

**Study regulations
of the Faculty of Chemistry and Earth Sciences
for the study programme 'Chemistry of Materials' seeking the degree 'Master of Science'
of 23 February 2023**

Pursuant to the section 3 subsection 1 in conjunction with the section 38 section 3 of the Thuringian Higher Education Act (*Thüringer Hochschulgesetz, ThürHG*) of 10 Mai 2018 (published in the journal of legal notices of the Free State of Thuringia, GVBl p. 483, in German), last amended by Article 1 of the Act of 7 December 2022 (GVBl, p. 437), the Friedrich Schiller University Jena issues the following Study Regulations for the study programme Master of Science Chemistry of Materials. The Council of the Faculty of Chemistry and Earth Sciences adopted the Regulations on 19 October 2022. The Senate of the Friedrich Schiller University Jena approved the respective examination regulations on 21 February 2023. The President of the Friedrich Schiller University authorized the Regulations on 23 February 2023.

Content

- § 1 Scope and application
- § 2 Admission requirements
- § 3 Duration of studies, beginning of the study programme
- § 4 Objectives of the study programme
- § 5 Structure of the study programme
- § 6 Scope and content of the study programme
- § 7 Assessed and non-assessed coursework and examinations
- § 8 Admission to individual modules
- § 9 Subject-specific academic advisory service
- § 10 Evaluation of courses offered and quality control
- § 11 Equal opportunity clause
- § 12 Coming into effect, expiry, transitional provisions

§ 1 Scope and application

These Study Regulations establish objectives, content, and structure of the consecutive research-oriented study programme 'Chemistry of Materials' leading to a degree 'Master of Science' (abbreviation: MSc) offered by the Faculty of Chemistry and Earth Sciences at the Friedrich Schiller University Jena. It is applicable in conjunction with the corresponding examination regulations (in the following 'Examination Regulations') in their applicable version, with the study plan, and module catalogue adopted by the Council.

§ 2 Admission requirements

(1) Prerequisite for admission to the Master of Science in Chemistry of Materials is a qualified first university degree (Bachelor, Diplom) in one of the study programmes in chemistry, chemical engineering or physics and study achievements of at least 180 credit points (LP) according to the European Credit Transfer and Accumulation System (ECTS) or an university degree equivalent to this degree with an overall final grade "1.9" ('good'/'gut') or better.

(2) Applicants of related study programmes, in particular in materials science, are granted admission if their degree is professionally equivalent to the above. Generally, a degree is equivalent if the applicant acquired at least 60 ECTS (European Credit Transfer System) in physics and chemistry within the previous study programme, excluding a final thesis.

(3) If a final grade is not yet available for the first university degree qualifying the applicant to work in his/her profession, the applicant may be provisionally admitted to the study programme on the basis of his/her performance and achievements documented at the time of application.

(4) Applicants from related disciplines or applicants who do not meet the requirements as defined in the subclause of the subsection 1 and in the subsection 2, whose degree is graded lower than 1.9 but at least 2.5, may be admitted to the study programme if their application illustrates particular aptitude for the Master of Science in Chemistry of Materials and therefore an equivalence. For this purpose, the letter of motivation, curriculum vitae, previous practical experience and practical relevance of the previous education as well as professional and personal commitment are evaluated. The decision on the professional equivalence and recognition of university degrees is made by the selection committee of the Master's programme Chemistry of Materials. In cases of doubt, a selection interview may be held. Admission with conditions regarding qualifications to be acquired subsequently is possible in exceptional cases.

(5) Because all courses of this study programme are exclusively offered in English, proficiency in English (level B2) is required to the study programme. In deviation from section 2 subsection 3 of the matriculation regulations of the Friedrich Schuller University of Jena, Proficiency in German (level 1 of the German Language Test for Admission to Higher Education 'DSH') is strongly recommended.

(6) The application for admission together with the following application documents—if requested in authenticated copy—has to be submitted by the stipulated deadline:

(a) proof of successful completion of the first university degree or detailed documentation of the academic achievements in the first degree programme (at least 150 ECTS) completed until the date of application

(b) a letter of application in English in which the study-related knowledge, skills, and scientific interests are outlined

(c) a tabular overview of the activities and experiences relevant to the study programme, and proof of academic achievements, e.g. academic or scientific papers, publications, research work, research periods, and study periods spent abroad

(d) where applicable, proof of any relevant work experience, e.g. occupation in the industry

(e) language certificates in English at the level B2 according to the Common European Framework of Reference for Languages.

§ 3 Duration of studies, beginning of the study programme

(1) The standard duration of study is two academic years, including the time required for the master's examination. The University ensures that it is possible to complete the study programme in the standard duration of study. Part-time studies are possible. Particulars are stated in the Matriculation Regulations (*Immatrikulationsordnung*) of the Friedrich Schiller University Jena.

(2) The study programme Chemistry of Materials leading to a degree 'Master of Science' begins in the winter semester.

§ 4 Objectives of the study programme

(1) The objective of the master's programme leading to a second degree qualifying graduates to work in the field of chemistry of materials is to prepare students for science-based careers in chemistry of materials, and to provide the foundation for further training programmes within and outside of academia through specialized academic training.

(2) Students broaden and improve their knowledge in the theories, methodologies, and systematics in chemistry, physics, and materials sciences; they acquire the necessary

experimental and theoretical competencies required for scientific work in chemistry of materials, and they undergo special training in selected areas of microscopy, spectroscopy, of multi-scale simulation, and computer-assisted materials sciences.

(3) Upon successful completion of the study programme, graduates have acquired the specialist and interdisciplinary key skills and qualifications (e.g. social skills, ability to work in a team, German skills) required for research-oriented, and science-based careers. They learn to develop and implement subject-specific research concepts. They prove to be able to critically evaluate scientific data, to think and act based on an interdisciplinary approach, and to analyse complex questions also across disciplines, to interpret findings correctly, and to find solutions. They have acquired the ability to reflect on their own academic work as well as methodological and social skills that allow them to apply knowledge flexibly and are capable of cooperation and teamwork.

§ 5 Structure of the study programme

(1) The study programme is composed of modules. Each module may comprise different forms of instruction and learning, including but not limited to lectures, seminars, practical exercises, presentations, laboratory work, independent study periods, as well as examinations. Each module is a learning and examination unit, the results (grades) of which will be documented on the Grade Certificate. Generally, a module takes one semester or one study year.

(2) The study programme consists of the compulsory and elective modules of overall 90 ECTS for the acquisition of subject-specific, interdisciplinary and methodological competences. The programme is divided into:

- Compulsory modules (65 LP)
- Required elective modules (25 LP), which are divided into the areas of "required specialisation" (comprising modules with a volume of 10 LP) and "individual specialisation" (comprising modules with a volume of 15 LP).

(3) The Master's degree is completed with the Master's thesis, which must be defended with a specialist lecture in the last two months of the Master's thesis (together 30 LP).

(4) Throughout the Master's programme, the teaching of key qualifications is integrated into the existing forms of teaching, with a focus on the areas of scientific working techniques, scientific research and the critical analysis of one's own and other people's data. Scientific results are trained with the help of modern media and media-supported presentation. Social competence and the ability to work in a team are strengthened.

(5) Assessed and non-assessed coursework, including examinations, that was completed or achieved during a study-related stay abroad, shall be recognized if there are no essential differences in terms of the competences which are to be acquired at the Friedrich Schiller University Jena. Students are recommended to conclude a Learning Agreement with the Chairperson of the Examinations Office in which it shall be documented which academic achievements can be recognized.

§ 6 Scope and content of the study programme

(1) To successfully complete the study programme, students must acquire a total of 120 ECTS. Per semester, a total of 30 ECTS has to be earned. Pursuant to the stipulations of the European Credit Transfer and Accumulation System (ECTS), a workload of a total of 30 hours of in-class and independent studying is assumed for every one credit point.

(2) The modules of the first semester serve to deepen the language skills as well as to compensate for previous knowledge. They create a basis for scientific work in the field of

materials chemistry and physics and teach practical laboratory methods for the synthesis and characterisation of materials.

(3) In the second and third semesters, knowledge and skills in the field of materials chemistry are deepened. In the compulsory area, modules introduce material synthesis and structural aspects of functional materials and nanomaterials. In the required elective area "required specialisation" (10 LP), students choose either the modules on computer-aided materials chemistry or the modules on experimental-analytical methods for characterising the chemical and electronic structure as well as the physical properties of materials. The two modules not completed are still available for completion in the area of "individual specialisation" (15 LP). The other available elective modules can be found in the module catalogue. In addition, a research internship (15 LP) is carried out in the third semester, in which knowledge and practical skills are learned and deepened as an introduction to scientific work, which are required to carry out the Master's thesis.

§ 7 Assessed and non-assessed coursework and examinations

(1) The type and scope of assessed and non-assessed coursework, and that of examinations are defined in the Examination Regulations. The types of examination in the individual modules and the weighting of partial examinations are specified in the module specifications in the module catalogue.

(2) The module coordinator sets the date of the examinations. In addition, he can determine the scope of assessed course examinations within the frame of the Examination Regulations. Examination dates and other specifications for each module are announced at the beginning of each module.

§ 8 Admission to individual modules

Attention has to be paid to the admission requirements of the following modules:

Module code	Requirements include
MMC P003	at least 50 ECTS in the study programme Chemistry of Materials

§ 9 Subject-specific academic advisory service

(1) The module coordinators consult about the modules, respectively. The Examinations Office of the Faculty of Chemical and Earth Sciences advises students, if necessary, in particular on study content, specialisation options, selection and enrolment of courses, creditability of previously acquired study achievements in the case of a change of subject and/or place of study and examination matters, so that they can organise their studies in a targeted manner towards the completion of their degree and finish within the standard period of study.

(2) Non-subject specific study problems are mediated by the Central Academic Advisory Service of the Friedrich Schiller University Jena.

§ 10 Evaluation of courses offered and quality control

(1) The Faculty of Chemistry and Earth Sciences is committed to constantly modernizing and improving the courses offered. The Examinations Committee evaluates the curriculum and the range of modules at regular intervals, taking into account the development of the subject and professional requirements. Subject-related surveys are evaluated in due consideration of the developments in the specific field and of professional requirements. Changes to the module

catalogue require a decision by the Faculty Council. They will be announced before the start of the academic year.

(2) The Examinations Committee documents and analyses teaching performance and success in the various courses offered regarding performance developments, and the organizational set-up of the programme.

(3) In addition, in cooperation with the university project Teaching Evaluation, it evaluates the experiences with the master's programme, particularly with regard to its approval by the students and professionals in the field, to study conditions, and the range of specialist and interdisciplinary qualification options, and discusses them with the teaching staff concerned.

§ 11 Equal opportunity clause

All titles and functions in (the German version of) these Regulations equally refer to woman, men and people who do not identify with any of these genders.

§ 12 Coming into effect expiry, transitional provisions

(1) These Study Regulations come into effect on 1 October 2023 following their announcement in the journal of legal notices of the Friedrich Schiller University (*Verkündungsblatt der Friedrich-Schiller-Universität*). It applies to all students who commence their studies in the Master's degree program in Chemistry of Materials from the winter semester of 2023/24 onwards.

(2) At the same time, the Study Regulations of the Faculty of Chemistry and Earth Science of the Friedrich Schiller University Jena in the degree programme Chemistry of Materials with the degree of Master of Science dated February 23, 2023 (*Verkündungsblatt der Friedrich Schiller Universität Jena, No. 2/2018, p. 58*) expire. However, it continues to apply to all students who enrolled in the master programme of Chemistry of Materials prior to the entry into force of this regulation.

Jena, 23 February 2023

Prof. Dr Walter Rosenthal
President of the Friedrich Schiller University Jena