



UNIVERSITÄT
LEIPZIG

Faculty of Physics and
Earth Sciences

Course Program

Master of Science

Meteorology

Valid from winter semester 2020/21

1 Study Plan and Course Program

1.1 Study Plan – Master of Science Meteorology

Semester:		1	2	3	4
Compulsory Area	Meteorology	P1 – Dynamics and Synoptics 6 CP / 2+2 CHW	P3 – Advanced Weather Discussions 5 CP / 2+1 CHW	P5 – Current Research in Meteorology 10 CP / 1+2 CHW	
		P2 – Atmospheric Radiation 5 CP / 2+1 CHW	P4 – Dynamics of the Global Climate System 6 CP / 2+2 CHW	P6 – Advanced Scientific Working in Meteorology 10 CP / 1+2 CHW	
	Thesis				Master Thesis 30 CP
Elective Area	General Meteorology	General Meteorology – 10 CP; 2 Modules of: A1 – Atmospheric Aerosol, A2 – Atmospheric Chemistry - The Multiphase System, A3 – Numerical Weather Prediction and Climate Modelling, A4 – Polar Climate, A5 – Cloud Physics, A6 – Dust in the Atmosphere, A7 – Atmospheric Trace Substances and their Modelling			
	Experimental Meteorology	Experimental Meteorology – 10 CP; 2 Modules of: E1 – Airborne Physical Measuring Methods, E2 – Ground-based Radar and Microwave Remote Sensing, E3 – Upper Atmosphere, E4 – Active Remote Sensing with Lidar, E5 – Spaceborne Remote Sensing			
	Theoretical Meteorology	Theoretical Meteorology – 10 CP; 2 Modules of: T1 – Dynamics of the Middle Atmosphere, T2 – Atmospheric Models: Parameterizations and Scales, T3 – Radiative Transfer Lab, T4 – Scattering and Atmospheric Optics, T5 – Terrestrial Radiative Transfer, T6 – Data Assimilation			
	Physics	Physics – 8 CP; 1 Module of: Experimental Physics 3 or Theoretical Physics 1, 2, 4, 5 from B.Sc. IPSP (English) or Experimental Physics 3, 4, 5 or Theoretical Physics 1, 2, 3, 4 from B.Sc. Physik (German)			
	Leipzig University	Free Elective Area – 10 CP: Either 2 additional Modules from the Elective Areas in Meteorology or any Module(s) from other study programs			

* CHW: contact hours per week (usually lecture + seminar or exercises); CP: credit points

1.1.1 Compulsory Area

Semester	Module Number	Title of Compulsory Module	CP
1	12-111-1001	P1 – Dynamics and Synoptics	6
1	12-111-1019	P2 – Atmospheric Radiation	5
2	12-111-1020	P3 – Advanced Weather Discussions	5
2	12-111-1021	P4 – Dynamics of the Global Climate System	6
3	12-111-1022	P5 – Current Research in Meteorology	10
3	12-111-1023	P6 – Advanced Scientific Working in Meteorology	10
4		Master Thesis	30
Total			72

1.1.2 Elective Area

Semester	Module Number	Title of (Compulsory) Elective Module	CP
1 – 3			10
General Meteorology			
1/3	12-111-1024	A1 – Atmospheric Aerosol	5
1	12-111-1025	A2 – Atmospheric Chemistry - The Multiphase System	5
1/3	12-111-1026	A3 – Numerical Weather Prediction and Climate Modelling	5
2	12-111-1043	A4 – Polar Climate	5
2	12-111-1028	A5 – Cloud Physics	5
2	12-111-1042	A6 – Dust in the Atmosphere	5
1/3	12-111-1041	A7 – Atmospheric Trace Substances and their Modelling	5
1 – 3			10
Experimental Meteorology			
1/3	12-111-1035	E1 – Airborne Physical Measuring Methods	5
1/3	12-111-1036	E2 – Ground-based Radar and Microwave Remote Sensing	5
2	12-111-1037	E3 – Upper Atmosphere	5
1/3	12-111-1038	E4 – Active Remote Sensing with Lidar	5
2	12-111-1039	E5 – Spaceborne Remote Sensing	5
1 – 3			10
Theoretical Meteorology			
1/3	12-111-1029	T1 – Dynamics of the Middle Atmosphere	5
2	12-111-1031	T2 – Atmospheric Models: Parameterizations and Scales	5
2	12-111-1040	T3 – Radiative Transfer Lab	5
1/3	12-111-1032	T4 – Scattering and Atmospheric Optics	5
2	12-111-1033	T5 – Terrestrial Radiative Transfer	5
2	12-111-1034	T6 – Data Assimilation	5
1 – 3			8
Physics			
either 1 Module from the (English) Bachelor Program “B.Sc. IPSP”:			
1/3	12-PHY-BIEP3	Experimental Physics 3 - Electromagnetic Waves and Foundations of Quantum Physics	8
1/3	12-PHY-BIPTP1 [#]	Theoretical Physics 1 - Classical Mechanics 1	8
2	12-PHY-BIPTP2 [#]	Theoretical Physics 2 - Electrodynamics 1	8
2	12-PHY-BIPTP4	Theoretical Physics 4 - Quantum Mechanics	8
1/3	12-PHY-BIPTP5	Theoretical Physics 5 - Statistical Physics	8
or 1 Module from the (German) Bachelor Program “B.Sc. Physik”:			
1/3	12-PHY-BPEP3*	Experimentalphysik 3 - Optik und Quantenphysik	8
2	12-PHY-BPEP4*	Experimentalphysik 4 - Struktur der Materie	8
1/3	12-PHY-BEP5*	Experimentalphysik 5 - Festkörperphysik	8
1/3	12-PHY-BTP1*	Theoretische Physik 1 - Theoretische Mechanik	8
2	12-PHY-BTP2*	Theoretische Physik 2 - Quantenmechanik	8
1/3	12-PHY-BTP3*	Theoretische Physik 3 - Statistische Physik	8
2	12-PHY-BTP4*	Theoretische Physik 4 - Elektrodynamik & klassische Feldtheorie	8
1 – 3			10
Free Elective Area			
1 – 3		either 2 modules from the Elective Areas in Meteorology or any module(s) from other study programs ^{§,*}	10

Cooperation agreements exist with the Institute for Geography for the following modules:

1/3	12-GGR-B-PG01A	Grundlagen der Physischen Geographie/Geoökologie I: Gestein, Relief, Boden	5
1/3	12-GGR-B-PG01B	Grundlagen der Physischen Geographie/Geoökologie II: Klima, Wasser, Vegetation	5
2	12-GGR-B-PG02	Geosystemanalyse, Methoden und Bewertung [§]	10
2	12-GGR-B-GF04	Grundlagen der Fernerkundung	5
1/3	12-GGR-B-GF05	Einführung in die Geoinformatik	10
1/3	12-GGR-M-PG02	Umweltbezogene Geoökologische Standortbewertung	5
1/3	12-GGR-M-PG06	Angewandte Spezialgebiete der Geographie	10
1/3	12-GGR-M-GFP1	Umweltfernerkundung [§]	5
2	12-GGR-M-GFP2	Geographische Informationssysteme- Modelle und Analysen [§]	5
Total			48

* Lectures and examinations (might be) in German language

Students, who have already completed the module "Mathematische Methoden - Methoden der klassischen Physik" (12-PHY-BMAME1) in the Bachelor's program cannot select these modules.

§ Any module(s) offered in other study programs can be chosen according to valid cooperation agreements. Further modules can be approved by the examination board upon request.

§ Please check the participation requirements in the module descriptions.