Available Courses Winter Term 2026/2027 (October 1st - January 29th)

Please click on the course title for further information about the course content. Check the course description carefully for pre-requisites and prior knowledge to participate in each course, and ensure that you meet the requirements before enrolling. Please note that all students are responsible to keep scheduling conflicts to a minimum Please be aware that due to participant number limitations, not all courses may be available. 1 ECTS equals 25 hours of workload, **30 ECTS represent the workload of 1 academic semester.**

Courses written in GREEN are new courses for which no further information about is available yet.

Courses written in RED are only available for Master students in the field of Materials Science or Metallurgy.

The course 601.309 - Fundamentals of Logistics Systems Engineering (for international students) is a recommendation for exchange students.

Course Index:

Course Type Index:

L - lecture

VU - lecture and practical (mandatory attendance)

P - practical (mandatory attendance)

IV - integrated course (mandatory attendance)

RP - tutorial

SE - seminar (mandatory attendance)

MI - Module with continuous assessment (mandatory attendance)

MN - Module without continuous assment

GU - field exercise (mandatory attendance)

Chair	Course Number	Course Title	Semester Hours	ECTS	Course Type	Teaching Language
Energy Geosciences	630.001	Introduction to Hydrogeology	1.5	1,5	IV	EN, DE
	630.002	Advanced Hydrogeology and Deep Geothermal Systems	2	2	IV	EN
	630.006	Shallow Geothermal Energy Systems	2	2	IV	EN
	630.009	Geoenergy Exploration	2	2,5	IV	EN
	630.010	Petroleum Geology	2	2	L	EN
	630.011	Sedimentology Lab	1	1	P	EN
	630.012	Lab in Petroleum Geology	1	1	P	EN
	630.019	Petroleum Systems and Unconventials	2.5	4	IV	EN
	630.021	Geoenergy Trends in Industry and Academia	2	2	IV	EN, DE
	630.024	Geological Modelling	2	3	IV	EN
	630.026	Soil Sciences	1	1,5	L	EN
	630.113	Sedimentology for Petroleum Engineers	2	3	L	EN
	630.114	Sedimentology	2.5	3	L	EN
	630.133	Advanced Hydrogeology	2	2	IV	EN
	630.144	Petroleum Operations and Production Geology	2	2	IV	EN
	630.154	Petroleum Exploration	2	2	IV	EN
	630.170	Sedimentology for Petroleum Engineers Lab	2	2	P	EN
Physical Metallurgy	420.130	Materials for Additive Manufacturing	2	2	L	EN, DE
	420.225	Data-Driven Materials Science	1	1,5	L	EN
	420.265	Metallic Materials I	4	5	M	EN
	420.267	Materials Technology I	4	5	M	EN
	420.269	Materials Technology II	4	5	MI	EN
	420.271	Data-driven Materials Design	5	5	MI	EN
	420.273	Metals in Applications	5	5	MI	EN
	420.275	Meso-scale Materials Modelling	5	5	MI	EN
Functional Materials and Materials Systems	425.000	Functional Materials	2	3	L	EN
	425.003	The Art of Scientific Writing	1	1	IV	EN
	425.140	Computational data analysis in materials science	2	2	IV	EN
	425.150	Materials for power engineering	2	3	L	EN
	425.205	Functional Materials I	5	5	MI	EN
	425.208	Science and Responsibility (if admitted for master thesis at chair of Functional Materials)	5	5	MI	EN
	425.211	Materials for Energy	5	5	MI	EN
	425.213	Advanced Materials Testing	4	5	MI	EN
Processing of Composites and Design for Recycling	270.017	Thermoset based composite materials	2	2,5	L	EN
	270.019	Digital Image Processing	2	2	IV	DE, EN
	270.031	Circularity of Fiber-Reinforced Polymer Composites	4	5	MI	EN
Process Technology and Industrial Environmental Protection	500.001	Renewable Materials Processing	2	3	L	EN
	500.020	Carbon Capture, Utilisation and Sequestration as climate protection measures	2	3	L	EN
Subsurface Engineering	340.019	Numerical methods in geotechnical engineering	2	4	L	EN
	340.020	Exercise in numerical methods in geotechnical engineering	2	2	P	EN

Industrial Logistics	601.206	Logistics Strategy and Supply Chain Management	2	3	VU	EN, DE
	601.309	Fundamentals of Logistics Systems Engineering (for International Students)	2	5	SE	EN
	601.613	Warehouse Engineering	4	5	IV	EN, DE
Ceramics	320.001	Basic refractory materials	2	3	L	EN
	320.020	Project study in the fields of building materials and ceramics	3	4	SE	EN
	320.067	Building materials 2	2	2,5	L	EN
	320.069	Plant design and process technology for the production of building materials	2	2	L	EN
	320.070	Testing methods and application of building materials	2	2,5	L	EN, DE
	320.071	Fundamentals of building materials and ceramics	3	4	IV	EN
	320.079	Laboratory exercise in building materials and ceramics 2	3	3	P	EN
	320.086	Laboratory exercise in building materials and ceramics 1	3	3	P	EN
	320.123	Modelling and simulation in building materials technology	3	4	IV	EN
	320.400	Ecological and Conventional Building Materials	1.5	2	L	EN
Polymer Processing	350.100	Polymer Nanotechnology	2	3	L	EN
	350.671	Lab in Processing of Polymers and Composites	4	5	MI	EN
Materials Physics	430.001	Additive Manufacturing	1.3	2	L	DE, EN
	430.003	Additive Manufacturing	2	3	L	DE, EN
	430.022	Structure and Scattering Methods plus Exercises	3	4	VU	EN
	430.901	Mechanics of Materials	4	5	MN	EN
	430.905	Correlative Materials Analysis	3	5	MN	EN
Physical Chemistry	480.003	Electrochemical energy storage and conversion	2	3	L	DE, EN
	480.008	Tutorial for independent scientific work in the area of Physical Chemistry	4	4	SE	EN
	480.009	Tutorial Physical Chemistry I (Module 1)	1	1	P	EN, DE
	480.011	Modul - Fundamentals of Physical Chemistry and Thermodynamics	3.5	5		EN
	480.012	Fundamentals of Physical Chemistry and Thermodynamics	2.5	4	L	EN
	480.062	Ion Conducting Ceramics	2	2	L	DE, EN
	480.067	Tutorial for independent scientific work in the area of Physical Chemistry	4	4	SE	EN
	480.082	Catalytic Characterisation and Measurement Methods	4	4	P	DE, EN
Ferrous Metallurgy	220.000	Basics of Ferrous Metallurgy	4	5	MI	EN
	220.003	Steel production and processing for material technologists	2	3	L	EN
	220.037	Computational Data Analysis in Metallurgy	2	2	IV	EN
	220.087	Metallurgical Project	2	2,5	SE	EN
Electrical Engineering	240.102	Utility Scale Wind Energy Power Plants	2	3	L	EN
Waste Processing Technology and Waste Management	515.207	Digitalization and Sensoric in Environmental Technology	2	3	IV	EN, DE
	515.301	Basics and Methods of International Waste Management	3	3,5	IV	EN
Geoenergy Production Engineering	550.003	Health, Safety and Environment	2	2	IV	EN
	550.011	Scientific Report Writing and Presentation Skills for Geoenergy Engineers	2	2	SE	EN
	550.007	Geoenergy Production Systems	4	4	IV	EN
	550.017	Geoenergy Production Principles for Geoscientists	2	2,5	L	EN
	550.023	Improving sustainability with Reliability Management	2	3	IV	EN
	550.027	Geoenergy Modelling	4		MI	EN
	550.031	Analytical and Numerical Methods in Geomechanics	3		MI	EN

Drilling and Completion Engineering	590.003	Drilling and Well Design	4	6	IV	EN
	590.102	Advanced Well Monitoring and Analysis	3	4	MI	EN
	590.104	Drilling and Well Construction Lab	4		P	EN
	590.105	Drilling Process Evaluation and Planning	3	4	MI	EN
	590.106	Field Development Project	1	3	SE	EN
	590.107	Measurement Control, Monitoring and Analysis	3	4	MI	EN
	590.110	Well Lifecycle Integrity and Abandonment	4		MI	EN
Reservoir Engineering	570.001	Reservoir Engineering Fundamentals	4	4	IV	EN
	570.023	Wellbore and Reservoir Geomechanics	2	3	IV	EN
	570.048	TripleNTalks	1	1	SE	EN
	570.201	Geological CO2 and H2 Storage	4	5	M	EN
	570.202	Reservoir Management	3	5	M	EN
	570.203	Digital Rock Analysis	4	5	M	EN
	570.204	Unconventional Resources	4	5	M	EN
Mineral Processing	180.004	Processing of Construction Raw Materials	1.5	2	IV	DE, EN
	180.008	Fundamentals of Mineral Processing	2	3	L	DE, EN
	180.012	Project Study Mineral Processing	2,5	3,5	SE	DE
	180.014	Processing of industrial wastes - slag, sludge, dust	1	1,5	L	DE, EN
	180.027	Seminar on Mineral Processing	2	2	SE	DE
	180.072	Sampling and Homogenisation	3	4	IV	DE, EN
	180.075	Project Study Mineral Processing (RT)	3	3,5	SE	DE
Chemistry of Polymeric Materials	231.700	Fundamentals of Materials 2	3	4	VU	EN
	231.800	Polymers in Medical Devices	4	5	MI	EN
	231.801	Chemistry of Biobased Materials	4	5	MI	EN
	231.802	Industrial Polymer Chemistry	4	5	MI	EN
	231.803	Coatings and Adhesives	4	5	MI	EN
	231.805	Advanced Polymer Chemistry	4	5	MI	EN
Applied Mathematics	170.019	Inverse Problems	4	6	IV	EN
	170.031	Programming in Python	3	5	IV	EN
Automation and Measurement	530.007	Foundations of Measurement	2	2,5	IV	EN
	530.015	Advanced Control Engineering	2	2	IV	DE, EN
	530.017	Lab Exercises in Advanced Control Engineering	1	1	P	DE, EN
	530.069	Data Science for Engineers II	2	3	IV	EN, DE
	530.091	Digital Twins	2	3	IV	EN, DE
	530.099	Advanced Studies in Automation and Measurement	5	5	SE	DE, EN
Applied Geophysics	260.006	Digital Signal Processing	2,5	3	VU	EN
	260.009	Geophysical Reservoir Characterization	4.5	6	IV	EN
	260.010	Advanced Borehole Geophysics	3	4	IV	EN
	260.029	Integrated Geophysical Field Workshop	4	6	GU	EN
	260.035	Mineral Exploration Geophysics	2	2	L	EN
	260.038	Engineering Geophysics	2	2,5	IV	EN
	260.041	Induced Seismicity	2	2,5	IV	EN
	260.043	Hydrogeology and Geothermal Systems	3	4	VU	EN
	260.012	Applied Geophysics	2,5	3	VU	EN, DE
	260.050	Geophysical Seminar	1	1	SE	EN

	641.000	Transferable Skills	1.33	2,00	IV	DE, EN
	641.001	Rhetoric / Public Speaking	0.33		IV	DE, EN
	641.002	Presenting & Visualising	0.33		IV	DE, EN
	641.003	Self-Management	0.33		IV	DE, EN
	641.004	Ethics	0.33		IV	DE, EN
	641.005	Excel	0.33		IV	DE, EN
	641.006	World Climate Game	1		IV	DE
	641.041	MUL. An Essential Starter Guide	2		IV	EN
	641.147	Choral Singing	3	3	P	DE
	641.169	Motivation, Identity & Success I: Personal Curiosity vs. External Reward	1	1	IV	EN
	641.300	Symphonic wind orchestra	3	3	P	DE
	641.331	English Debating Skills Course	1	1	IV	EN
	641.333	English Debating Skills Course	2	2	IV	EN
	641.509	Spanish A1.1	4	4	IV	ES, DE
	641.511	Spanish A2.1	4	4	IV	ES, DE
	641.514	Spanish A1.2	4	4	IV	ES, DE
	641.529	Rhetoric Basics: The Science of Being Right	2	2	IV	EN
	641.530	English 1: Language Consolidation B1	3	3	IV	EN
	641.531	Effective Meetings in English - B2	1	1	IV	EN
	641.532	Applying for a Job in English	1	1	IV	EN
Languages, Learning and Culture	641.535	Intensive Incoming English Course	3	3	IV	EN
	641.537	English for Academic Purposes	4	4	IV	EN
course fees apply for all 641.xxx courses except for the Intensive Incoming English Course (641.535), which takes place from September 16th - September 30th	641.539	Practicing Principles of International Leadership across Cultures	2	2	IV	EN
	641.541	English 3 Upper-Intermediate C1.1	2	2	IV	EN
	641.543	Exam Preparation TOEFL & IELTS	2	2	IV	EN
	641.547	Communication in Engineering B2.2	2	2	IV	EN
	641.549	German as a foreign language A1.1	4	4	IV	DE, EN
	641.550	German as a foreign Language A1.2	4	4	IV	DE, EN
	641.551	German as a foreign language A2.1	4	4	IV	DE, EN
	641.555	German as a foreign language A2.2	4	4	IV	DE
	641.557	German as a foreign language B1.1	4	4	IV	DE
	641.559	German as a foreign language B2.1	4	4	IV	DE
	641.567	French A1.1	4	4	IV	DE, EN, FR
	641.570	Italian A1.1	3	3	IV	DE
	641.571	Portuguese A1.1	3	3	IV	DE, EN, PT
	641.573	Chinese A1.1	3	3	IV	ZH, DE
	641.575	Portuguese A2.1	3	3	IV	DE
	641.577	Italian A2.1	3	3	IV	DE
	641.579	Chinese A1.2	3	3	IV	ZH, DE
	641.581	Chinese A1.3	3	3	IV	ZH, DE
	641.583	German C1.1	4	4	IV	DE
	641.613	Spanish B1.1	4	4	IV	ES, DE