Matrix Composites	Ayadi		M	5
	Bibliographic Project	Horwat		M	7

Module	University of Padova - UNIPD				
	Course	Responsible	Code	E / M	CP
Semester 2	Materials Structural Integrity		INQ2100900	M	9
	Computational Materials Science		INP8083385	M	6
	Glass science and technology		INQ1099059	M	6
	Photovoltaic Science and Technology		INP9087853	E	6
	Corrosion and Protection of Materials		INQ1099079	E	6

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Semester 3	Composite Materials	INP9086686	M	9
	Polymer Processing and Recycling	INQ1097605	M	6
	Biopolymers Engineering	INQ1099019	M	6
	Quality in Manufacturing Engineering	INQ1099039	E	6
	Electromagnetic Processing of Materials	INQ1099020	E	6
	Introduction to the Finite Element Method	INQ2100903	E	6
	Nanofabrication	INQ1098075	E	6
	Nanostructured Materials	INP9087849	E	6
	Designing with polymers	INQ2100902	E	6

Module	University of Leoben - MUL				
	Course	Responsible	Code	E / M	CP
Semester 2	Testing of composites	Pinter, Wolfahrt	SE 210.035	M	2.5
	Recycling Technology of Polymers	Feuchter, Holzer, Jenull, Lehner, Pomberger	VO 350.080	M	3
	Recycling Technology of Polymers – Lab Course		UE	M	2
	Machines and Tools for Processing of Composites	Schledjewski	VO 270.012	M	2.5
	Ageing and lifetime modelling of polymers	Oreski	SE 210.036	E	3
	Technical Biopolymers	Resch-Fauster	SE 210.026	E	3
	Thermoplastic Composite Materials FRPC	Schledjewski	VO 270.008	E	2.5
	Polymers in electronic and optical applications	Kern	VO 231.003	E	3
	Physic of Fullerenes, Graphene and Carbon Nanotubes	Teichert	VO 460.113	E	2
	Material Modelling of Polymer and Composite Materials	Frankl, Pletz, Tauscher	IV 250.017	E	3
	Polymer Photochemistry	Kern	VO 231.002	E	3
	Case study in processing of composites	Fauster, Schledjewski	UE 270.010	E	7.5
	Machining and Joining of composites		VO	E	2.5
	FEM Project	Pletz, Schuecker, Tauscher	UE 250.052	E	6
	Data-Driven Materials Science	Romaner	VO 420.225	E	1.5
	Composites II	Schuecker	VO 250.038	E	3
	Topology Optiminization	Brait, Lang, Neunteufl	IV 250.018	E	2.5
	Special Techniques in Polymer Processing	Holzer	VO 350.300	E	3
	Scanning Probe Techniques for the Characterization of Solid Surfaces	Teichert	VO 460.103	E	2
	Powder Injection Moulding (PIM)	Kukla	VO 290.001	E	1.5
Semester 3	Material Selection, Qualification and Failure Analysis in Polymer Engineering	Pilz, Pinter	SE 210.023	M	4.5
	Thermoset Based Composite Materials	Schledjewski	SE 270.017	M	2.5
	Additive Manufacturing with Polymers	Godec, Gonzalez-G. Holzer	VO 350.650	M	3
	Ceramic Composites and Laminates	Lube	VO 410.006	E	2
	Polymer Nanotechnology	Gonzalez-Gutierrez, Gooneie, Holzer	VO 350.100	E	3
	Laboratory course in fracture mechanics of polymers and composites	Arbeiter / Pinter, Gosch, Wiener	UE 210.025	E	2
	Cellular Solids and Composite Materials	Eckert, Keckes	VO 430.038	E	2
	Polymer Properties and Component Behavior	Pinter, Primetzhofer	VO 210.020	E	3

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	Chemistry of Functional Polymers with Switchable Material Properties	Schlögl	VO 231.069	E	3
	Advanced Tooling and Troubleshooting for Injection Molding	Berger-Weber, Friesenbichler, Kurzbauer	VO 290.018	E	3
	Case study in processing of composites	Fauster, Schledjewski	UE 270.010	E	7.5
	Injection Molding Simulation	Lucyshyn	SE 350.200	E	3
	Modeling and Simulation of Polymer Processing with OpenFOAM	Gooneie, Holzer	VO 350.401	E	3

Track 3: Smart Surfaces and Functional Materials

(Technical Courses – at Least 25 CP in each Semester)

Module	Saarland University - UdS				
	Course	Responsible	Code	E / M	CP
Semester 2	High-Performance Ceramics	Falk	HLKer	E	3
	Precision Machining Technologies	Bähre	FBTec	E	3
	NanoBioMaterials 2	Gonzalez-García, Kraus	NBM-2	E	3
	Finite Elements in Continuum Mechanics	Diebels	FEMM	E	4
	Functional Materials II	Mücklich	FuWV	E	4
	Numerical Mechanics	Diebels	NuMech	E	4
	Methodology 3: High Resolution Microscopy I (SEM, EDS)	Marx	HMV1	E	4
	Laser Treatment of Materials - Applications	Mücklich	Las2	E	3
	Material Modelling	Diebels	MaMo	E	4
	Tribology in manufacturing processes	Bähre, Fang		E	3
	Methodology 9: Applications of Atomic Force Microscopy	Motz		E	3
	Printing of Functional Materials	Gonzalez-García		E	3
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2
Semester 3	Intermetallic Compounds	Busch	IPhas	E	3
	Surface Engineering	Busch	OTech	E	3
	Microstructure Development	Busch		E	3
	Nonferrous Metals	Germain	NEM	E	3
	Laser Treatment of Materials - Interaction with Matter	Mücklich	Las1	E	3
	3D Analysis of Micro and Nanostructures - Basics	Mücklich	3DMN1	E	3
	Functional Coatings	Kraus	GuKBe	E	3
	NanoBioMaterials 1	Gonzalez-García, Kraus	NBM-1	E	3
	Methodology 4: High Resolution Microscopy II (TEM, SPM)	Marx	HMV2	E	3
	Computer Simulation in Material Physics	Müser		E	8
	Corrosion and High Temperature Behavior	Motz	KorHT	E	3
	Physical Measurement Technologies in Materials Characterization	Fischer		E	4
	Actuation and Sensing in intelligent Material systems	Motzki		E	4
	Elements of Data Science and Artificial Inteligence	Schiele		E	9
	Laboratory Materials Science	Marx and all Professors	PrMW	E	4
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2

Module	Polytechnical University of Catalonia - UPC				
	Course	Responsible	Code	E / M	CP
Semester 2	Not Available				
Semester 3	Not Available				

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Module	Luleå University of Technology - LTU				
	Course	Responsible	Code	E / M	CP
Semester 2	Surface Engineering	Vuorinen	T7004T	M	7.5
	Select 1 of the following curses:				
	Phase Transformations (offered in semester 1)	Akthar	T7008T	E	7.5
	Materials Mechanics (offered in semester 1)	Edberg	T7016T	E	7.5
	Select 1 of the following curses:				
	Nanostructured Materials and Nanotechnology	NN	T7006T	E	7.5
	Materials Modeling	Joffe	T7002T	E	7.5
	Metal Working	Åkerfeldt	T7028T	E	7.5
	Material Selection and Ecodesign	Vuorinen	T0007T	E	7.5
Semester 3	Smart Surfaces and Functional Materials - Project Work	All Professors	T0009T	M	30

Module	University of Lorraine - UL				
	Course	Responsible	Code	E / M	CP
Semester 2	Materials Mechanics II: Plasticity	Ayadi		M	5
	Materials Characterization	Zollinger		M	4
	Conferences and Industrial Visits	Zollinger		M	1
	Bibliographic Project	Horwat		M	6
	Solidification and phase transformation	Horwat, Zollinger		M	10
Semester 3	Surface Treatments	Horwat, Capon		M	6
	Materials and Surface Characterization	Horwat		M	5
	Formation of Microstructures	Denis		M	3
	Corrosion protection	Mathieu		M	5
	Bibliographic Project	Horwat		M	7

Module	University of Padova - UNIPD				
	Course	Responsible	Code	E / M	CP
Semester 2	Computational Materials Science		INP8083385	M	6
	Glass science and technology		INQ1099059	M	6
	Photovoltaic Science and Technology		INP9087853	M	6
	Corrosion and Protection of Materials		INQ1099079	M	6
Semester 3	Biopolymers Engineering		INQ1099019	M	6
	Materials Selection and Design		INQ1099021	M	6
	Particle Technology for the Food and Pharmaceutical Industries		INQ2100464	M	6
	Quality in Manufacturing Engineering		INQ1099039	E	6
	Electromagnetic Processing of Materials		INQ1099020	E	6
	Introduction to the Finite Element Method		INQ2100903	E	6
	Nanofabrication		INQ1098075	E	6
	Nanostructured Materials		INP9087849	E	6
	Designing with polymers		INQ2100902	E	6

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The following study plan is tentative: changes may apply each semester (last update: 03/11/2025)

Module	Montanuniversität Leoben - MUL				
	Course	Responsible	Code	E / M	CP
Semester 2	Materials Physics III	Kiener, Bachmaier	VO 430.047	M	2
	Introduction to Surface and Interface Physics	Spieckermann	VO 430.039	M	2
	Scanning Probe Techniques for the Characterization of Solid Surfaces	Teichert	VO 460.103	M	2
	Electroceramics for Functional Components	Supancic	VO 410.025	M	2
	Metastable Materials	Eckert, Spieckermann	VO 430.053	M	2
	Solid State Physics	Holec	VO 420.003	E	3
	Elasticity and Dislocations in Materials Science	Holec, Romaner	VO 420.069	E	1
	Electroceramics for Functional Components Lab	Kreith	UE 410.026	E	1
	Data-Driven Materials Science	Romaner	VO 420.225	E	1.5
	Introduction into Synchrotron Radiation	Paris	VO 460.461	E	1
	Synchrotron Radiation in Materials Science	Lechner / Paris	VO 460.462	E	3
	Transmission Electron Microscopy of Solids	Zhang	VO 430.041	E	1
	Theoretical and Practical Aspects of Nanoindentation	Daniel	VO 425.067	E	1
	Mechanical Testing of Ceramics	Lube	VO 410.027	E	3
	Mechanical Testing of Ceramics Lab	Lube	UE 410.028	E	1
	Non-semiconductor Materials in Microelectronics	Daniel	VO 425.060	E	1.5
	Structural and Functional Ceramics II	Bermejo	VO 410.012	E	3.75
	Finite Element Modelling of Ceramic Systems	Supancic	VO 410.005	E	2
	Physic of Fullerenes, Graphene and Carbon Nanotubes	Teichert	VO 460.113	E	3
	Magnetic Properties of Nanomaterials	Lechner	VO 460.105	E	2
	Electronic and Mechanical Properties of Heterostructure Devices	Kasper	VO 460.102	E	2
	Atom Probe Tomography in Materials Science	Mendez	IV 420.170	E	2
Semester 3	Materials physics II	Eckert, Spieckermann	VO 430.046	M	3
	Functional Materials	Mitterer	VO 425.000	M	3
	Semiconductor Materials	Teichert, Matkovic	VO 460.094	M	3
	Nanocrystalline Materials	Daniel	VO 425.031	M	1
	Modelling of Materials on the Atomic Level	Holec, Hartmann	VO 420.020	E	2
	Exercises to Materials Modelling at Atomic Scale	Holec, Hartmann	VO 420.120	E	2
	Materials selection	Tkadletz	SE 425.136	E	2.5
	Materials Science - Seminar	Schalk, Hofer	SE 440.050	E	2.5
	Mechanics in Small Dimensions	Kiener / Eckert	VO 430.002	E	2
	Structural and Functional Ceramics I	Bermejo	VO 410.002	E	3.75
	Mechanical Behaviour of Multilayer Ceramic Components and Microelectronic Parts	Bermejo	VO 410.009	E	2
	Computational Interface Design	Romaner	VO 420.220	E	1.5
	Fracture Mechanics of Solids	Hohenwarter	VO 430.026	E	2
	Theory of the Mechanical Properties of Solids	Kiener	VO 430.031	E	2
	Solar Cells	Brunner	VO 460.070	E	3
	Introduction to Surface and Thin Film Processes	Teichert	VO 460.111	E	2
	Physics of Micro- and Nanoelectronic Devices	Matkovic	VO 460.072	E	2

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	Growth and Characterization of Epitaxial Layers	Kratzer	VO 460.104	E	2
	Chemistry of Functional Polymers with Switchable Material Properties	Schlögl	VO 231.069	E	3
	In-situ and in-operando Characterization Techniques in Material Science	Kiener, Maier-Kiener	VO 430.013	E	2
	Exercises to in-situ and in-operando Characterization Techniques in Material Science	Kiener / Maier-Kiener	UE 430.014	E	1
	Ceramic Composites and Laminates	Lube	VO 410.006	E	2
	Modelling of Ceramics Behaviour	Supancic	VO 410.023	E	3
	Structural and Functional Ceramics Lab	Bermejo, Harrer, Kraleva, Lube	UE 410.013	E	2

Track 4: Advanced Processing Technologies

(Technical Courses – at Least 25 CP in each Semester)

Module	Saarland University - UdS				
	Course	Responsible	Code	E / M	CP
Semester 2	Powder Metallurgy	Busch	PuMet	E	3
	Lightweight Systems 2	Herrmann		E	3
	Production Engineering	Bähre	ProdSys	E	3
	Amorphous Metals	Busch	AmoMet	E	3
	Precision Machining Technologies	Bähre	FBTec	E	3
	Steel II	Busch	Stahl	E	3
	Fundamentals of Steel Science	Kalla		E	3
	Special Steel Science	Maurer		E	3
	3D Analysis of Micro and Nanostructures - Advanced Methods	Mücklich	3DMN2	E	3
	Physical Acoustics 1	Rabe		E	4
	Methodology 3: High Resolution Microscopy I (SEM, EDS)	Marx	HMV1	E	4
	Machine Dynamics	Diebels		E	4
	Fluid Mechanics	Roland	Ström	E	4
	Laser Treatment of Materials - Applications	Mücklich	Las2	E	3
	Finite Elements in Continuum Mechanics	Diebels	FEMM	E	4
	Tribology in manufacturing processes	Bähre, Fang		E	3
	Non-Destructive Testing in the destructive Testing	Starke		E	3
	Printing of Functional Materials	Gonzalez-García		E	3
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2
Semester 3	Functional Coatings	Kraus	GuKBe	E	3
	Nonferrous Metals	Germain	NEM	E	3
	Joining Technology	Kalla		E	3
	Surface Engineering	Busch	OTech	E	3
	Machining Technologies	Bähre	Spanf	E	3
	Heavy Plate Production and Processing	Kalla		E	3
	Lightweight Systems 1	Herrmann		E	3
	Laser Treatment of Materials - Interaction with Matter	Mücklich	Las1	E	3
	Corrosion and High Temperature Behavior	Motz	KorHT	E	3
	Computer Simulation in Material Physics	Müser		E	8
	Additive Manufacturing of Metals	Bähre		E	3
	Physical Measurement Technologies in Materials Characterization	Fischer		E	4
	Welding	Kalla		E	3
	Elements of Data Science and Artificial Inteligence	Schiele		E	9
	Laboratory Materials Science	Marx and all Professors	PrMW	E	4
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2

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Module	Polytechnical University of Catalonia - UPC				
	Course	Responsible	Code	E / M	CP
Semester 2	Not Available				
Semester 3	Not Available				

Module	Luleå University of Technology - LTU				
	Course	Responsible	Code	E / M	CP
Semester 2	Laser Material Processing (semester 1)	Volpp	T0018T	M	7.5
	Advanced Processing and Cyberlab	Volpp	T7015T	M	7.5
	Select 1 of the following curses:				
	Surface Engineering	Vuorinen	T7004T	E	7.5
	Nanostructured Materials and Nanotechnology	NN	T7006T	E	7.5
	Materials Modeling	Joffe	T7002T	E	7.5
	Metal working	Åkerfeldt	T7028T	E	7.5
	Composite materials	Joffe	T7012T	E	7.5
	Composites Manufacturing and Lightweight design	Fernberg	T7029T	E	7.5
	Biocomposites	Oksman	T7017T	E	7.5
Semester 3	Advanced Processing Technologies - Project Work	All Professors	T0009T	M	30

Module	University of Lorraine - UL				
	Course	Responsible	Code	E / M	CP
Semester 2	Not Available				
Semester 3	Not Available				

Module	University of Padova - UPD				
	Course	Responsible	Code	E / M	CP
Semester 2	Materials Structural Integrity		INQ2100900	M	9
	Glass science and technology		INQ1099059	M	6
	Science and Technology of Ceramics		INQ1098081	M	9
	Computational materials science		INP8083385	E	6
	Photovoltaic Science and Technology		INP9087853	E	6
	Corrosion and Protection of Materials		INQ1099079	E	6
Semester 3	Manufacturing technology		INQ0092839	M	6
	Materials selection and design		INQ1099021	M	6
	Electromagnetic processing of materials		INQ1099020	M	6
	Quality in Manufacturing Engineering		INQ1099039	E	6
	Biopolymers Engineering		INQ1099019	E	6
	Introduction to the Finite Element Method		INQ2100903	E	6
	Nanofabrication		INQ1098075	E	6
	Nanostructured Materials		INP9087849	E	6
	Designing with polymers		INQ2100902	E	6

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The following study plan is tentative: changes may apply each semester (last update: 03/11/2025)

Module	Montanuniversität Leoben - MUL				
	Course	Responsible	Code	E / M	CP
Semester 2	Special Metallurgical Process Technology	Bernhard, Michelic, Schenk	VO 220.045	M	4.5
	Machines and Tools for Processing of Composites	Schledjewski	VO 270.012	M	2.5
	Special Techniques in Polymer Processing	Holzer	VO 350.300	M	3
	Scanning Probe Techniques for the Characterization of Solid Surfaces	Teichert	VO 460.103	E	2
	Polymer Photochemistry	Kern	VO 231.002	E	3
	Technical Biopolymers	Resch-Fauster	SE 210.026	E	3
	Powder Injection Moulding (PIM)	Kukla	VO 290.001	E	1.5
	Case study in processing of composites	Fauster, Schledjewski	UE 270.010	E	7.5
	Machining and Joining of Composites		VO	E	2.5
	Introduction to Surface and Interface Physics	Spieckermann	VO 430.039	E	2
	Solidification Processes and Phase Transformations	Eckert	VO 430.027	E	2
	Recycling Technology of Polymers	Feuchter, Holzer, Jenull, Lehner, Pomberger	VO 350.080	E	3
	Recycling Technology of Polymers – Lab Course	Feuchter, Holzer, Jenull, Lehner, Pomberger	UE 350.081	E	2
	Thermoplastic Composite Materials (FRPC)	Schledjewski	VO 270.008	E	2.5
	Physic of Fullerenes, Graphene and Carbon Nanotubes	Teichert	VO 460.113	E	2
Semester 3	Not Available				

Track 5: Bio/Nanomaterials

(Technical Courses – at Least 25 CP in each Semester)

Module	Saarland University - UdS				
	Course	Responsible	Code	E / M	CP
Semester 2	Methodology 6: Microstructural Mechanics and Damage Mechanisms	Marx	MSMSM	E	3
	Nanostructural Physics 2	Hartmann		E	3
	3D Analysis of Micro and Nanostructures - Advanced Methods	Mücklich	3DMN2	E	3
	NanoBioMaterials 2	Gonzalez-García, Kraus	NBM-2	E	3
	Methodology 7: Nano- and micromechanical testing methods	Motz	NMMMM	E	3
	High-Performance Ceramics	Falk	HLKer	E	3
	Material Modelling	Diebels	MaMo	E	4
	Methodology 3: High Resolution Microscopy I (SEM, EDS)	Marx	HMV1	E	4
	Laser Treatment of Materials - Applications	Mücklich	Las2	E	3
	Functional Materials II	Mücklich	FuWV	E	4
	Methodology 9: Applications of Atomic Force Microscopy	Motz		E	3
	Biomechanics	Diebels		E	3
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2
Semester 3	Functional Coatings	Kraus	GuKBe	E	3
	3D Analysis of Micro and Nanostructures - Basics	Mücklich	3DMN1	E	3
	NanoBioMaterials 1	Gonzalez-García, Kraus	NBM-1	E	3
	Laser Treatment of Materials - Interaction with Matter	Mücklich	Las1	E	3
	Methodology 4: High Resolution Microscopy II (TEM, SPM)	Marx	HMV2	E	3
	Surface Engineering	Busch	OTech	E	3
	Laboratory NanoBioMaterials	Gonzalez-García, Kraus	NBM-P	E	4
	Biomedical Polymers	Del Campo	Biomed	E	2
	Technology of Polymers and Composites	Becker-Willinger		E	1,5
	Continuum Mechanics	Diebels	KonM	E	4
	Methodology 2: Basics of Microscopy and Spectroscopy	Motz	TeG	E	5
	Computer Simulation in Material Physics	Müser		E	8
	Physical Measurement Technologies in Materials Characterization	Fischer		E	4
	Elements of Data Science and Artificial Inteligence	Schiele		E	9
	Laboratory Materials Science	Marx and all Professors	PrMW	E	4
	Internship (Industry)	Marx	FPI	E	6
	Seminar Materials Engineering	All Professors	SMWS	E	2

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Module	Polytechnical University of Catalonia - UPC				
	Course	Responsible	Code	E / M	CP
Semester 2	Not Available				
Semester 3	Biofunctional Materials		295II332	M	6
	Advanced Ceramics		295EM033	M	6
	Advanced Surface Engineering		295EM115	E	6
	Experimentation in Materials Science and Engineering		295EM031	E	6
	Nanostructured Materials		295EM114	E	6
	Bioinformatics		240EM031	E	6
	Advanced Characterization of Materials		295EM011	E	6
	Biomechanics and Sport Technology		295II335	E	6

Module	Luleå University of Technology - LTU				
	Course	Responsible	Code	E / M	CP
Semester 2	Biocomposites	Oksman	T7017T	M	7.5
	Nanomaterials	NN	T7006T	M	7.5
	Select one of the following:				
	Phase Transformations (semester 1)	Akthar	T7008T	E	7.5
	Material Mechanics (semester 1)	Edberg	T7016T	E	7.5
	Laser Material Processing (semester 1)	Volpp	T0018T	E	7.5
Semester 3	Bio/Nanomaterials - Project Work	All Professors	T0009T	M	30

Module	University of Lorraine - UL				
	Course	Responsible	Code	E / M	CP
Semester 2	Not Available				
Semester 3	Not Available				

Module	University of Padova - UNIPD				
	Course	Responsible	Code	E / M	CP
Semester 2	Fundamentals of nanoscience		INQ1098067	M	6
	Science and Technology of Ceramics		INQ1098081	M	9
	Sports Engineering and Rehabilitation Devices		INP9087854	M	6
	Computational materials science	Simone	INP8083385	E	6
	Photovoltaic Science and Technology		INP9087853	E	6
	Corrosion and Protection of Materials		INQ1099079	E	6
Semester 3	Composite Materials		INP9086686	M	9
	Materials selection and design		INQ1099021	M	6
	Biopolymers Engineering		INQ1099019	M	6
	Quality in Manufacturing Engineering		INQ1099039	E	6
	Electromagnetic Processing of Materials		INQ1099020	E	6
	Introduction to the Finite Element Method		INQ2100903	E	6
	Nanofabrication		INQ1098075	E	6
	Nanostructured Materials		INP9087849	E	6
	Designing with polymers		INQ2100902	E	6
	Manufacturing technology	Bruschi	INP7080518	E	6

For INP code https://en.didattica.unipd.it/off/2020/LM/IN/IN0523

For SCP code https://en.didattica.unipd.it/off/2020/LM/SC/SC1174

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Module	Montanuniversität Leoben - MUL				
	Course	Responsible	Code	E / M	CP
Semester 2	Not Available				
Semester 3	Not Available				

Transversal skills (at Least 10 CP in first year, at least 5 CP in 3rd Semester)

Description:

Languages – at least 6 CP: Courses on languages of the consortium: English, German, French, Spanish, Swedish, Italian, Catalan

IW and PSS – 2 CP: Participation in Integration Week and Professional Summer School

Additional Transversal skills – at least 3 CP: Courses, Seminars, Projects, Summer Schools related transversal competences.

Sem	Module	Saarland University - UdS				
		Course	Responsible	Code	E / M	CP
1	Languages	Language Courses German	ISZ Saar		E	3 – 6
		Language Courses German, English, Spanish, French, Swedish, Italian, Catalan (*2)	Sprachen-zentrum		E	3 – 6
	IW – PSS	AMASE Integration Week	Mücklich		M	1
	Transversal Skills (*1)	Data Science and Artificial Intelligence			E	9
		Crash course Business Start-up	KWT		E	2
		Start-up Cup, 3-days seminar	KWT		E	2
		Patent law	Wolf		E	3
		Scientific and Professional Skills for Students - SciPros	Heß		E	4
		Wissenschaftliches Schreiben in den Natur- und Ingenieurwissenschaften für Master	Lienkamp		E	3
		Other courses from the central institutions of UdS listed below. Prior recognition required.			E	1-3
2	Languages	Language Courses German	ISZ Saar		E	3 – 6
		Language Courses German, English, Spanish, French, Swedish, Italian, Catalan (*2)	Sprachen-zentrum		E	3 – 6
	IW – PSS	Professional Summer School	Mücklich		M	1
	Transversal Skills (*1)	Data Science and Artificial Intelligence			E	9
		Crash course Business Start-up	KWT		E	2
		Start-up Cup, 3-days seminar	KWT		E	2
		Outreach project “Schülerlabor Advanced Materials”	Mücklich		E	2
		Wissenschaftliches Schreiben in den Natur- und Ingenieurwissenschaften für Master	Lienkamp		E	3
		Other courses from the central institutions of UdS listed below. Prior recognition required.			E	1-3
3	Languages	Language Courses German	ISZ Saar		E	3 – 6
		Language Courses German, English, Spanish, French, Swedish, Italian, Catalan (*2)	Sprachen-zentrum		E	3 – 6
	IW – PSS	Professional Summer School	Mücklich		M	1
	Transversal Skills (*1)	Data Science and Artificial Intelligence			E	9
		Crash course Business Start-up	KWT		E	2
		Start-up Cup, 3-days seminar	KWT		E	2
		Outreach project “Schülerlabor Advanced Materials”	Mücklich		E	2
		Patent law	Wolf		E	3
		Wissenschaftliches Schreiben in den Natur- und Ingenieurwissenschaften für Master	Lienkamp		E	3
		Scientific and Professional Skills for Students - SciPros	Heß		E	4
		Other courses from the central institutions of UdS listed below. Prior recognition required.			E	1-3

(*1) At UdS, in addition to the courses listed below, students can also attend seminars offered by EUSMAT, the Zell, the Career Center, GradUS or other central institutions of the UdS. In this case, it must be clarified in advance with

EUSMAT whether the courses can be recognized. If EUSMAT confirms, the "Transversal Skills" recognition form must be submitted after completion of the course.

(*2) Students have to take language courses to deepen the knowledge of the German language and or to acquire knowledge of the language of instruction of the selected first/second university. In exceptional cases, for example if the student is already a native speaker or has already B2 level of both languages properly demonstrated, language courses in another language of the consortium can also be accepted. The languages of instruction of the university consortium are German, English, French, Catalan, Swedish, Italian and Spanish.

Sem	Module	Polytechnical University of Catalonia - UPC				
		Course	Responsible	Code	E / M	CP
1	Languages	Language Courses German I, French I, English I, Spanish I			M	4
	IW – PSS	AMASE Integration Week	Mücklich - UdS		M	1
	Transversal Skills	Data Analysis and Pattern recognition		295II012	E	6
2	Languages	Language Courses German II, French II, English II, Spanish II			M	4
	IW – PSS	Professional Summer School	Mücklich - UdS		M	1
	Transversal Skills	Sustainability and circular economy			E	6
		Recircula Challenge Competition	Recircula Hub UPC-AMB		E	2
		KOREATECH Summer Programme for Capstone Design Project (4 weeks – Limited places)	KOREATECH		E	3
3	Languages	Language Courses German II, French II, English II, Spanish II			M	4
	IW – PSS	Professional Summer School	Mücklich - UdS		M	1
	Transversal Skills	Recircula Challenge Competition	Recircula Hub UPC-AMB		E	2
		Data Analysis and Pattern recognition		295II012	E	6
		KOREATECH Summer Programme for Capstone Design Project (4 weeks – Limited places)	KOREATECH		E	3

Sem	Module	Luleå University of Technology - LTU				
		Course	Responsible	Code	E / M	CP
1	Languages	Swedish, German, French, Spanish	LTU		M	3, 7.5
	IW – PSS	--				
	Transversal Skills	Gender Diversity				
2	Languages	Language Courses German, French, Spanish			M	7.5
	IW – PSS	--				
	Transversal Skills	Career Planning Lecture Series				
3	Languages	Swedish for International Students 1			M	3
		Swedish for International Students 2			M	4.5
	IW – PSS	--				
	Transversal Skills	Gender Diversity Career Planning Lecture Series				

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Sem	Module	University of Lorraine - UL				
		Course	Responsible	Code	E / M	CP
1	Languages	Language Course French, German, Spanish, English			M	2 – 6
	IW – PSS	AMASE Integration Week	Mücklich - UdS		M	1
	Transversal Skills	Gender Diversity				
2	Languages	Language Courses French, German, Spanish, English			M	2 – 6
	IW – PSS	Professional Summer School	Mücklich - UdS		M	1
	Transversal Skills	Outreach project (Students at school / pupils at University)			E	2
		KOREATECH Summer Programme for Capstone Design Project (4 weeks – Limited places)	KOREATECH		E	3
3	Languages	Language Courses French, German, Spanish, English			M	2 – 6
	IW – PSS	Professional Summer School	Mücklich - UdS		M	1
	Transversal Skills	Gender Diversity				
		KOREATECH Summer Programme for Capstone Design Project (4 weeks – Limited places)	KOREATECH		E	3

Sem	Module	University of Padua - UNIPD				
		Course	Responsible	Code	E / M	CP
1	Languages	Language Course French, German, Spanish, English				
	IW – PSS	AMASE Integration Week	Mücklich - UdS		M	1
	Transversal Skills	Innovation and entrepreneurship				6
2	Languages	Language Courses French, German, Spanish, English				
	IW – PSS	Professional Summer School	Mücklich - UdS		M	1
		Industry Community Work at UNIPD and University of Sidney				3
		KOREATECH Summer Programme for Capstone Design Project (4 weeks – Limited places)	KOREATECH		E	3
3	Languages	Language Courses French, German, Spanish, English				
	IW – PSS	Professional Summer School	Mücklich - UdS		M	1
	Transversal Skills	Innovation and entrepreneurship				6
		Industry Community Work at UNIPD and University of Sidney				3
		KOREATECH Summer Programme for Capstone Design Project (4 weeks – Limited places)	KOREATECH		E	3

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Sem	Module	Montanuniversität Leoben - MUL				
		Course	Responsible	Code/Type	E / M	CP
1	Languages	German as a foreign language A1.1		IV	E	4
		German as a foreign language A1.2		IV	E	4
		German as a foreign language A2.1		IV	E	4
		German as a foreign language B1.1		IV	E	4
		German as a foreign language B2.1		IV	E	4
		German as a foreign language C1.1		IV	E	4
		German for Professional and Academic Purposes 1 (B2+/C1)		IV	E	3
		French A1.1		IV	E	4
		French A2.1		IV	E	4
		Spanish A1.1		IV	E	4
		Spanish A2.1		IV	E	4
		Spanish B1.1		IV	E	4
		Exam Prep: TOEFL & IELTS		IV	E	2
		Intensive Incoming English Course		IV	E	3
	IW – PSS	AMASE Integration Week at UdS	Mücklich - UdS	IV	E	1
	Additional Transversal Skills	Effective Meetings and Negotiations in English – B2		IV	E	1
		Communication in Engineering B2.2		IV	E	2
		Applying for a Job in English		IV	E	1
		Computational Data Analysis in Materials Science		IV	E	2
		Resource Economics		VO	E	2
		Sustainability Management		SE	E	4.5
		Introduction to Circular Engineering		IV	E	2
		Sustainable Development in Metallurgy		IV	E	2.5
		Sustainable Business Management		SE	E	4.5
2	Languages	German as a foreign language A1.1		IV	E	4
		German as a foreign language A1.2		IV	E	4
		German as a foreign language A2.2		IV	E	4
		German as a foreign language B2.2		IV	E	4
		German as a foreign language C1.2		IV	E	4
		French A1.2		IV	E	4
		French A2.2		IV	E	4
		Spanish A1.2		IV	E	4
		Spanish A2.2		IV	E	4
		Spanish for Professional Purposes		IV	E	1
		English for Engineers (Polymer Science)		IV	E	2
		Advanced English Communication in Engineering C1		IV	E	2
		Exam Prep: TOEFL & IELTS		IV	E	2
		Intensive Incoming English Course		IV	E	4
	IW – PSS	AMASE Professional Summer School at UdS	Mücklich - UdS	IV	M	1
	Additional Transversal Skills	Effective Presentations Skills in English – B2		IV	E	1
		English Business Focus B2		IV		3
		Intercultural Competence and Communication		IV	E	1
		The Art of Scientific Writing		IV	E	1
		Introduction to Climate Protection and Sustainability		VO	E	3
		Data-Driven Materials Science		VO		1.5
3	Languages	German as a foreign language A1.1		IV	E	4
		German as a foreign language A1.2		IV	E	4
		German as a foreign language A2.1		IV	E	4
		German as a foreign language B1.1		IV	E	4

*E / M: Elective / Mandatory / CP = Credit Points according to ECTS System of the EU

		German as a foreign language B2.1	IV	E	4
		German as a foreign language C1.1	IV	E	4
		German for Professional and Academic Purposes 1 (B2+/C1)	IV	E	4
		French A1.1	IV	E	4
		French A2.1	IV	E	4
		Spanish A1.1	IV	E	4
		Spanish A2.1	IV	E	4
		Spanish B1.1	IV	E	4
		Exam Prep: TOEFL & IELTS	IV	E	2
		Intensive Incoming English Course	IV	E	4
	IW – PSS	AMASE Professional Summer School at UdS Mücklich - UdS	IV	E	1
	Additional Transversal Skills	Effective Meetings and Negotiations in English – B2	IV	E	1
		Communication in Engineering B2.2	IV	E	2
		Applying for a Job in English	IV	E	1
		Computational Data Analysis in Materials Science	IV	E	2
		Resource Economics	VO	E	2
		Sustainability Management	SE	E	4.5
		Introduction to Circular Engineering	IV	E	2
		Sustainable Development in Metallurgy	IV	E	2.5
		Sustainable Business Management	SE	E	4.5

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