

University of Leipzig
Faculty for Chemistry and Mineralogy

Examination regulations for the joint international and English-taught Master's program with the title Advanced Spectroscopy in Chemistry leading to the degree Master of Science (M.Sc.) at the University of Leipzig

From November, 2022

On the basis of the Act on the Freedom of Universities in the Free State of Saxony (Saxon Higher Education Freedom Act - SächsHSFG) in the version published on 16. Mai 2018 (SächsGVBl. p. 3), last amended 01. Juni 2022 (SächsGVBl. S. 381), the University of Leipzig issued the following examination regulations of the international master program “Advanced Chemistry in Spectroscopy” with the graduation Master of Science (M.Sc.).

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I. General regulations

§ 1

Purpose of the Master's examination

The Master's examination determines whether and to what extent the following objectives of the research-oriented degree program have been achieved by the examination candidate:

1. Acquisition of the basic and in-depth professional knowledge necessary for the transition into professional life.
2. Application of acquired knowledge and skills through independent work on a more extensive theoretical and/or experimental problem with a subject-specific focus.

§ 2

Standard period of study

The standard period of study is 4 semesters. It includes up to three semesters of study abroad, the module examinations and the Master's thesis.

§ 3

Exam structure

- (1) The Master's examination consists of the module examinations of the Master's program and the Master's thesis.
- (2) The module examination usually consists of one, but not more than two performance assessments. The performance assessments of a module are carried out during the course of study. The examination table (appendix) indicates particular assignment of the performance assessments to the modules, the weighting of the performance assessments within a module, as well as the prerequisites for examinations to be fulfilled.
- (3) Examinations at the University of Lille are subject to the regulations in use there.

§ 4

Deadlines

- (1) The Master's examination should be taken within the standard period of study. A Master's examination that has not been taken within 4 semesters after completion of the standard period of study is considered as failed.
- (2) A failed module examination should be repeated once within one year after completion of the first examination attempt. The period begins with the announcement of the results. After expiry of this period, the repeat attempt is considered as failed. The first repeat examination can take place in the same semester, but no earlier than 14 days after the announcement of the result. A second re-examination must be taken at the next possible examination date. Participation in second re-examination also requires a written application to the examination board.
- (3) In the case of part-time study, the deadlines according to paragraph 1 and paragraph 2, sentence 1 are extended according to the proportion of

part-time study; further details are specified in the inter-faculty regulations governing part-time study in the currently valid version.

- (4) The dates for the examinations and performance assessments are usually announced electronically. The announcement is usually made 4 weeks before the respective examination date.
- (5) The announcement of the test result is usually done electronically.
- (6) Absence for which the student is not responsible are not to be taken into account when calculating the deadlines. This also applies to periods of maternity leave and parental leave.

§ 5

General module admission requirements

- (1) The Master's examination in the international Master's program Advanced Spectroscopy in Chemistry can only be taken by those who
 1. is enrolled in the Master's program Advanced Spectroscopy in Chemistry at the University of Leipzig and
 2. has completed the examination prerequisites specified in the appendix to the examination regulations.
- (2) Those students, who has not received a notification that their participation in the examination is refused according to paragraph 4 up to one week before the assignment is given or before the examination performance is taken, are allowed to take the module exam. Admission to the Master's thesis is considered to have been granted by the issuing of the topic.
- (3) The registration for the module is at the same time the registration for the module examination. Deregistration from the module and the associated deregistration from the module examination can be made at the latest 4 weeks before the end of the lecture period by written notification to the responsible examination office. In case of a timely deregistration from the module, all achievements already obtained in the module are considered as not completed. Afterwards, withdrawal from ex-aminations is only possible for important reasons and requires the writ-ten notice and the written approval of the examination board.
- (4) Admission to the module examinations and the Master's thesis may only be refused if

1. the requirements specified in paragraph 1 are not met,
2. the documents are incomplete or
3. the examination candidate has lost his/her entitlement to the examination in accordance with state law by missing the deadlines for registering or taking the respective examination.

Reasons for rejection must be provided.

§ 6

Pre-requisites for examinations

- (1) Prerequisite for examinations (study achievements, which are the technical prerequisite for admission to the module examination) are performed in the form of practical work and presentations and are assessed as "passed" or "failed".
- (2) The required examination prerequisites are regulated in the appendix to the examination regulations.
- (3) Internship performances usually consist of an antestat (preliminary knowledge assessment), the execution of the experiment, and a written protocol in which the experiments are documented and evaluated. Antestats last 15 to 30 minutes. The execution of the practical comprises the attendance times shown in the module description. The processing time of the written protocol with a discussion of the results is 6 weeks. Further subject-specific features will be communicated to the students for each practical course before registration for the module by means of a notice or electronically.
- (4) Presentations are to be prepared according to the issued topics. They will be presented in a presentation of about 20 minutes duration and 10 minutes discussion. The exact procedures will be communicated to the students before registering for the module.
- (5) Exercises must be completed and submitted in the required form. The processing time for the exercises is 2 weeks. The exact modalities will be communicated to the students before registration for the module.
- (6) In case of failure of a examination pre-requisite, it may be repeated twice within one semester. If the repeated attempts are also not passed, the module is considered as not taken.

§ 7

Performances assessments (examinations)

- (1) Performance assessments are to be conducted:
 1. orally (§ 8)
 2. through written examinations (§ 9) or
 3. through further performance assessments (§ 10).
- (2) Written examinations using the multiple-choice method are excluded.
- (3) If the examination candidate can verify that, due to disability or chronic illness, he/she is not able to complete all or part of the examination in the scheduled time or in compliance with other examination conditions, he/she will be permitted to complete the examination within an extended time or to complete equivalent examination work in another form. For this purpose, the presentation of a medical certificate and, in cases of doubt, a certificate from an official medical officer may be required. The same applies to other course work.

§ 7a

Compensation for disadvantages

- (1) If the examination candidate provides credible evidence that he/she.
 1. because of a handicap or chronic illness that requires proof of the of the performance to be examined is difficult, or
 2. during pregnancy, after childbirth or while breastfeeding, the candidate is unable to complete all or part of the examination in the time or in compliance with other examination modalities, the Examination Committee shall grant him/her an appropriate compensation for disadvantages upon application. For medical certificate and, in justified cases of doubt, a medical certificate from the medical certificate or, in cases of justified doubt, a medical certificate from a public health officer. In cases of No. 2, the credible proof can be provided by the certificate of a midwife or a midwife or a maternity nurse.
- (2) The application for compensation for disadvantages should be submitted no later than four weeks before the examination date/start of processing.
- (3) The decision of the Examination Committee is to be communicated to

the candidate without delay, as a rule at the latest one week before the examination date/the the start of the examination.

- (4) The same shall apply to coursework.

§ 8

Oral examinations

- (1) By means of oral examinations, the examination candidate should demonstrate that he/she is able to understand the context of the examination area and that he/she is able to integrate specific questions into this context. Furthermore, it is to be determined whether the examination candidate has a basic knowledge corresponding to the course of study.
- (2) Oral examinations are to be taken by several examiners (collegial examination) or by one examiner in the presence of an expert assessor (§ 18 para. 1 sentence 4) as a group or individual examination. A protocol shall be prepared on the progress of the examination, in which the essential subjects and results of the examination shall be recorded. In the case of a group examination, the grade shall be determined by the examiners; otherwise, the examiner shall hear the assessor before assigning the grade.
- (3) The duration of the oral examination performance is determined in the appendix to the examination regulations.
- (4) The result is to be announced to the examination candidate following the oral examination.

§ 9

Written exams

- (1) In the written examinations, the examination candidate should demonstrate that based on the required basic knowledge, he/she can solve tasks and work on topics in a limited time and with limited aids using the common methods of his/her subject. The examination candidate may be given topics to choose from.
- (2) The duration of the written examinations is usually 90 minutes.
- (3) Written examinations are usually graded by two examiners. The final

grade of the written exam is the arithmetic mean of the grades of the two assessments. The assessment procedure should not exceed a duration of 4 weeks.

§ 10

Further performance assessments

- (1) The further performance assessments include internships, presentations and portfolios.
- (2) Internship consists of carrying out the experiment, submitting a written report and giving a presentation. The execution of the internship usually takes 150 hours. The duration of the processing of the written protocol with a discussion of the results is 6 weeks. The duration of the presentation with a short discussion and defense of the results is usually 15 minutes. In the modules 13-121-0641 and 13-121-0642, internship performances consist of the actual execution of experiments (10 experiments) and a report. If so-called, antestats are included, the knowledge essential for performing the experiments must be demonstrated. As a rule, the results are discussed in final tests (abtestats). Antestats and abtestats usually last 15 minutes. Further subject-specific features are communicated to the students for each practical course in written form before the registration for the module.
- (3) Presentations are to be prepared according to the assigned topics. The duration of the talk is usually 30 minutes. The topics are presented in a presentation of about 20 minutes duration and 10 minutes discussion. The exact modalities will be communicated to the students at the beginning of the module.
- (4) Portfolios group various performances and are intended to reflect the various topics covered in the course and how students have worked through them. Examples of portfolio achievements: presentations, summaries of interactive online sessions, application outlines. The contents of the portfolio will be announced by the teacher at the beginning of the module.
- (5) For the evaluation of the further performance assessments § 8 para. 2, 4 and § 9 para. apply accordingly.

§ 11

Assessment of examination performances, generation and weighting of grades

- (1) The grade of the Master's examination is calculated from the arithmetic mean of the grades of the module examinations and the Master's thesis, weighted according to credit points. If the overall grade of the Master's examination is 1.2 or better, the grade "passed with distinction" will be awarded, provided that the colloquium according to § 18 para. 12 also corresponds to this performance.
- (2) The results of the performance assessments are combined into a module grade by the examination office. The grades for the individual performance assessments are determined by the respective examiners. For the evaluation of oral examination performances, § 8 para. 2 sentence 3 applies. The following grades are to be used for the evaluation of the performance in the examination:

1 = very good	= an outstanding performance
2 = good	= a performance that is significantly above the average requirements
3 = satisfactory	= a performance that meets average requirements
4 = sufficient	= a performance that, despite its shortcomings, still meets the requirements
5 = insufficient	= a performance that no longer meets the requirements due to significant shortcomings
- (3) For differentiated assessment of examination performance, individual grades may be raised or lowered by 0.3 to intermediate values; grades 0.7, 4.3, 4.7 and 5.3 are excluded.
- (4) If a module examination consists of several examinations, the module grade results from the arithmetic mean of the grades of the examinations, weighted according to the appendix to the examination regulations. A weighting of the individual examination performances is carried out by the formation of multiples. Individual examination performances of the module examination are in principle intercompensable. If the module examination is passed, the corresponding credit points are awarded and documented with the grades at the examination office.
- (5) When calculating the grade of the Master's examination, the grade of the performance assessments and the module grade, only the first decimal place after the comma is taken into account; all other places are deleted without rounding.

- (6) The module grade is:
- with an average up to and including 1.5 = very good
 - with an average from 1.6 to 2.5 inclusively = good
 - with an average from 2.6 to 3.5 inclusively = satisfactory
 - with an average from 3.6 to 4.0 inclusively = sufficient
 - with an average above 4.0 = not sufficient

§ 12

Unexcused Absence, Withdrawal, Deception, Breach of Regulation

- (1) A performance assessment is considered to be " not sufficient " (5.0) if the candidate misses an examination date that is obligatory for the candidate without an important reason or if the candidate withdraws from an examination without an important reason. § 5 para. 3 remains unaffected. Sentence 1 applies accordingly if a written examination performance or the Master's thesis is not completed within the specified processing time without a significant reason.
- (2) The reason asserted for the withdrawal or unexcused absence must be notified in written form without delay and must be credible. In the case of illness of the examination candidate, the submission of a medical certificate and, in cases of doubt, an official medical certificate may be required. As far as the compliance with deadlines for the initial registration for the examination, the repetition of examinations, the reasons for missing examinations and the compliance with processing times for examination papers are concerned, the illness of a family member who has to be cared for by him/her predominantly alone is equivalent to the illness of the examination candidate. If the reason is recognized, a new date will be scheduled. In this case, the performance assessment results already available are to be credited.
- (3) If the examination candidate attempts to influence the result of his/her examination performance by deception, by using sources without citation, by quoting without indication or by using unauthorized aids, the examination performance in question will be graded as "insufficient" (5.0). An examination candidate who disturbs the proper course of the examination can be excluded from continuing the examination by the respective examiner or supervisor; in this case, the examination performance will be graded as "not sufficient" (5.0).
- (4) In serious cases as defined in para. 3, the board of examiners may
1. declare the entire module examination failed or permanently failed,

2. exclude the examination candidate from taking further examinations.

The examination candidate must be given the opportunity to explain his/her position before the decision is made.

- (5) Incriminating decisions must be communicated to the examination candidate in writing without delay, reasons must be given, and the candidate must be provided with instructions on how to appeal.

§ 13

Pass and fail

- (1) The Master's examination is passed if the required module examinations of the master's examination have been passed and the master's thesis has been evaluated with "sufficient" (4.0) or better.
- (2) If the candidate has not passed the Master's examination, the candidate upon application and upon presentation of the relevant evidence will be issued a certificate that contains the academic and examination achievements and their grades and indicates that the Master's program has not been completed.
- (3) A module examination is passed if the module grade is "sufficient" (4.0) or better.
- (4) In deviation from § 11 para. 4, performance assessments specially marked in the appendix to the examination regulations must have been evaluated with "sufficient" (4.0) or better. These examination performances cannot themselves be compensated for in the case of a grade worse than "sufficient" (4.0), but must be taken into account to compensate for other examination performances in the module examination.
- (5) A performance assessment that has not been graded with "sufficient" (4.0) or better does not exclude the continuation of the module examination.
- (6) If the examination candidate has not passed a module examination or if the Master's thesis was graded worse than sufficient (4.0), the examination candidate will be informed of this in written form. Furthermore, he/she will be informed whether and, if so, to what extent and within what period the examination performance or the Master's thesis can be repeated.

§ 14

Repeating the module exams

- (1) It is not possible to repeat the entire Master's examination as defined in § 3 para. 1. If a module examination of a compulsory module is ultimately not passed, the Master's examination is also ultimately not passed. If a module examination in a compulsory elective module is not passed, the Master's examination is also permanently failed, unless the module is replaced in accordance with paragraph 3.
- (2) In the case of failure of a module examination, only performance assessments graded "insufficient" (5.0) may be repeated. In the case of § 12 para. 4 sentence 1 no. 1 var. 1, all examination performances of the module examination must be repeated. § 4 para. 2 remains unaffected.
- (3) If the module examination in a compulsory-elective module is ultimately not passed, this can be replaced by passing another compulsory elective module that can be taken.

§ 15

Recognition of study duration, study and examination achievements

- (1) Study achievements and examination achievements that have been completed at a university will be credited by the responsible examination board upon application, unless there are significant differences with regard to the competencies acquired. Students must submit the documents required for this purpose. In cases of crediting according to sentence 1, the corresponding study hours are to be credited.
- (2) Paragraph 1 applies accordingly to periods of study as well as coursework and examinations in state-recognized remote studies and other educational institutions.
- (3) Qualifications acquired outside the course of study are credited insofar as they correspond to parts of the course of study in terms of content and requirements and can thus replace them.
- (4) If study and examination achievements are credited, the grades - insofar as the grading systems are comparable - are to be adopted and included in the calculation of the overall grade. A marking of the accreditation in the certificate is permissible. In the case of incomparable grading

systems, the remark "passed" is included.

- (5) In case of denial of recognizing, the responsible examination board has to give reasons in written form.

§ 16

Examination board

- (1) The examination board is formed at the Faculty of Chemistry and Mineralogy.
- (2) The examination board consists of the chairperson, whose deputy and up to 5 additional members. Up to 4 members are appointed by the Faculty Council from the group of university teachers, up to 2 members from the group of academic staff and one member from the group of students. The student member is appointed in agreement with the student representatives in the Faculty Council. Furthermore, a substitute member is to be appointed for each member of the examination board from their group. The members of the examination board elect the chairperson and a deputy from among the university teachers. The university professors have the majority of the votes. The period of service in examination board for professors and staff members is 3 years, that of the students is one year.
- (3) The examination board ensures that the provisions of the examination regulations are observed and makes suggestions for reforming the examination and study regulations. The examination board has a quorum if the meeting has been properly convened and the majority of the members are present. The Examination Committee shall pass resolutions by a majority of the votes of those present. The student member does not participate in the determination of examination tasks.
- (4) The chairperson prepares and executes the decisions of the examination board. He/she reports to the Faculty Council on the activities of the Examination Board, in particular on the development of study periods and the distribution of grades. The examination board may delegate parts of its competences to its chairperson.
- (5) For examinations in interdisciplinary modules, the necessary decisions are made in consultation with the examination board responsible for the other subject.
- (6) The members of the examination board have the right to attend the sitting of examinations. The examiner must be notified of this no later

than 14 days before the examination.

- (7) The members of the examination board are subject to official secrecy. If they are not in public service, they must be sworn to secrecy by the chairperson.

§ 17

Examiners and assessors

- (1) Only professors and other persons authorized to conduct examinations who have been granted the authorization to teach in the subject areas to which the examination performance relates or who have been assigned the independent performance of teaching tasks shall be appointed as examiners. Insofar as this is appropriate according to the subject of the examination, an examiner may also be appointed who has the authority to teach independently only for a sub-area of an examination subject. In exceptional cases, teachers for special tasks as well as persons experienced in professional practice and training may also be appointed as examiners, provided that this is appropriate according to the nature of the university examination. Examiners and assessors must at least have the qualification to be assessed by the examination or an equivalent qualification.
- (2) The names of the examiners are announced to the examination candidate at least 4 weeks before the examination date. Justified deviations are possible and require the approval of the examination board.
- (3) For the examiners and assessors, § 16 para. 7 applies accordingly.

§ 18

Master's thesis

- (1) The Master's thesis should demonstrate that the examination candidate is able to work independently on a problem within his/her subject according to scientific methods within a given period of time. An analysis of the relevant state of research is expected; in the course of the thesis it must become clear what distinguishes the candidate's own approach and why it was chosen.

- (2) The Master's thesis is completed within the scope of 30 CP. The Master's thesis should be thematically related to a research-oriented focus.
- (3) The Master's thesis is supervised by a professor or another person authorized to conduct examinations according to state law, provided that they work at the University of Leipzig in a field relevant to the Master's program Advanced Spectroscopy in Chemistry. If the Master's thesis is to be carried out at an institution outside the university, the approval of the chairperson of the examination board is required.
- (4) The topic of the Master's thesis is issued upon application of the examination candidate via the examination board at the latest in the third semester at the end of the lecture period. The topic and date are to be noted in the records. The examination candidate may express wishes regarding the topic. The topic can only be returned once and only within two weeks of issue.
- (5) The Master's thesis may be started at the earliest after successful completion of the eight obligatory modules (40 CP), the experimental choice-obligatory module (10 CP) and at least seven choice-obligatory modules (35 CP). It must be started no later than four weeks after completion of all modules totaling 90 CP.
- (6) The Master's thesis may also be submitted in the form of a group thesis if the contribution of the individual examination candidate to be assessed as an examination performance is clearly distinguishable and assessable on the basis of the specification of sections, page numbers or other objective criteria that enable a clear delimitation and fulfills the requirements according to paragraph 1.
- (7) The Master's thesis must be submitted to the Examinations Office within 23 weeks of the start of work on the topic; the date of submission must be documented. With the thesis, the examination candidate must affirm that he/she has written his/her thesis - in the case of a group thesis his/her correspondingly marked part of the thesis - independently and has not used any sources and aids other than those indicated. The deadline for submission may be extended by the Examination Committee at the candidate's request for reasons for which he/she is not responsible. If the master's thesis is not submitted on time for reasons for which the candidate is responsible, it is deemed to have been assessed as "insufficient".
- (8) The scientific master thesis has to be submitted in electronic form in

English to the office of study affairs. The office of study affairs forwards the final version of the master thesis to the 2 examiners.

- (9) The Master's thesis is to be independently evaluated by 2 examiners. One of them should be the supervisor of the Master`s thesis.
- (10) The final grade of the Master's thesis is calculated as follows. If the grades of the two expert opinions are "sufficient" (4.0) or better and are not more than 2.0 apart, the final grade is calculated as 4/5 from the average of the two grades of the expert opinions and 1/5 from the grade of the colloquium (paragraph 11). If both grades of the expert opinions are "insufficient" (5.0), the thesis is failed. If one of the two grades of the expert opinions is "not sufficient" (5.0) or if the grades of the two expert opinions are more than 2.0 apart, the chairperson of the examination committee appoints a third expert. The final grade is then calculated as 4/5 of the average of the two better grades of the expert opinions, if they are "sufficient" (4.0) or better, and 1/5 of the grade of the colloquium. If two of the three grades of the expert opinions are "not sufficient" (5.0), the final grade is "not sufficient" (5.0).
- (11) The results of the Master's thesis must be presented in a colloquium of about 20 minutes' duration, consisting of a presentation\ followed by a discussion. The colloquium is evaluated by the examiners appointed by the examination board and must be passed by the candidate with "sufficient" (4.0) or better. If the colloquium is graded with "insufficient", it can be repeated. The evaluation of the colloquium is included in the grade of the Master's thesis according to paragraph 10.
- (12) If the Master's thesis is not passed, it can be repeated once within one year. The period begins with the announcement of the result. After expiry of this period, the repeat attempt is deemed to have been failed. A second repeat examination is only possible upon application for the next possible examination date. However, a change of the topic of the Master's thesis within the period specified in paragraph 4 is only permissible if the examination candidate has not previously made use of this option.
- (13) The entire assessment procedure of the Master's thesis including the colloquium must not exceed a duration of 6 weeks.

§ 19

Certificate and Master's diploma

- (1) The examination candidate will receive a certificate for the successfully

passed Master's examination immediately, if possible within 4 weeks. The transcript of records with the awarded grades (German grades and ECTS grades) and performance points for the modules of the Master's program as well as the overall grade will be attached to the certificate.

- (2) The certificate shall bear the date of the day on which the last examination performance was completed as well as the date of issue of the certificate. Furthermore, the certificate contains the name, date and place of birth of the student, the topic and grade of the Master's thesis as well as the overall grade of the examination. The certificate is designed in accordance with the corporate design of the University of Leipzig.
- (3) The University of Leipzig issues a Diploma Supplement (DS) according to the "Diploma Supplement Model" of the European Union/Council of Europe/UNESCO.
- (4) At the same time as the Master's certificate, the examination candidate receives the Master's diploma with the date of the certificate. This certifies the award of the Master's degree. The master's diploma is signed by the chairperson of the examination board and the dean of the Faculty of Chemistry and Mineralogy and bears the seal of the Faculty of Chemistry and Mineralogy. The Master's diploma and the transcript are issued in both German and English.

§ 20

Invalidity of the Master's examination

- (1) If the examination candidate has cheated in a performance assessment/examination and this fact only becomes known after the certificate has been issued, the grade of the examination performance can be corrected in accordance with § 12 para. 3. If necessary, the module examination and the Master's examination can be declared failed.
- (2) If the requirements for taking a module examination were not fulfilled without the examination candidate intending to deceive about this, and if this fact only becomes known after the certificate has been issued, this defect is rectified by passing the module examination. If the examination candidate has intentionally caused the module examination to be taken without justification, the module examination and the Master's examination can be declared failed.
- (3) The examination candidate must be given the opportunity to comment before a decision is made.

- (4) Paragraphs 1 to 3 apply accordingly to the Master's thesis.
- (5) An invalid certificate must be withdrawn and, if necessary, a new one issued. The Master's diploma, the data transcript and the Diploma Supplement are to be confiscated together with the invalid certificate. A decision according to paragraph 1 and paragraph 2 sentence 2 is excluded after a period of 5 years from the date of the certificate issue.

§ 21

Inspection of the examination files

Within one year after completion of the examination procedure, the examination candidate will be granted access to his/her written examination papers, the related expert opinions and the examination protocols within a reasonable period of time upon request in free form.

§ 22

Responsibilities of the examination board

- (1) The examination board of the Faculty of Chemistry and Mineralogy is responsible for all tasks to be performed according to these regulations, unless otherwise specified.
- (2) This examination board is responsible in particular for decisions
 1. on the refusal of admission to the module examinations and the Master's thesis (§ 5),
 2. on the consequences of violations of examination regulations (§ 12),
 3. on passing and failing (§ 13),
 4. on the recognition of period of study, examination and study achievements including the justification of non-recognition (§ 15),
 5. on the appointment of examiners and assessors (§ 17) and the authorization to issue the Master's thesis (§ 18),
 6. on the invalidity of the Master's examination (§ 20) and
 7. about objections in the examination procedure (§ 23).

§ 23

Right of objection

- (1) Any incriminating decisions must be accompanied by instructions on how to appeal.

- (2) The examination candidate may appeal against incriminating decisions within one month after notification. The appeal is to be submitted in written form or form of written record to the examination board of the Faculty of Chemistry and Mineralogy.
- (3) The examination board will decide on the appeal within a period of 3 months.

II. Specific regulations

§ 24

Scope of Studies

- (1) The total student workload for the successful completion of the Master's program Structural Chemistry and Spectroscopy corresponds to 120 credit points (CP). In addition to the attendance study, this also includes the self-study, the examination prerequisites and the examination workload. One credit point corresponds to a student workload of 30 time hours.
- (2) In each academic year, students normally earn 60 credit points, which are awarded on passing module examinations.

§ 25

Subject, type and scope of the Master's examination

- (1) The Master's examination consists of examinations for the modules listed in the appendix and the Master's thesis.
- (2) The Master's program consists of 120 credit points, of which 30 credit points are devoted to the Master's thesis.
- (3) The research-oriented degree program is structured as follows:
 1. Compulsory modules from the range of modules offered by the University of Science and Technology of Lille amounting to 30 CP
 2. The compulsory module "Synchrotron Radiation and its Applications" (13- 122-0415) and "Structural Analysis of Inorganic Chemistry" (13-122-0221) with a total of 10 CP.
 3. nine elective modules, each worth 5 credit points, to be chosen from

the following modules:

Term	Module-Nr.	Name	CP
2.	13-122-0321	Highlights in Natural Products Synthesis	5
2.	13-122-0411	Time-resolved and Surface Spectroscopy	5
2.	11-122-1121	Receptor Biochemistry	5
2.	13-122-0521	Modern Concepts in Catalysis	5
2.	13-122-0122	Selected Topics of NMR Spectroscopy	5
2.	12-122-1511	Basics of Interaction of electromagnetic Radiation with matter	5
2.	13-121-0642	Computational Chemistry on Solids	5
2.	13-121-1119	Separation Techniques and advances „-omics“-Techniques	5
2.	13-121-1416	Recent Trends in Chemistry	5
2.	13-121-0622	Machine Learning and AI-Driven Laboratories	5
2.	09-121-1503	Computer-aided drug discovery	5
3.	13-121-1120	Protein Crystallography	5
3.	13-122-0311	Medicinal Chemistry	5
3.	13-122-0413	Surface Analysis of Solids	5
3.	13-122-0121	NMR on Biosystems	5
3.	13-121-0125	Methods and Procedures for Trace Analysis	5
3.	13-122-0511	Nano Structured Catalytic Systems	5
3.	13-122-0512	Sustainable Systems in Chemistry	5
3.	13-121-0641	Computational Spectroscopy	5
3.	13-121-0420	Physical Chemistry of Clusters	5
3.	11-121-1112	Bioorganic Chemistry	5

4. one elective internship module worth 10 credit points each, to be chosen from the following modules:

Term	Module-Nr.	Name	CP
2./3.	13-121-0122	Research Practical Course in Molecular Spectroscopy	10
2./3.	13-121-0123	Research Practical Course in Concentration Analysis	10
2./3.	13-121-0126	Research Practical Course in Trace Analysis	10
2./3.	13-121-0215	Research Practical Course Inorganic Chemistry	10
2./3.	13-121-0216	Research Practical Course in Organometallic Chemistry	10

2./3.	13 121-0217	Research Practical Course in Functional Materials	10
2./3.	13-121-0218	Research Practical Course in Supramolecular Chemistry	10
2./3.	13-121-0313	Research Practical Course in Advanced Structural Organic Chemistry	10
2./3.	13-121-0314	Research Practical Course in Chemistry of Natural Products	10
2./3.	13-121-0315	Research Practical Course Catalytic Methods in Organic Chemistry	10
2./3.	13-121-0316	Research Practical Course Organic Chemistry/ Chemical Biology	10
2./3.	13-121-0417	Research Practical Course in Reaction Kinetics and Structure Elucidation	10
2./3.	13-121-0418	Research Practical Course in Thin Film Growth, Phenomena and Analysis of Solid Interfaces	10
2./3.	13-121-0419	Research Practical Course on the Characterization of Gas Phase Clusters and Liquid Interfaces	10
2./3.	13-121-0424	Research Practical Course on the chemistry of molecular fragment ions and ion soft-landing	10
2./3.	13-121-0514	Research Practical Course in Heterogeneous Catalysis	10
2./3.	13-121-0515	Research Practical Course in Chemical Reaction Kinetics	10
2./3.	13-121-0631	Research Practical Course in Theoretical Chemistry	10
2./3.	13-121-0632	Research Practical Course Artificial Intelligence in Theoretical Chemistry	10
2./3.	13-121-1114	Research Practical Course in Bioanalytics	10

2./3.	13-121-1115	Research Practical in Recombinant Protein Expression	10
2./3.	11-121-1116	Research Practical Course in Bioorganic Chemistry	10
2./3.	13-121-1311	Research Practical Course in Crystallography in Material Science	10
2./3.	13-121-1415	Research Practical Course in Environmental Chemistry	10
2./3.	13-121-1422	Research Practical Course in Atmospheric Chemistry	10

5. the Master's thesis

§ 26 Master's degree

After passing the Master's examination, the faculty awards the academic degree of "Master of Science" (abbreviated M.Sc.).

§ 27 Effective date and release

- (1) These examination regulations come into force on April 1, 2023. They apply to all students enrolled in the Master's program Advanced Spectroscopy in Chemistry. It applies to all students enrolled for the joint international and English-language Master's program entitled Advanced Spectroscopy in Chemistry leading to the degree of Master of Science (M.Sc.) at Leipzig University.
- (2) It was adopted by the Faculty Council of the Faculty of Chemistry and Mineralogy on June 13, 2022. These examination regulations were approved by the Rectorate on November 2022. They are published in the Official Announcements of the University of Leipzig.
- (3) Modules already completed according to the examination regulations of June 20, 2011 (Official Announcement of the University of Leipzig No. 48, pp. 1 to 29) are included in the calculation of the Master's grade according to § 11 para. 1 of examination regulations. Equivalence regulations for the transfer of modules already completed will be announced in electronic form.
- (4) If students have failed a module examination affected by these examination regulations prior to their coming into force, the

examination must be repeated in accordance with the regulations of the examination regulations in the version valid at the time of registration for the module examination.

Leipzig,

Professor Dr. Inés Obergfell Rektorin

Explanations of placeholders in the attachments to examination regulations:

General explanation

Placeholder:

These stand in the overview for student selection options. The scope of the modules to be selected (credit points) is indicated in each case.

Elective placeholders are to be filled from the attached catalog of elective modules in accordance with the provisions of the examination regulations.

Individual explanation

Elective placeholders:

These placeholders stand for the elective modules of the program, which can be studied to the extent indicated there. Which elective modules are to be selected is regulated in the examination regulations.

Appendix to the examination regulations of the study program

Master of Science Advanced Spectroscopy in Chemistry (from WS 2017/18)

Module/associated classes with subject and type (scope of the course)	Elective course holder 1	Elective course holder 2	Elective course holder 3	Examination prerequisites	Performance assessment Type/Duration	CP	ECTS
Elective course holder 1 (modules in the scope of 30 CP according to § 25 Abs. 3 No. 1 of examination regulations)	1.	P	1				30
Elective course holder 2 (modules in the scope of 45 CP according to § 25 para. 3 No. 3 of examination regulations)	2./3.	P	2				45
Elective course holder 3 (internship modules in the amount of 10 CP according to § 25 para. 3 No. 4 of examination regulations)	2./3.	P	1				10
13-122-0415 Synchrotron Radiation and its Applications	2.	P	1		Portfolio (4 weeks)	1	5
Lecture "Synchrotron Radiation" (2SWS)							
Seminar "Synchrotron Radiation" (1SWS)							
Master`s Thesis							30
Sum:							120

**Elective modules Master of Science Advanced Spectroscopy in Chemistry
(from WS 2017/18)**

Module/associated classes with subject and type (scope of the course)	ECTS	WP	Prerequisites	Examination prerequisites	Performance assessment Type/Duration	ECTS	Prerequisites
13-121-0641 Computational Spectroscopy	1./3.	WP	1		Performance in practical exercises	1	5
Lecture "Computational Spectroscopy" (2SWS)							
Practical exercises "Computational Spectroscopy" (3SWS)							
11-122-1121 Receptor Biochemistry	2.	WP	1		Oral examination 30 min.	1	5
Lecture "Receptor Biochemistry" (2SWS)							
Seminar "Receptor Biochemistry" (2SWS)							
12-122-1511 Basics of Interaction of Electromagnetic Radiation with Matter (Spectroscopy)	2.	WP	1		Oral examination 30 min.	1	5
Lecture "Basics of Interaction of Electromagnetic Radiation with Matter" (4SWS)							
13-121-0122 Advanced Practical Course Molecular Spectroscopy	2./3.	WP	1		Internship performance	1	10
Practical course "Molecular Spectroscopy" (10SWS)							
13-121-0123 Advanced Practical Course in Concentration Analysis	2./3.	WP	1		Internship performance	1	10
Practical course "Concentration Analysis" (10SWS)							
13-121-0126 Advanced Practical Course in Trace Analysis	2./3.	WP	1		Internship performance	1	10
Practical course "Trace Analysis" (10SWS)							
13-121-0215 Research Practical Course in Inorganic Chemistry	2./3.	WP	1		Internship performance	1	10
Practical course "Inorganic Chemistry" (10SWS)							
13-121-0216 Research Practical Course Organometallic Chemistry	2./3.	WP	1		Internship performance	1	10
Practical course "Organometallic Chemistry" (10SWS)							

13-121-0217 Research Practical Course in Inorganic Chemistry - Functional Materials	2./3.	WP	1		Internship performance	1	10
Practical course "Functional Materials" (10SWS)							
13-121-0218 Research Practical Course Supramolecular Coordination Chemistry	2./3.	WP	1		Internship performance	1	10
Practical course "Supramolecular Coordination Chemistry" (10SWS)							
13-121-0221 Homogeneous catalysis in industry, synthesis and nature	2.	WP	1		Written examination 90 min.	1	5
Lecture "Homogeneous catalysis" (2SWS)							
Lecture "Bioinorganics" (2SWS)							
13-121-0313 Laboratory Course in Advanced Synthetic Organic Chemistry	2./3.	WP	1		Internship performance	1	10
Practical course "Advanced Synthetic Organic Chemistry" (10SWS)							
13-121-0314 Practical course Chemistry of Natural Products	2./3.	WP	1		Internship performance	1	10
Practical course "Chemistry of Natural Products" (10SWS)							
13-121-0315 Laboratory Course Catalytic Methods in Organic Chemistry	2./3.	WP	1		Internship performance	1	10
Practical course "Catalytic Methods in Organic Chemistry" (10SWS)							
13-121-0316 Laboratory Course Organic Chemistry / Chemical Biology	2./3.	WP	1		Internship performance	1	10
Practical course "Organic Chemistry/ Chemical Biology" (10SWS)							
13-121-0411 Molecular structure of fluid interfaces	2.	WP	1		Written examination 90 min.	1	5
Lecture "Molecular structure of fluid interfaces" (3SWS)							
13-121-0417 Research Practical Course in Reaction Kinetics and Structure Elucidation	2./3.	WP	1		Internship performance	1	10
Practical course "Reaction Kinetics and Structure Elucidation" (10SWS)							

13-121-0418 Research Practical Course in Thin Film Growth, Phenomena and Analysis of Solid Interfaces	2./3.	WP	1		Internship performance	1	10
Practical course "Thin Film Growth, Phenomena and Analysis of Solid Interfaces" (10SWS)							
13-121-0419 Research Practical Course on the Characterization of Gas Phase Clusters and Liquid Interfaces	2./3.	WP	1		Internship performance	1	10
Practical course "Characterization of Gas Phase Clusters and Liquid Interfaces" (10SWS)							
13-121-0514 Research Practical Course in Heterogeneous Catalysis	2./3.	WP	1		Internship performance	1	10
Practical course "Heterogeneous Catalysis" (10SWS)							
13-121-0515 Research Practical Course Chemical Reaction Engineering	2./3.	WP	1		Internship performance	1	10
Practical course "Chemical Reaction Engineering" (10SWS)							
13-121-0631 Practical Course Theoretical Chemistry	2./3.	WP	1		Internship performance	1	10
Practical course "Theoretical Chemistry" (10SWS)							
13-121-0642 Computational Chemistry of Solids	2.	WP	1		Performance in practical exercises	1	5
Lecture "Computational Chemistry of Solids" (2SWS)							
Practical exercises "Computational Chemistry of Solids" (3SWS)							
13-121-1114 Practical Course Bioanalytics	2./3.	WP	1		Internship performance	1	10
Practical course "Bioanalytics" (10SWS)							
13-121-1115 Practical Course Recombinant Protein Expression	2./3.	WP	1		Internship performance	1	10
Practical course "Recombinant Protein Expression" (10SWS)							
13-121-1119 Separation techniques and advanced "-omics"-techniques	2.	WP	1				5
Lecture "Separation techniques and advanced "-omics"-techniques" (2SWS)					Written examination 90 min.	2	
Seminar "Separation techniques and advanced "-omics"-techniques" (2SWS)					Presentation 30 min.	1	

13-121-1311 Advanced Practical Course Crystallography in Materials Science	2./3.	WP	1		Internship performance	1	10
Practical course "Crystallography in Materials Science" (10SWS)							
13-121-1416 Recent Trends in Chemistry	2.	WP	2		Written examination 90 min.	1	5
Colloquium "Recent Trends in Chemistry" (3SWS)							
13-121-1422 Advanced Practical Course in Atmospheric Chemistry	2./3.	WP	1		Internship performance	1	10
Practical course "Atmospheric Chemistry" (10SWS)							
13-122-0122 Selected Topics of NMR Spectroscopy	2.	WP	1	Performance in practical exercises	Written examination 90 min.	1	5
Lecture "Selected Topics of NMR Spectroscopy" (2SWS)							
Practical exercises "Selected Topics of NMR Spectroscopy" (1SWS)							
13-122-0221 Structural Analysis in Inorganic Chemistry	2.	WP	1		Written examination 90 min.	1	5
Lecture "Inorganic Structural Analysis" (4SWS)							
13-122-0321 Highlights in Natural Products Synthesis	2.	WP	1		Written examination 90 min.	1	5
Lecture "Highlights in Natural Products Synthesis" (3SWS)							
Seminar "Highlights in Natural Products Synthesis" (1SWS)							
13-122-0411 Short pulse and surface spectroscopy	2.	WP	1		Written examination 90 min.	1	5
Lecture "Short pulse and surface spectroscopy" (3SWS)							
13-122-0521 Modern Concepts in Catalysis	2.	WP	1		Written examination 90 min.	1	5
Lecture "Heterogeneous Catalysis" (2SWS)							
Seminar "Modern Concepts in Catalysis" (2SWS)							
11-121-1112 Bioorganic Chemistry	3.	WP	1	Presentation, 30 min.	Oral examination 30 min.	1	5
Lecture "Bioorganic Chemistry" (2SWS)							
Seminar "Bioorganic Chemistry" (2SWS)							
11-121-1116 Practical Course Bioorganic Chemistry	3.	WP	1		Internship performance	1	10
Practical course "Bioorganic Chemistry" (10SWS)							

13-121-0125 Methods and Procedures for Trace Analysis	3.	WP	1		Written examination 90 min.	1	5
Lecture "Methods and Procedures for Trace Analysis" (2SWS)							
Training "Methods and Procedures for Trace Analysis" (1SWS)							
Exercises "Methods and Procedures for Trace Analysis" (1SWS)							
13-121-0420 Physical Chemistry of Clusters	3.	WP	1		Written examination 90 min.	1	5
Lecture "Physical Chemistry of Clusters" (3SWS)							
13-121-1120 Protein Crystallography	3.	WP	1	Performance in practical exercises	Written examination 90 min.	1	5
Lecture "Protein Crystallography" (2SWS)							
Practical exercises "Protein Crystallography" (2SWS)							
13-121-1415 Practical Course in Environmental Chemistry	3.	WP	1		Internship performance	1	10
Practical course "Environmental Chemistry" (10SWS)							
13-122-0121 NMR on Biosystems	3.	WP	1	Performance in practical exercises	Written examination 90 min.	1	5
Lecture "NMR on Biosystems" (2SWS)							
Seminar "NMR on Biosystems" (1SWS)							
Practical exercises "NMR on Biosystems" (1SWS)							
13-122-0413 Surface Analysis of Solids	3.	WP	1		Written examination 90 min.	1	5
Lecture "Surface Analysis of Solids" (3SWS)							
13-122-0511 Nanostructured Catalytic Systems	3.	WP	1		Written examination 90 min.	1	5
Lecture "Nanostructured Catalytic Systems" (2SWS)							
Exercise "Nanostructured Catalytic Systems" (2SWS)							
13-122-0512 Sustainable Systems in Chemistry	3.	WP	1		Written examination 90 min.	1	5
Lecture "Sustainable Systems in Chemistry" (3SWS)							
Seminar "Sustainable Systems in Chemistry" (1SWS)							