

Annex 1: Curriculum

Module title / Module code	CP	Semester			
		1	2	3	4
1. Technical Basics of Advanced Materials AdvMat-MM-01	6	L E			
2. Renewable Energies AdvMat-MM-02	6	L E			
3. Specialisation	12	var.			
4. Elective module	6	var.			
CP 1st semester	30				
5. Functional Soft Materials AdvMat-MM-03	6		L E		
6. Functional Solid-State Materials AdvMat-MM-04	6		L E		
7. Specialisation	12		var.		
8. Elective module	6		var.		
CP 2nd semester	30				
9. Research Module AdvMat-MM-08	12			P	
10. Specialisation	18			var.	
CP 3rd semester	30				
11. Master's Thesis AdvMat-MM-09	30				T
CP 4th semester	30				
Total	120				

L = Lecture

E = Exercise

S = Seminar

T = Thesis

P = Practice

Annex 2: Module Descriptions

Technical Basics of Advanced Materials	3
Renewable Energies	5
Functional Soft Materials	7
Functional Solid State Materials.....	9
Team Module Advanced Materials.....	11
Methods Module Advanced Materials.....	12
Lab Module Advanced Materials.....	13
Research Module	14
Master's Thesis.....	15
3D Imaging Methods in Materials and Natural Sciences.....	16

AdvMat-MM-01	Technical Basics of Advanced Materials		6 CP
	Technische Grundlagen der Materialwissenschaft		
Core module	07 / Physics; 08 / Chemistry		1 st semester
	First offered in winter 2025/26		
Academic objectives: <ul style="list-style-type: none"> – Students are familiar with basic methods for material production, manufacturing and processing and the current state of the art on a laboratory scale and in industry. – Students are able to assess the advantages and disadvantages as well as the costs of individual methods for the production, manufacture and processing of different materials. They can decide which process is most suitable on an industrial scale for a specific technical problem. – Students master the technical and application-related fundamentals required to operate complex experimental facilities and preparation systems. 			
Content: <ul style="list-style-type: none"> – Macroscopic material properties – Composite materials and technical glasses – Vacuum technology to UHV – Heating and cooling technology – Lighting technology and optical instruments, signal processing – Material processing techniques 			
Course frequency and duration: winter term, 1 semester (winter)			
Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials			
Applicable to the following study programs: M. Sc. Advanced Materials, M. Sc. Applied Physics, M. Sc. Physics			
Participation requirements: none			
Course format:	Contact hours	Preparation and follow-up work	
Lecture	45	90	
Seminar	15	30	
Total:	180		
Examination requirements: none			
Module examination: <ul style="list-style-type: none"> – Written exam (90 - 120 min) or oral exam (20 - 40 min) – Repeat examination: Written exam (90 - 120 min) or oral exam (20 - 40 min) 			

Course language: English

Examination language: German or English

AdvMat-MM-02	Renewable Energies		6 CP
	Erneuerbare Energien		
Core module	07 / Physics; 08 / Chemistry		1 st semester
	First offered in winter 2025/26		
Academic objectives: <ul style="list-style-type: none"> – Students are familiar with modern concepts of energy conversion with regard to renewable energies and can explain the basic functioning of relevant energy storage systems and energy converters. – Students can apply their knowledge to find suitable materials for energy storage and conversion. They are able to estimate the (future) energy demand for various parts of society (mobility, heating, etc.) and discuss ways of meeting this demand with renewable energies. – Students can estimate the efficiency of the energy conversion of various energy technologies. They can discuss the advantages and disadvantages of renewable energies and the corresponding conversion technologies in terms of economic aspects, criticality of the necessary elements, sustainability and social aspects. 			
Content: <ul style="list-style-type: none"> – Thermodynamics of energy conversion – Efficiency of energy conversion – Methods for converting renewable energies, e.g., wind power, hydropower, photovoltaics, geothermal energy – Technologies for energy storage – Materials for water splitting, fuel cells, batteries, etc. – Energy content of storage materials – Criticality of energy materials, substitution of critical elements – Societies: Energy demand and future development – Requirements for the energy infrastructure 			
Course frequency and duration: winter term, 1 semester (winter)			
Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials			
Applicable to the following study programs: M. Sc. Advanced Materials, M. Sc. Chemistry, M. Sc. Sustainable Chemistry, M. Sc. Applied Physics, M. Sc. Physics			
Participation requirements: none			
Course format:	Contact hours	Preparation and follow-up work	
Lecture	30	60	
Seminar	30	60	
Total:	180		
Examination requirements: none			

Module examination:

- Written exam (90 - 120 min) or oral exam (20 - 40 min) or oral presentation (20 – 40 min)
- Repeat examination: Written exam (90 - 120 min) or oral exam (20 - 40 min) or oral presentation (20 – 40 min))

Course language: English**Examination language:** German or English

AdvMat-MM-03	Functional Soft Materials		6 CP
	Funktionelle weiche Materialien		
Core module	07 / Physics; 08 / Chemistry		2 nd semester
	First offered in summer 2026		
<p>Academic objectives:</p> <ul style="list-style-type: none"> – Students know the bond types and structural characteristics of the individual classes of soft materials on all length scales. They know the structure-property relationships and are familiar with the functional properties of soft materials. They understand the basics of molecular electronics and photochemistry. They know the basics of production, processing and recycling of the individual material classes. – They can apply their knowledge to select the appropriate material and manufacturing process for given application problems and adjust the microstructure to achieve the desired property profile. Students are able to understand and discuss current issues and results of organic-chemical materials research. – Students are able to competently discuss reactions to and from polymers. They can independently look up and critically evaluate specialist literature to solve a materials science problem and apply the acquired knowledge to solve new problems. 			
<p>Content:</p> <ul style="list-style-type: none"> – Polymer synthesis, mechanisms, reactions of polymers, transition metal-catalysed polymerisation – Characteristics and properties of polymers and other soft matter – Processing of organic materials – Organometallic chemistry for the formation of C-C bonds – Organofluorine chemistry – Properties and classification of polymers and other organic materials – Thermodynamics of polymer mixtures – Crystallisation, melting and glass transition – Polymer processing, polymer films, recycling – Fundamentals of molecular electronics and optical properties – Liquid crystals and OLEDs – Polymers as electrolytes – Investigation / analysis of polymers 			
Course frequency and duration: summer term, 1 semester			
Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials			
Applicable to the following study programs: M. Sc. Advanced Materials, M. Sc. Chemistry, M. Sc. Sustainable Chemistry, M. Sc. Applied Physics, M. Sc. Physics			
Participation requirements: none			
Course format:	Contact hours	Preparation and follow-up work	
Lecture	45	75	
Exercise	15	45	
Total:	180		

Examination requirements: none

Module examination:

- Written exam (90 - 120 min) or oral exam (20 - 40 min)
- Repeat examination: Written exam (90 - 120 min) or oral exam (20 - 40 min)

Course language: English

Examination language: German or English

AdvMat-MM-04	Functional Solid State Materials		6 CP
	Funktionale Festkörpermaterien		
Core module	07 / Physics; 08 / Chemistry		2 nd semester
	First offered in summer 2026		
<p>Academic objectives:</p> <ul style="list-style-type: none"> – Students are familiar with basic and advanced methods for synthesising and characterising modern solid-state materials. They are familiar with bond types and structural features of solid-state materials on all length scales. They know the structure-property relationships and are familiar with the mechanical and functional properties of the individual material classes. Students know the basic functioning of various modern electrical, electrochemical, photochemical and optical components. – Students are able to draw conclusions about the material properties of solids based on their structure. They can transfer advanced methods and concepts for describing the physical and chemical properties of solids to modern solid-state materials and present the results. They can apply their knowledge to select the appropriate material and the appropriate manufacturing process for given application problems and adjust the microstructure in such a way that the desired property profile is achieved. – They can independently look up and critically evaluate specialist literature to solve a materials science problem and apply the acquired knowledge to solve new problems. Students are able to understand and discuss current issues and results of solid-state materials research. 			
<p>Content:</p> <ul style="list-style-type: none"> – Advanced synthesis methods in solid state and materials chemistry – Introduction to sol-gel chemistry – Structure-property relationships of solids – Special and advanced material classes, e.g., ion-conductors, mixed conductors, superconductors, battery materials, perovskites, thermo-/electrochromic solids, special ceramics, multifunctional materials – Functionality of relevant electrical, optical and electrochemical devices, e.g., lasers, solar cells, transistors, (solid-state) batteries, fuel cells, etc. – Materials for future technologies 			
Course frequency and duration: summer term, 1 semester			
Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials			
Applicable to the following study programs: M. Sc. Advanced Materials, M. Sc. Chemistry, M. Sc. Sustainable Chemistry, M. Sc. Applied Physics, M. Sc. Physics			
Participation requirements: none			
Course format:	Contact hours	Preparation and follow-up work	
Lecture	60	60	
Seminar	15	45	
Total:	180		
Examination requirements: none			

Module examination:

- Written exam (90 - 120 min) or oral exam (20 - 40 min)
- Repeat examination: Written exam (90 - 120 min) or oral exam (20 - 40 min)

Course language: English**Examination language:** German or English

AdvMat-MM-05	Team Module Advanced Materials		3 CP
	Teammodul Advanced Materials		
Optional module	07 / Physics; 08 / Chemistry		from 1 st semester
	First offered in winter 2025/26		
Academic objectives: The students <ul style="list-style-type: none"> – can support the research work on a project in a working group, – know the procedure for working on an experimental or theoretical task, – can explain their own work in a wider context and present the obtained results concisely. 			
Content: Implementation of an internship in one of the working groups of the physics or chemistry institutes involved in the degree programme.			
Course frequency and duration: summer/winter term, 1 semester			
Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials			
Applicable to the following study programs: M. Sc. Advanced Materials			
Participation requirements: Modules from semesters 1 and 2 of the degree programme passed			
Course format:	Contact hours	Preparation and follow-up work	
Select topic, discussion	15	10	
Familiarisation with the topic, processing of the results	45	20	
Total:	90		
Examination requirements: none			
Module examination: <ul style="list-style-type: none"> – oral presentation (10 min) – Repeat examination: Repetition of the oral presentation within four weeks 			
Course and examination language: German or English for the oral presentation, at the request of the student to the supervising teacher			

AdvMat-MM-06	Methods Module Advanced Materials		6 CP
	Methodenmodul Advanced Materials		
Optional module	07 / Physics; 08 / Chemistry		from 1 st semester
	First offered in winter 2025/26		
<p>Academic objectives: The students</p> <ul style="list-style-type: none"> – have independently deepened their knowledge of a materials science method (theoretical basics, implementation, etc.), – can use the method to independently answer a scientific question, – can explain their own work in a wider context and present the obtained results concisely. 			
<p>Content: Deepening knowledge and utilisation of a material science method to answer a current materials science question in one of the working groups of the Physics or Chemistry Institutes involved in the degree programme.</p>			
<p>Course frequency and duration: summer/winter term, 1 semester</p>			
<p>Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials</p>			
<p>Applicable to the following study programs: M. Sc. Advanced Materials</p>			
<p>Participation requirements: Modules from semesters 1 and 2 of the degree programme passed</p>			
Course format:	Contact hours	Preparation and follow-up work	
Development of a work programme, discussion	20	20	
Practical execution of the work programme with processing of the results	100	40	
Total:	180		
<p>Examination requirements: none</p>			
<p>Module examination:</p> <ul style="list-style-type: none"> – Report (10 – 20 pages) and oral presentation (10 min) – Repeat examination: Revision of the report and repetition of the oral presentation within four weeks – Calculation of module grade: 80 % report; 20 % oral presentation 			
<p>Course and examination language: German or English for report and presentation, at the request of the student to the supervising teacher</p>			

AdvMat-MM-07	Lab Module Advanced Materials		9 CP
	Labormodul Advanced Materials		
Optional module	07 / Physics; 08 / Chemistry		from 1 st semester
	First offered in winter 2026/27		
<p>Academic objectives: The students have acquired the ability to</p> <ul style="list-style-type: none"> – familiarise themselves independently with the materials science aspects of a subtask in current research and development, – independently acquire the basic materials science knowledge required to solve a subtask (databases, literature research, etc.), – explain their own work in a wider context and present the obtained results concisely. 			
<p>Content: Completion of a project with materials science content as part of current research work on a materials science topic in one of the working groups of the Physics or Chemistry Institutes involved in the degree programme.</p>			
<p>Course frequency and duration: summer/winter term, 1 semester</p>			
<p>Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials</p>			
<p>Applicable to the following study programs: M. Sc. Advanced Materials</p>			
<p>Participation requirements: Modules from semesters 1 and 2 of the degree programme passed</p>			
Course format:	Contact hours	Preparation and follow-up work	
Development of a work programme, discussion	30	30	
Practical execution of the work programme with processing of the results	160	50	
Total:	270		
<p>Examination requirements: none</p>			
<p>Module examination:</p> <ul style="list-style-type: none"> – Report (15 – 30 pages; if more pages are written voluntarily, these are part of the examination performance to be assessed) and oral presentation (20 – 30 min) – Repeat examination: Revision of the report and repetition of the oral presentation within four weeks – Calculation of module grade: 80 % report; 20 % presentation 			
<p>Course and examination language: German or English for report and presentation, at the request of the student to the supervising teacher</p>			

AdvMat-MM-08	Research Module		12 CP
	Forschungsmodul		
Core module	07 / Physics; 08 / Chemistry		3 rd semester
	First offered in winter 2025/26		
<p>Academic objectives: The students have the ability, especially with regard to the research field in which they are aiming to write their Master's thesis, in the working group of the first supervisor,</p> <ul style="list-style-type: none"> – to familiarise themselves independently with the contexts of the chosen sub-area from current research and development, – to independently acquire the basic knowledge of materials science required to solve a sub-task (databases, literature research, etc.), – to independently operate larger experimental apparatus or programmes to solve this subtask. 			
<p>Content: Completion of a project within the framework of current research work on a topic in materials science in the working group in which the Master's thesis is to be written.</p>			
<p>Course frequency and duration: summer/winter term, 1 semester</p>			
<p>Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials</p>			
<p>Applicable to the following study programs: M. Sc. Advanced Materials</p>			
<p>Participation requirements: Modules from semesters 1 and 2 of the degree programme passed</p>			
Course format:	Contact hours	Preparation and follow-up work	
Development of a programme, discussion	30	30	
Practical execution of the work programme with processing of the results	210	90	
Total:	360		
<p>Examination requirements: subproject passed</p>			
<p>Module examination:</p> <ul style="list-style-type: none"> – Report (20 – 40 pages; if more pages are written voluntarily, these are part of the examination performance to be assessed) and oral presentation (20 – 30 min) – Repeat examination: Revision of the report and repetition of the oral presentation within four weeks – Calculation of module grade: 80 % report; 20 % oral presentation 			
<p>Course and examination language: German or English for report and presentation, at the request of the student to the supervising teacher</p>			

AdvMat--MM 09	Master's Thesis		30 CP
	Master-Thesis		
Core module	07 / Physics; 08 / Chemistry		4 th semester
	First offered in summer 2027		
Academic objectives: Students can independently carry out a scientific project limited in time and scope, write it down and defend it in a discussion.			
Content: <ul style="list-style-type: none"> – Realisation of a research project – Evaluation and preparation of the results – Writing a scientific thesis on the Master's thesis project and the results obtained – Presentation as part of a colloquium 			
Course frequency and duration: summer/winter term, 1 semester			
Professorship or position responsible for module: Chair of the Examination Board M. Sc. Advanced Materials			
Applicable to the following study programs: M.Sc. Advanced Materials			
Participation requirements: Modules from semesters 1, 2 and 3 of the degree programme passed according to § 10 (2)			
Course format:	Contact hours	Preparation and follow-up work	
Instruction of independent scientific work	780	120	
Total	900		
Examination requirements: none			
Module examination: <ul style="list-style-type: none"> – Thesis (30 – 60 pages; if more pages are written voluntarily, these are part of the examination performance to be assessed) and colloquium (20 – 40 min) – Repeat examination: In the case of a failed thesis: rewriting according to § 21 AIB – Calculation of module grade: Thesis (70 %) and Colloquium (30 %). No compensation is possible; each part of the module examination must be passed. 			
Course and examination language: German or English other language upon request in accordance with § 21 para. 3 sentence 2 AIB. The supervisor may specify the language in which the thesis is to be written in justified cases, e.g. within the framework of double degree agreements.			

AdvMat-EM-01	3D Imaging Methods in Materials and Natural Sciences		6 CP
	Bildgebende 3D Analytik in Material- und Naturwissenschaften		
Optional module	07 / Physics; 08 / Chemistry		from 1 st semester
	First offered in winter 2025/26		
<p>Academic objectives:</p> <ul style="list-style-type: none"> – Students have an overview of the main methods for 3D analysis of inorganic, organic and biological solid materials and their significance for materials and natural sciences. They know how the methods work and their areas of application and understand their potential for answering complex questions. – Students are able to select suitable methods for specific analytical questions and justify their application. They have practical skills in handling 3D analytical equipment and can record, analyse and interpret experimental data. One of the techniques was deepened in a practical part. – Students have the ability to combine physical and chemical knowledge in order to work independently on analytical issues (professional competence). They have deepened their methodological competence by independently working on analytical questions and critically evaluating scientific literature. In addition, they have trained their problem-solving and decision-making skills by applying the methods to practical issues. 			
<p>Content:</p> <ul style="list-style-type: none"> – Introduction to 3D analytical methods for analysing solid samples – Selected imaging techniques (e.g., confocal microscopy, X-ray tomography, ion beam-based methods such as secondary ion mass spectrometry) – Fundamentals of vacuum technology – Fundamentals of the physical chemistry of solid surfaces – Introduction to statistical data analysis – Practice-oriented applications on equipment at the Centre for Materials Research – Processing analytical problems (measurement, data evaluation, solution) 			
Course frequency and duration: summer/winter term, 1 semester			
Professorship or position responsible for module: Professorship of Physical Chemistry, Professorship of Materials Science			
Applicable to the following study programs: B. Sc. and M. Sc. Advanced Materials, B. Sc. and M. Sc. Chemistry, M. Sc. Sustainable Chemistry, B. Sc. and M. Sc. Applied Physics, B. Sc. and M. Sc. Physics, B. Sc. and M. Sc. Biologie			
Participation requirements: none			
Course format:	Contact hours	Preparation and follow-up work	
Lecture	30	45	
Seminar	10	25	
Practice	20	40	

Excursion	5	5
Total:	180	
Examination requirements: none		
Module examination: <ul style="list-style-type: none">– oral presentation in the seminar (20 – 30 min) and report on the practice (10-15 pages, processing time: 2-3 weeks)– oral presentation (50 %) and report (50 %); if more pages are written voluntarily, these are part of the examination performance to be assessed		
Course language: English Examination language: German or English for report and presentation, at the request of the student to the supervising teacher		
* apl. Prof. Dr. M. Rohnke, Prof. Dr. A. Henss		

Annex 3: Specialisations

The modules of the specialisations can be found in the Special Regulations of the Master's Programme in Physics of Faculty 07 – Mathematics and Computer Science, Physics and Geography – of Justus Liebig University, of the Master's Programme Applied Physics of Faculty 07 – Mathematics and Computer Science, Physics and Geography – of Justus Liebig University, of the Master's Programme Chemistry of Faculty 08 – Biology and Chemistry – of Justus Liebig University a of the Master's Programme Sustainable Chemistry of Faculty 08 – Biology and Chemistry – of Justus Liebig University in the respective valid version as well as Annex 2 of the present special regulations. The respective module is studied in accordance with the provisions of the special regulations mentioned in sentence 1.

Possible specialisations are:

Specialisation „Electrochemical materials science“ (MEM)

Recommended previous Knowledge: Bachelor's degree in Chemistry/Physics/Material Science with basic knowledge of general chemistry; for Chemistry-MW31 Colloid Chemistry: Electrochemistry MCG1 passed

Core modules						
Module code	Module title	CP	Winter/Summer	Compulsory / elective	Language	Module Description
Chemie-MCG1	Electrochemistry – From Basics to Application	6	Wi	compulsory	English	M. Sc. Chemistry (Link)
Chemie-MW14	Electrochemistry II -Electrochemistry and Interfaces	6	Su	compulsory (alternative: Chemie-MW31)	English	M. Sc. Chemistry (Link)
Chemie-W34	Colloid Chemistry	6	Su	compulsory (alternative: Chemie-MW14)	English	M. Sc. Chemistry (Link)
AdvMat-MM-05	Team module Advanced Materials	3	Su/Wi	elective	English	M. Sc. Advanced Materials
AdvMat-MM-06	Methods module Advanced Materials	6	Su/Wi	elective	English	M. Sc. Advanced Materials
AdvMat-MM-07	Lab-Module Advanced Materials	9	Su/Wi	elective	English	M. Sc. Advanced Materials

Specialisation „High performance materials“ (MHM)

Recommended previous Knowledge: Bachelor's degree in Chemistry/Physics/Material Science with basic knowledge of solid-state physics

Core modules						
Module code	Module title	CP	Winter/Summer	Compulsory / elective	Language	Module Description
07-MP-G6	Semiconductor Physics	9	So	Compulsory	English	M. Sc. Physics (Link)
NN	Physics of Semiconductor Devices	6	Wi	Compulsory	English	M. Sc. Applied Physics (Link)

AdvMat-MM-05	Team module Advanced Materials	3	Su/Wi	Elective	English	M. Sc. Advanced Materials
AdvMat-MM-06	Methods module Advanced Materials	6	Su/Wi	Elective	English	M. Sc. Advanced Materials
AdvMat-MM-07	Lab-Module Advanced Materials	9	Su/Wi	Elective	English	M. Sc. Advanced Materials

Specialisation „Materials analysis“ (MAM)

Recommended previous Knowledge: Bachelor's degree in Chemistry/Physics/Material Science with basic knowledge in Chemistry and Physics

Core modules						
Module code	Module title	CP	Winter/Summer	Compulsory / elective	Language	Module Description
07-MP-E9	Surface Analysis	6	Su	Compulsory	German or English	M. Sc. Physics (Link)
07-MP-G5	Surface and Interface Physics	9	Wi	Compulsory (alternative: Chemie-MP6)	German or English	M. Sc. Physics (Link)
Chemie-MP6	Analytical Methods for Solids	6	Su	Compulsory (alternative: 07-MP-G5)	German or English	M. Sc. Chemistry (Link)
AdvMat-MM-05	Team module Advanced Materials	3	Su	Elective	English	M. Sc. Advanced Materials
AdvMat-MM-06	Methods module Advanced Materials	6	Su/Wi	Elective	English	M. Sc. Advanced Materials
AdvMat-MM-07	Lab-Module Advanced Materials	9	Su/Wi	Elective	English	M. Sc. Advanced Materials

Specialisation „Theoretical materials science“ (MTM)

Recommended previous Knowledge: Bachelor's degree in Chemistry/Physics/Material Science with basic knowledge of quantum mechanics

Core modules						
Module code	Module title	CP	Winter/Summer	Compulsory / elective	Language	Module Description
07-MP-G4	Theoretical solid state physics	9	Wi	Compulsory (alternative: 07-MP-P1)	German or English	M. Sc. Physics (Link)
07-MP-P1	Advanced Quantum Mechanics	9	Wi	Compulsory (alternative: 07-MP-G4)	German or English	M. Sc. Physics (Link)
Chemie-MP1	Theoretical Chemistry and Computational Chemistry	6	Wi	Compulsory	German	M. Sc. Chemistry (Link)
AdvMat-MM-05	Team module Advanced Materials	3	Su/Wi	Elective	English	M. Sc. Advanced Materials

AdvMat-MM-06	Methods module Advanced Materials	6	Su/Wi	Elective	English	M. Sc. Advanced Materials
AdvMat-MM-07	Lab-Module Advanced Materials	9	Su/Wi	Elective	English	M. Sc. Advanced Materials

Specialisation „Sustainable inorganic materials“ (NAM)

Recommended previous Knowledge: Bachelor's degree in Chemistry/Physics/Material Science with basic knowledge of inorganic or solid-state chemistry

Core modules						
Module code	Module title	CP	Winter/Summer	Compulsory / elective	Language	Module Description
SuC-MC4	Sustainable inorganic chemistry: criticality, synthesis, substitution and recovery	6	Su	Compulsory	English	M. Sc. Sustainable Chemistry (Link)
SuC-MC11	Chemical Concepts of Sustainability	6	Wi	Compulsory	English	M. Sc. Sustainable Chemistry (Link)
AdvMat-MM-05	Team module Advanced Materials	3	Su/Wi	Elective	English	M. Sc. Advanced Materials
AdvMat-MM-06	Methods module Advanced Materials	6	Su/Wi	Elective	English	M. Sc. Advanced Materials
AdvMat-MM-07	Lab-Module Advanced Materials	9	Su/Wi	Elective	English	M. Sc. Advanced Materials

Specialisation „Organic materials synthesis“ (OMS)

Recommended previous Knowledge: Bachelor's degree in Chemistry/Physics/Material Science with basic knowledge of organic chemistry

Core modules						
Module code	Module title	CP	Winter/Summer	Compulsory / elective	Language	Module Description
SuC-MC3	Sustainability of Organic Reactions: Principles of Green Chemistry	6	Su	Compulsory, if SuC-MC11 passed	English	M. Sc. Sustainable Chemistry (Link)
SuC-MC11	Chemical Concepts of Sustainability	6	Wi	Compulsory	English	M. Sc. Sustainable Chemistry (Link)
SuC-MC12	Organic Synthesis for Materials Sciences	6	Wi	Compulsory, if SuC-MC11 passed	English	M. Sc. Sustainable Chemistry (Link)
SuC-MC13	Practical course organic synthesis for Materials Sciences	6	Wi	Compulsory, if SuC-MC11, SuC-MC3 and SuC-MC12 passed	English	M. Sc. Sustainable Chemistry (Link)

Optional extension modules for all specialisations:

Extension modules						
Module code	Module title	CP	Win- ter/Sum- mer	compul- sory/ elec- tive	Language	Module description
07-MP-E7	Transport Phenomena in Solids	6	Su	elective	German or English	M. Sc. Physics (Link)
NN	Epitaxie	6	Wi	elective	German or English	M. Sc. Applied Physics (Link)
07-MAP-14	Mess- und Rechentechniken	6	Wi	elective	German or English	M. Sc. Applied Physics (Link)
07-MAP-07	Grundlagen der Mikro- und Nanostrukturierung	6	Su	elective	German or English	M. Sc. Applied Physics (Link)
07-MAP-19	Quantenstrukturen	6	Wi	elective	German or English	M. Sc. Applied Physics (Link)
07-MAP-17	Plasma Physics	6	Wi	elective	English	M. Sc. Applied Physics (Link)
07-MAP-20	Quantenmechanischer Hintergrund makroskopischer Eigenschaften von Materie	6	Wi	Elective	German or English	M. Sc. Applied Physics (Link)
07-MAP-21	Spektroskopie	6	Su	elective	German or English	M. Sc. Applied Physics (Link)
Chemie-MMC1	Thermoelectric Materials	6	Wi/Su	elective	German or English	M. Sc. Chemistry (Link)
Chemie-MMC5	Sustainable Chemistry of Inorganic Materials	6	Wi	elective	German or English	M. Sc. Chemistry (Link)
Chemie-W17	Data Science	6	Wi/Su	elective	German or English	M. Sc. Chemistry (Link)
AdvMat-EM-01	3D imaging methods in materials and natural sciences	6	tba	elective	German or English	M. Sc. Advanced Materials
Chemie-W21	Molecular symmetry and spectroscopy	6	Wi/Su	elective	German or English	M. Sc. Chemistry (Link)
SuC-MC1	Introduction to Sustainability	6	Wi	elective	German or English	M. Sc. Sustainable Chemistry (Link)
SuC-MC11	Chemical Concepts of Sustainability	6	Wi	elective	English	M. Sc. Sustainable Chemistry (Link)
Chemie-MP6	Analytical Methods for Solids	6	Su	elective	German or English	M. Sc. Chemistry (Link)