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## EXAMINATION REGULATIONS

for the Master's Programme in

Chemistry

at the

University of Duisburg-Essen

of the 06. January 2006

On the basis of § 2 Sec. 4 and of § 94 Sec. 1 of the Law Governing the Universities of the State of North Rhine-Westphalia (Hochschulgesetz – HG) of the 14th March 2000 (GV. NRW. P. 190), last amended by the law of the 16<sup>th</sup> December 2003 (GV. NRW. P. 772), the Department of Chemistry at the University of Duisburg-Essen has issued the following examination regulations.

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## I. General Regulations

### § 1

#### Area of Validity and Qualification to Enrol

(1) These Master's examination regulations govern the final examinations for the course of studies in the Master's programme in chemistry at the University of Duisburg-Essen.

(2) Only persons who have been awarded a "Bachelor of Science" degree at a University in the Federal Republic of Germany for a university course in chemistry or a related natural science subject, or who can provide evidence of an equivalent qualification, can be enrolled in the Master's course of studies. In the latter case, the decision rests with the examination board and conditions may be stipulated. The examination board can determine a minimum grade required for admission to the Master's programme. In addition, successful participation in a selection interview is obligatory for all applicants.

(3) The course of studies is held in the German language. When enrolling for the course, students whose native language is not German must provide evidence of sufficient knowledge of the German language in the form of a pass in the TestDaF or DSH test procedure. If proof is presented in accordance with the TestDaF procedure, evidence of a grade of 4/4/4/4 is to be submitted, evidence of at least 40 points is to be provided in the case of the DSH examination.

(4) As for the remainder, the admission regulations of the University of Duisburg-Essen apply in their respective valid version.

### § 2

#### Aim of the Course of Studies, Purpose of the Examination

(1) The course of studies in the Master's programme in chemistry is intended to convey the necessary subject knowledge, abilities and methods by way of general scientific and occupational field-related academic instruction to students, under consideration of the requirements and changes in the professional world and in such a manner as to make them capable of independent scientific work, of the critical classification of scientific findings and of responsibility for their actions.

(2) The Master's examination constitutes the occupational qualification or, within a corresponding consecutive Bachelor's and Master's programme, a second occupational qualification. The Master's examination is designed to determine whether students have acquired consolidated subject knowledge, abilities and methods, are able to obtain an overview of the coherencies of their subject and possess the ability for independent scientific work and to apply scientific methods and findings in their subject field for the solution of problems. In addition to this, a pass in the Master's examination qualifies the candidate for the doctorate and therefore for an academic career.

### § 3

## Master's Degree

Following the successful conclusion of the Master's examination, the Department of Chemistry of the University of Duisburg-Essen shall award the Master's degree "Master of Science", abbreviated "M. Sc."

### § 4

#### Standard Course Duration, Course Structure, Extent of the Course

(1) The standard course duration of the Master's programme in chemistry, including the preparation time for the Master Thesis, is two years or 4 semesters.

(2) All stages of the course of studies are modularly structured. The European Credit Transfer System (ECTS) serves to record the overall time required for the work carried out by the students. Each teaching course is provided with a number of ECTS credits that corresponds to the respective effort required for the studies. The objectives and the content of the teaching courses are laid down in writing by the department in the module handbook. The module handbook is updated as required upon the recommendation of the responsible examination board. There is no qualitative grading of the course work connected with the ECTS credits.

(3) In the standard plan for the course of studies (see Annex 4) for the Master's programme in chemistry, the study content is structured in such a manner to allow the course of studies to be concluded within the standard course duration. At the same time, students are guaranteed their own choice of focal points and that the relationship of compulsory, compulsory elective and elective subjects is balanced.

### § 5

#### ECTS Credits

(1) In the Master's programme in chemistry, a total of 120 ECTS credits are to be acquired. Of these

- 90 ECTS credits are allotted to the examined subject-specific modules that accompany the course of studies;
- 30 ECTS credits are allotted to the Master Thesis in accordance with § 15.

(2) In order to document the work carried out, an ECTS credit account is set up in the examination board records for each student in the Master's programme in chemistry. In the event of a pass in a module, the corresponding number of ECTS credits shall be credited to this account. Students are able to inspect their account balance at any time within the framework of organisational possibilities.

(3) 60 ECTS credits are to be acquired for each year of the course of studies. Students who have acquired less than 45 ECTS credits in the first year of the course of studies must attend a specialised course guidance service.

## § 6 Types of Teaching Course

- (1) In the Master's programme in chemistry there are the following types of teaching course, or forms of teaching and learning: 1. Lecture, 2. Exercise, 3. Seminar, 4. Colloquium, 5. Practical course.
- (2) Lectures offer a coherent representation of basic and specialised knowledge as well as methodical knowledge in the form of a talk.
- (3) Exercises are designed for the practical application and practice of scientific methods and processes in strictly defined subject areas.
- (4) Seminars offer the opportunity to study a scientific problem actively. Participation consists of the presentation of a personal contribution regarding individual specialist questions, in controversial discussion and in acquired interpretation.
- (5) Colloquia serve scientific discourse that is both open and interdisciplinary. Their aim is to provide an open exchange of ideas.
- (6) Practical courses are suitable for the exemplary description of the content and methods of a subject by means of experiments and for familiarising the students with the experimental methods of the subject. Here, students are also to practice the planning of experiments and the meaningful evaluation of the results. Prior to embarking upon the first task in a laboratory, students must prove that they have taken note of the valid laboratory rules including the safety regulations.

## § 7 Examination Board

- (1) The Department of Chemistry is to form an examination board for the organisation of the examinations and for the other examination-related tasks set by these examinations regulations.
- (2) The examination board is comprised of the chairman, his deputy and five other members. The chairman, his deputy and two other members are elected by the departmental council from the group of professors, one member is elected from the group of research assistants and two members are elected from the group of students upon the recommendation of each of the groups. Correspondingly, deputies are elected for the members of the examination board with the exception of the chairman and the deputy. The period of office of the members from the group of professors and from the group of research assistants is three years, the period of office of the student members is one year. Repeat election is permitted.
- (3) The examination board is an authority in the spirit of administrative procedure and administrative process law.
- (4) The examination board ensures that the provisions of the examination regulations are observed and is responsible for the proper execution of the examinations. It is particularly responsible for decisions concerning protests against decisions taken in examinations. In addition to this, the examination board is to report regularly, at least once per year, to the departmental council with re-

gard to the development of the examinations and durations of the course of studies. It makes suggestions for the reform of the examination regulations, the study regulations and the study plans, and discloses the distribution of the grades and the overall grades. The examination board regularly monitors the assignment of the ECTS credits against the actual study time required and, if necessary, amends the distribution. In all normal cases, the examination board can confer the execution of its duties upon the chairman; this does not apply to decisions concerning protests or to the report to the departmental council.

(5) The chairman convenes the examination board. He must convene the board if it is requested by at least one member of the examination board, or by the Dean or the Dean of Studies of the Department of Chemistry.

(6) The examination board is a quorum if two further members from the group of professors and at least one further member with the authority to vote are present in addition to the chairman or the deputy. It makes decisions with a simple majority. The chairman has the casting vote in the case of equal votes. The student members of the examination board are not involved in the grading and recognition of course work and examination work.

(7) The members of the examination board are entitled to attend examinations.

(8) The examination board sessions are closed. The members of the examination board and their deputies are subject to secrecy. In so far as they are not already sworn to secrecy due to a civil service or employment relationship, they are to be sworn to secrecy by the chairman of the examination board in accordance with the Law Regarding the Formal Duties of Persons without Public Service Status (Verpflichtungsgesetz).

(9) The examination board is to co-ordinate with the appropriate examination office for the organisation and execution of the Master's examination procedure.

## § 8 Recognition of Course and Examination Work, Classification in Higher Subject Semesters

(1) Study time, course work and examination work in the same accredited programme at other scientific universities in the Federal Republic of Germany, or in equivalent courses at national or foreign universities with ECTS grading, is to be recognised without being examined for equivalence.

(2) Study time, course work and examination work in other courses or at other universities in the Federal Republic of Germany shall be recognised provided that equivalence is established. Study time, course work and examination work which has been performed at foreign universities and does not correspond to Section 1, shall be recognised upon application provided that equivalence is established. Equivalence is to be established if study time, course work and examination work corresponds in content, extent and requirements in essence to that of the course in the Master's programme in chemistry at the University of Duisburg-Essen. In doing so, a schematic comparison is not to be undertaken, but an overall consideration and overall grading. The equivalence agreements endorsed by the Conference of the Ministers of

Education and Cultural Affairs and the Conference of University Rectors and agreements within the framework of university partnerships are to be taken into consideration for the equivalence of study time, course work and examination work. In addition, the Central Office for Foreign Education can be consulted if the equivalence is in doubt.

(3) Sections 1 and 2 are valid correspondingly for the recognition of study time, course work and examination work in officially recognised correspondence courses and vocational degree courses, or in correspondence course units developed by the state of North Rhine-Westphalia in co-operation with other states and the federation.

(4) Work which has been performed in successfully completed education at the Oberstufenkolleg Bielefeld Experiment in the elective subject chemistry shall be recognised as course work, provided that equivalence is established.

(5) Applicants for the course of studies, who are entitled to commence the course in a higher subject semester on the basis of a classification examination in accordance with § 67 Hochschulgesetz, shall have the knowledge and abilities established in the classification examination recognised as course work and examination work. The assessment in the certificate for the classification examination is binding for the examination board.

(6) The examination board is responsible for recognition in accordance with Sections 1 to 5. Authorised subject representatives are to be consulted prior to establishments being made regarding equivalence.

(7) If course work and examination work is recognised the grades are to be adopted insofar as the grading systems are comparable and, if necessary, the corresponding ECTS credits in accordance with § 5 are to be awarded. The adopted grades are to be included in the calculation of the subject grade and the overall grade. In the case of incomparable grading systems, "pass" shall be noted in the record. This grade shall not be included in the calculation of the grade and the overall grade. The recognition shall be identified by a footnote on the certificate.

(8) If the prerequisites of Sections 1 to 5 are given, there is a legal entitlement to recognition. The recognition of study time, course work and examination work, which has been performed in the Federal Republic of Germany, shall take place officially. The students are to present the documentation required for recognition to the examination board.

## § 9

### Examiners and Assessors

(1) Only university teachers, assistant lecturers, private lecturers and research assistants, who have at least taken the corresponding Master's examination or a comparable examination and who have independently taught the subject area to which the examination is related, may be appointed as examiners. Only those who have taken the corresponding Master's examination or a comparable examination can be appointed as assessors.

(2) The examination board appoints the examiners and assessors. It can confer the appointment upon the chairman. As a rule, the teacher responsible for the teach-

ing courses upon which the corresponding examination is based, in accordance with Section 1 Clause 1, is appointed as examiner.

(3) The examiners are independent in their activities as examiners. It is their duty to carry out the preparation of content and the execution of the examinations. They also decide and inform with regard to the aids that may be used in the performance of the examination work. The examiners work together with the examination board and the examination office with regard to the organisational arrangements (organisation of date and room planning, organisation of the invigilators).

(4) In each case, the students may propose the first examiner (tutor) for the Master Thesis. Consideration is to be given to the proposal as far as possible. However, the proposals do not constitute an entitlement.

## II. Master's Examination

### § 10

#### Admission to the Master's Examination

(1) The examination board shall set deadlines for applications for admission to the Master's examination. The following is to be attached to the application:

Evidence that the admission prerequisites stated in § 1 are given,

a declaration stating whether the student has already finally failed a Master's examination in the same or an equivalent course of studies, or a diploma examination or a Master of Science in an equivalent course of studies and whether they are already undertaking another examination procedure.

(2) Admission to participate in examinations is to be denied if

- a) the prerequisites stated in Section 1 are not given, or
- b) the documents are not complete, or
- c) the student has finally failed one of the examinations stated in Section 1 No. 2, or
- d) the student is already undertaking one of the examination procedures stated in Section 1 No. 2.

### § 11

#### Structure of the Examination, Registration

(1) The Master's examination is comprised of teaching course-related module and part module examinations (§ 12) that accompany the course of studies and the Master Thesis (§ 15) that concludes the course of studies.

(2) The oral examinations that accompany the course of studies serve to provide contemporary evidence of the successful attendance of teaching courses or modules and of the acquisition of the knowledge and abilities communicated in each of these teaching courses or modules. In the course of these examinations, students are to show that they possess the ability to recognise the coherencies in the respective fields of the examinations and are able to classify specialised questions within these coher-

encies.

(3) Two dates are provided for the examinations in the compulsory and compulsory elective subjects, insofar as they are carried out in connection with lectures or exercises as written examinations in accordance with § 14, of which one date must be observed following registration in accordance with Section 4. The first examination date is in the last week of the lecture period or in the first week of the lecture-free period in relation to the semester in which the teaching course was attended. The second date is in the last week of the lecture-free period or in the first week of the lecture period of the next semester. Notification of the dates of the examinations that accompany the course of studies shall take place at least six weeks prior to the date of each examination by way of a notice posted on the notice board of the examination board. The duty of obtaining information regarding the examination dates rests with the students.

If semester final examinations are carried out as oral examinations, then examiners and students are to agree a date prior to the start of the next lecture period.

(4) Students must register for all parts of the examination within the registration period in the manner prescribed by the examination office. With the registration, the students commit themselves to observe the examination on the date set in accordance with Section 3. In the event of the student failing this examination he is to observe the repeat dates that follow immediately.

(5) If the student provides credible evidence by presenting a medical certificate that he is unable to take part in an examination in the intended form or to the intended extent due to long-term or permanent physical disability then, upon application, the chairman of the examination board shall allow the student to produce equivalent work in a different form.

## § 12

### Form of the Module and Module Part Examinations

(1) Examination and course work serves to provide contemporary evidence of the successful attendance of teaching courses and of the acquisition of the knowledge and abilities communicated in each of these teaching courses.

(2) All examination and course work takes place in accompaniment to the course of studies and, with the exception of the Master Thesis, is assigned to individual teaching courses in terms of content.

(3) Examination work is to be carried out:  
a. Orally and /or  
b. in writing by means of written examinations and other written work.

(4) Course work may be:  
a. A colloquium and /or  
b. a contribution to a seminar and /or  
c. a written report

(5) Experiment reports and attestations are additional forms of approved course work. In experiment reports and attestations, students are to provide evidence that they possess the ability to understand the content of, and to explain properly, the conception and results of experiments carried out in the framework of practical courses.

(6) At the start of each teaching course, students are to be informed of the form of examination that applies to them and of the duration of the examination. The form of the examination and the duration are to be determined uniformly for all candidates in a semester by the examiner. § 11 Section 5 remains unaffected.

## § 13

### Oral Examinations

(1) In the oral examinations the candidate is to provide evidence that he is aware of the coherencies in the field of the examination and that he is able to classify specialised questions within these coherencies. In addition, it is to be established by the oral examination that he has achieved the teaching aims related to the teaching course.

(2) As a rule, oral examinations are undertaken as an individual examination in front of an examiner and in the presence of an assessor. Deviation from this may only take place for urgent reasons with the approval of the examination board; the reasons are to be entered into the records. The assessor is to be consulted prior to the grade being determined in accordance with the grading model in § 21.

(3) Oral examinations last a minimum of 30 minutes and a maximum of 60 minutes for each student.

(4) The main topics and results of an oral examination are to be entered into a record. The student is to be informed of the result following the oral examination. The grade of an oral examination is to be communicated to the examination board in writing within one week of the date of the examination.

## § 14

### Written Examinations

(1) In a written examination, the candidate is to provide evidence that he is able to identify and find ways to solve a problem from the subject field of the examination using the common methods of his subject, on the basis of the necessary fundamental knowledge in limited time and with the authorised aids.

The duration of written examinations is 60 minutes to 180 minutes. Exceptions are to be approved by the examination board.

(2) Each written examination is to be graded in accordance with the grading model in § 21. The criteria for the grading of the examination are to be revealed upon application by the examination candidate.

(3) As a rule, the grading process may not exceed four weeks. Deviation from this is only permitted for urgent reasons; the reasons are to be entered into the record. The grade of a written examination is to be communicated to the examination board in writing immediately after the conclusion of the grading process.

## § 15

### Master Thesis

(1) The Master Thesis is a piece of examination work that concludes the scientific education in the Master's programme in chemistry. It is to demonstrate that the

student possesses the ability to develop a problem from the subject field of chemistry independently and according to scientific methods within a predefined period of time.

(2) Only those who have received a total of 80 credits from the Master's programme in chemistry can be admitted to the Master Thesis.

(3) The subject of the Master Thesis shall be set and supervised by a professor or a university teacher or a private lecturer from the department of chemistry who teaches courses in the Master's programme in chemistry. If the Master Thesis is to be undertaken in a different department of the University of Duisburg-Essen or at a facility outside the university, then the approval of the examination board is required. Upon application from the student, the chairman of the examination board ensures that the student receives a topic for a Master Thesis in good time. The moment of issue of the topic of the Master Thesis is to be entered into the record held by the chairman of the examination board through which it is issued.

(4) The development period for the Master Thesis is 6 months. In individual cases, the examination board may extend the development time by up to 2 months upon justified application by the student, provided that a corresponding application is made to the chairman of the examination board in writing two weeks at the latest before the deadline for the Master Thesis is due to be handed in. The topic and the task formulation of the Master Thesis must be constituted in such a manner as to allow adherence to the period of time set for the development. The topic can only be turned down once and within the first month of the development period.

(5) The Master Thesis is to be written in the German or the English language and to be submitted before the deadline to the examination board in triplicate, printed and bound in DIN A4 format. At the submission of the Master Thesis, the student is to give written assurance that he has written his Thesis, or in the case of a group Thesis the appropriate marked section, independently and that he has used no other sources and aids than those stated and has identified any quotes. The time of submission is to be entered into the records. If the Master Thesis is not submitted before the deadline, then it shall be graded as "not sufficient (0 Grade Points)".

(6) As a rule, the Master Thesis is to be graded by two examiners; the primary examiner (tutor) is to be the examiner who set the topic of the final Thesis. Exceptions to this rule are to be approved by the examination board. The second examiner shall be appointed by the examination board. At least one of the examiners must belong to the Department of Chemistry at the University of Duisburg-Essen. The individual grading is to be carried out in accordance with the grading model in § 21. The grade of the Master Thesis is formed from the arithmetic average of the individual grades, provided that the difference is no more than 30 Grade Points. In the event of a difference of more than 30 Grade Points, a third examiner shall be appointed by the examination board to grade the Master Thesis. In this case, the grade is formed from the arithmetic average of the three grades. However, the Master Thesis can only be graded as "sufficient (50 Grade Points)" or better if at least two of the grades are "sufficient (50 Grade Points)" or better.

(7) As a rule, the grading process should not exceed

six weeks. Deviation from this is only permitted for urgent reasons; the reasons are to be entered into the record. The grade of the Master Thesis is to be communicated to the examination board in writing immediately after the conclusion of the grading process.

## § 16

### Repeat Examinations

(1) Passed examination that accompany the course of studies and a passed Master Thesis may not be repeated. The examination board shall decide upon exceptions.

(2) Failed examinations that accompany the course of studies or examinations that accompany the course of studies which count as failed may be repeated twice.

(3) A failed Master Thesis may be repeated once. However, rejection of the topic of the second Master Thesis within the deadline stated in § 15 Section 4 Clause 4 is only permitted if the student did not make use of this opportunity in the preparation of the first Master Thesis.

## § 17

### Supplementary Oral Examinations

(1) In a supplementary oral examination the student, even after failing the second repeat of an examination that accompanies the course of studies in accordance with § 16, has a final opportunity to prove that he is aware of the coherencies in the field of the examination and that he is able to classify specialised questions within these coherencies.

(2) The examination board appoints the examiners for the supplementary oral examinations. Students who take part in supplementary oral examinations are to observe the respective dates set by the examination board.

(3) As a rule, supplementary oral examinations are taken before two examiners. Deviation from this is only permitted for urgent reasons and with the approval of the examination board; the reasons are to be entered into the record.

(4) Supplementary oral examinations last a minimum of 30 minutes and a maximum of 60 minutes for each student.

(5) The essential topics and results of an oral examination are to be entered into a record. The student is to be informed of the result following the oral examination.

(6) In the event of a pass in a supplementary oral examination, the previously failed second repeat of the examination that accompanies the course of studies concerned shall be graded with 50 Grade Points.

(7) In the event of failing a supplementary oral examination, the examination that accompanies the course of studies concerned, and therefore also the Master's examination, is finally failed.

## § 18

### Withdrawal, Default, Retirement, Deception, Contravention of the Regulations

(1) An examination counts as being graded "not sufficient (0 Grade Points)" if the student defaults on an examination date he is obliged to attend without previ-

ously providing valid reasons or if he retires from the examination after it has started without valid reasons. The same applies if a written examination is not carried out within the prescribed time.

(2) If the student is prevented from taking part in an examination by illness, and if he has provided evidence of the inability to be examined by presenting a medical certificate, then the attempt is not counted. In this case, he must take part in the next examination date that is offered. The presentation of the medical certificate to the examination board must take place immediately, generally within three working days after the date of the examination. With regard to the reason for not taking part in examinations or not adhering to the development periods in accordance with Section 1, the illness of a student is equal to the illness of a child which is predominantly in his sole care.

(3) If the student attempts to influence the result of his work by deception or by using aids that have not been authorised, then the work concerned counts as being graded with "not sufficient (0 Grade Points)". This is established by the respective examiner or the invigilator and entered into the record. A student who disrupts the proper execution of an examination can be excluded from continuing to take part in the examination by the respective examiner or the invigilator; in this case, the work concerned counts as being graded with "not sufficient (0 Grade Points)". In serious cases, the examination board can exclude the student from performing any further examination work.

(4) Within 14 days after the date of an examination, the student concerned may request that decisions in accordance with Section 3 are reviewed by the examination board. Decisions taken by the examination board which incriminate the student are to be communicated to him in writing, are to be justified and are to include an instruction on the right to appeal.

(5) The examination board may request and administer an affirmation in lieu of oath from the student that the examination work has been carried out by him independently and without unauthorised aid from third parties. Anyone who intentionally a) wrongly gives an affirmation in lieu of oath in accordance with Clause 1 or b) attempts or undertakes deception in accordance with Section 4 acts unlawfully. The offence can be punished with a fine of up to 100,000 Euro. The responsible administrative authority for the prosecution and punishment of offences in accordance with Clause 2 Letters a) and b) is the Chancellor. In the event of a repeated or otherwise serious attempt to deceive, the examinee may additionally be removed from the register of students.

## **§ 19**

### **Students in Special Situations**

(1) Upon application by the student, the examination board shall set the examination conditions regulated in these examination regulations for disabled students, under consideration of provisions to compensate for prejudice and under consideration of each individual case.

(2) Upon application by the student, the examination board shall set the examination conditions regulated in these examination regulations for students to whom the

protective regulations in accordance with §§ 3, 4, 6 and 8 of the Law Protecting Mothers-to-be and Nursing Mothers (Mutterschutzgesetz) apply, or for whom the periods of the Federal Parents Subsidy Law (Bundeserziehungsgeldgesetzes) with regard to periods of parenthood are effective, under consideration of each individual case.

(3) Upon application by the student, the examination board shall set the deadlines and dates regulated in these examination regulations for students who nurse or care for their spouses, their registered life partners or a relative in direct line or related by marriage in the first degree, if this person is in need of nursing or care, under consideration of time lost due to this care and under consideration of each individual case.

## **§ 20**

### **Passing and Failing the Master's Examination**

(1) The Master's examination is passed if all examinations in accordance with § 11 and the Master Thesis in accordance with § 15 are concluded successfully and 120 ECTS credits have been acquired.

(2) The Master's examination is finally failed if a piece of required examination work in accordance with Section 1 has not been successfully concluded and a repeat of this examination work is no longer possible.

(3) If the Master's examination is finally failed, upon application by the student and upon presentation of the corresponding certificates and the certificate of deregistration from the register of students, the examination board shall issue a certificate which lists the examinations passed, their grades and the acquired ECTS credits and which indicates that the Master's examination was failed.

## **§ 21**

### **Formation of the Examination Grades**

(1) The grades for the individual examinations that accompany the course of studies are to be determined by the respective examiners according to a scale of 0 to 100 Grade Points in whole-numbered steps. In the process, the Grade Points represent the following grading categories:

Grade Points	ECTS Grade System		Conventional Grade System	
100-96	A	Excellent	1,0	Sehr gut
95-91	B	Very good	1,3	Sehr gut
90-86	C	Good	1,7	Gut
85-81	C	Good	2,0	Gut
80-76	C	Good	2,3	Gut
75-71	D	Satisfactory	2,7	Befriedigend
70-66	D	Satisfactory	3,0	Befriedigend
65-61	D	Satisfactory	3,3	Befriedigend
60-56	E	Sufficient	3,7	Ausreichend
55-50	E	Sufficient	4,0	Ausreichend
49-0	F	Fail	5,0	Nicht ausreichend

(2) An examination that accompanies the course of studies or a graded piece of course work counts as a pass if it is graded with at least 50 Grade Points. The number of credits assigned to the teaching course upon which the examination is based shall be awarded to the student for passed examinations or course work.

(3) An examination that accompanies the course of studies counts as finally failed if it was graded with less than 50 Grade Points and all possibilities for repeating the examination in accordance with § 16 and §17 have been exhausted.

(4) If an examination that accompanies the course of studies is graded by several examiners, the grades are calculated from the arithmetic average of the individual grades. In the formation of the grades (Grade Points), the value is rounded up to a whole number (commercial rounding).

## § 22

### Formation of the Module Grades

(1) A module is successfully completed if all of the examinations that accompany the course of studies and course work belonging to the module have been passed. With the successful completion of a module, the identified ECTS credits are awarded to the student.

(2) The module grades are calculated from the arithmetic average weighted with ECTS credits of all the part module grades assigned to the respective module. For this purpose, the ECTS credits awarded for the successful completion of a teaching course are multiplied with the Grade Point achieved in the respective examination belonging to it. The total of all points (Credit Points = Credits x Grade Point) acquired within a module, divided by the total of all the ECTS credits acquired within a module results in the weighted average grade (Grade Point Average, GPA) of a module. In the formation of the grades (Grade Points), the value is rounded up to a whole

number (commercial rounding). (For the terms Grade Point, Credit Point and Grade Point Average cf. Annex 1).

## § 23

### Formation of the Overall Grade

(1) The overall grade of the Master's examination is calculated as a weighted average grade (Grade Point Average, GPA).

(2) The calculation of the overall grade of the Master's examination shall be carried out according to the same principle as the calculation of the module grades (cf. § 22). First, the points (Credit Point = Credits x Grade Points) are calculated in accordance with § 22 for all successfully completed examinations that accompany the course of studies and for the Master Thesis. The total of all the points (Credit Points) acquired in all of the subjects in the compulsory and compulsory elective fields and in the Master Thesis, divided by the total of all the ECTS credits acquired in the subjects of the compulsory and compulsory elective fields and in the Master Thesis, results in the balanced average grade (Grade Point Average, GPA) of the entire Master's examination. Apart from that, § 22 is valid correspondingly. An example calculation is shown in Annex 3 to the Master's Examination Regulations.

(3) ECTS grades in accordance with § 21 Section 1 are assigned additionally to the overall grade for the Master's examination for grading.

(4) If the Master Thesis is graded with more than 95 points and the Grade Point Average for the Master's examination is 95 points or more, then the overall assessment "passed with distinction" shall be awarded in the certificate and in the Diploma Supplement in accordance with § 25.

## § 24

### Additional Subjects

(1) In addition to the compulsory and compulsory elective subjects, the student may sit examinations in other subjects (additional subjects).

(2) The result of an examination in such an additional subject is not included in the determination of module grades and the overall grade. The performance is identified in the Diploma Supplement.

## § 25

### Certificate and Diploma Supplement

(1) If the student has passed the Master's examination, he will receive a certificate which includes the following details:

- Name of the university and designation of the department,
- name, first name, date and place of birth of the student,
- designation of the programme and evidence of the source for the Information Package,
- the designation and grades of the completed modules with the acquired credit points and the assigned ECTS grades,



- the subject and the grade of the Master Thesis with the acquired credit points and the assigned ECTS grade,
- the overall grade with the total credit points acquired and the assigned ECTS grade,
- upon application by the student, the period of subject course time required to complete the Master's course of studies,
- upon application by the student, the results of examinations taken in additional subjects, if applicable,
- the date of the day on which the last examination was taken,
- the signatures of the chairman of the responsible examination board and the dean of the department, and
- the university seal.

The certificate shall bear the date of the day on which the last piece of examination work for the Master's examination was performed. If the student submits a corresponding application to the examination board by the date of the registration of the Master Thesis in accordance with § 15, he will receive an additional English version of the certificate.

(2) Together with the graduation certificate, the graduate shall receive a Diploma Supplement in German and English from the university. In addition to personal details and general information regarding the type of degree, the university awarding the degree and the course of studies and course programme, the Diploma Supplement contains detailed information especially regarding the course and examination work and its grading, as well as the ECTS credits acquired in the respective examinations. The Diploma Supplement bears the same date as the certificate.

### **§ 26 Master's Diploma**

Simultaneously with the certificate and the Diploma Supplement, the graduate shall receive a diploma bearing the date of the certificate. The awarding of the Master's degree in accordance with § 3 is attested in the diploma. The diploma shall be signed by the chairman of the examination board and the Dean of the Department of Chemistry and shall be furnished with the seal of the University of Duisburg-Essen. If the student submits a corresponding application to the examination board by the date of the registration of the Master Thesis in accordance with § 15, he will receive an additional English version of the Master's diploma.

## **III. Final Provisions**

### **§ 27**

#### **Invalidity of the Master's Examination, Denial of the Master's Degree**

(1) If the student has used deception in an examination and if this fact only becomes apparent after the certificate has been awarded, the examination board may subsequently correct the grades accordingly for those examinations in which the deception took place and declare the whole or part of the examination as failed.

(2) If the conditions for the admission to an examination were not satisfied without it being the student's intention to deceive in this respect, and if this does not become apparent until the certificate has been handed over, then this deficiency is remedied by passing the examination. If admission was wrongly obtained by intent, the examination board shall reach a decision under consideration of the administrative process law for the state of North Rhine-Westphalia.

(3) The party concerned is to be given the opportunity to be heard prior to a decision being taken.

(4) The incorrect examination certificate is to be withdrawn and a new one is to be issued if necessary. A decision in accordance with Section 1 and Section 2 Clause 2 is ruled out after a period of five years from the date of issue of the examination certificate.

(5) If the examination is declared as failed overall, then the grade awarded is to be disallowed and the certificate handed out is to be withdrawn.

### **§ 28**

#### **Inspection of the Examination Records, Period of Retention**

(1) Upon application, the student is to be granted the opportunity to inspect his written examination work within one year after the completion of the examination procedure.

- (2) The examination records consist of
- (a) an examination card, which contains at least the following entries:
    - Name, first name, registration number, date of birth, place of birth
    - course of studies and, if applicable, field of consolidation
    - Start of the course of studies
    - Examinations
    - Advance examination work
    - Registration details
    - Final Thesis
    - Date of completion of the course of studies
    - Date of issue of the certificate and the diploma
  - (b) Copies of the certificates and the degree diplomas
  - (c) Examination, course work and participation certificates
  - (d) Examination work/examination records
  - (e) Other documents that are connected with the course of studies and the examination, in particular
    - Registration for the examinations
    - Copies of the higher education entrance qualification certificate

- Correspondence
- Medical certificates

The examination records can also be held electronically.

(3) The documents listed in Section 2 under a) and b) are to be retained for at least 50 years from the date of examination and the documents listed in Section 2 under c) to e) are to be retained for at least five years from the date of examination.

### **§ 29**

#### **Area of Validity**

These examination regulations are applicable to all students, who have registered for the Master's programme in chemistry at the University of Duisburg-Essen for the first time in the winter semester 2005/2006.

### **§ 30**

#### **Coming into Effect and Publication**

These examination regulations shall come into effect from the 01.10.2005. They shall be published in the Official Announcements of the University of Duisburg-Essen.

Issued on the basis of the resolution of the departmental council of the Department of Chemistry of the 14.07.2005.

Duisburg-Essen, the 06. Januar 2006

The Rector  
of the University of Duisburg-Essen  
Prof. Dr. Lothar Zechlin

**Annex 1:**

**Legend for Annex 2 and 3**

- Cr = ECTS Credits (Study Points)  
GP = Grade Points for an examination  
CP = Credit Points for an examination  
= Cr multiplied with the Grade Points of an examination  
GPA = Grade Point Average of the module or Master's examination  
=  $\sum$  all acquired Credit Points /  $\sum$  all acquired Credits

**Annex 2:**

**Example for the Calculation of a Module Grade**

Example Module "XXX"

<b>Examination / Teaching Course</b>	<b>Cr</b>	<b>GP</b>	<b>CP</b>	<b>GPA</b>
Part / Teaching Course 1 in Module XXX	4	66	264	
Part / Teaching Course 2 in Module XXX	6	94	564	
Part / Teaching Course 3 in Module XXX	3	73	219	
<b>Total</b>	<b>13</b>		<b>1047</b>	<b>81</b>

The student concerned therefore has acquired 13 Cr (= ECTS Credits) in this module and has achieved an average grade of  $1047 / 13 = 80.538 = 81$  (rounded up).

**Annex 3:**  
**Example for the Calculation of the Overall Grade**

Examination Element	Cr.	Module Grade	CP	GPA
Master's Lecture 1	5	52	260	
Master's Lecture 2	5	61	305	
Master's Lecture 3	5	83	415	
Master's Lecture 4	5	78	390	
Master's Practical 1	10	67	670	
Master's Practical 2	10	79	790	
Master's Practical 3	10	85	850	
Master's Practical 4	10	56	560	
Elective Course 1	5	63	315	
Elective Course 2	5	70	350	
Elective Course 3	5	91	455	
Elective Course 4	5	91	455	
Consolidation	10	76	760	
Master Thesis	30	88	2640	
Total	120		9215	
<b>GPA</b>				<b>77</b>
<b>Overall Grade</b>		<b>C</b>	<b>2,3</b>	<b>good</b>

#### Annex 4 Standard Plan for the Course of Studies

The range of teaching courses for the Master's programme in chemistry is spread over two years. The course of studies includes teaching courses from the compulsory, compulsory elective and elective fields, as explained in the following standard plan for the course of studies:

Module Abbreviation	Module size in credits	Teaching course	SWH			Cr	Pre-requisites	Examination
			V	S	P			
AnaC-V	5	Master's Lecture Analytical Chemistry	2	1		5	none	Written Exam / Colloquium
AnaC-P	10	Master's Practical Analytical Chemistry		1	14	10	none	Written Exam / Colloquium
AC-V	5	Master's Lecture Inorganic Chemistry	2	1		5	none	Written Exam / Colloquium
AC-P	10	Master's Practical Inorganic Chemistry		1	14	10	none	Written Exam / Colloquium
BC-V1	5	Cell Biochemistry	4			5	none	Written Exam / Colloquium
BC-P	10	Molecular Biochemistry	2			3	BC-V1	Written Exam / Colloquium for module
		Tissue and Organ Biochemistry	2			3	BC-V1	
		Practical Biochemistry			6	4	BC-V1	
BC-V2	5	Pathobiochemistry	2	1		5	none	Written Exam / Colloquium
BCP-P	10	Practical Biochemistry/ Physiology		1	14	10	BC-P, Phys-P	Written Exam / Colloquium
Did-V	5	Master's Lecture Didactics	1	2		5	none	Written Exam / Colloquium
OC-V	5	Master's Lecture Organic Chemistry	2	1		5	none	Written Exam / Colloquium
OC-P	10	Master's Practical Organic Chemistry		1	14	10	none	Written Exam / Colloquium
PC-V	5	Master's Lecture Physical Chemistry	2	1		5	none	Written Exam / Colloquium
PC-P	10	Master's Practical Physical Chemistry		1	14	10	none	Written Exam / Colloquium
Phys-V	5	Physiology I	4			5	none	Written Exam / Colloquium
Phys-P	10	Physiology II	4			6	Phys-V	Written Exam / Colloquium
		Practical Physiology			6	4	Phys-V	Written Exam / Colloquium
TC-V	5	Master's Lecture Technical Chemistry	2	1		5	none	Written Exam / Colloquium
TC-P	10	Chemical Process Technologies	2			3	none	

		Modern Separation Methods and Process Integration	2			3	none	
		Master's Practical Technical Chemistry		1	5	4	none	Written examination / Colloquium for module
ThC-V	5	Master's Lecture Theoretical Chemistry	2	1		5	none	Written Exam / Colloquium
ThC-P	10	Theoretical		3	9	10	ThC-V	Written Exam / Colloquium
Umwelt1	5	Environmental Chemistry Ground/Waste	2	1		5	none	Written Exam / Colloquium
Umwelt2	5	Environmental Chemistry Air/Water	2	1		5	none	Written Exam / Colloquium
Umwelt3	5	Environmental Chemistry Pollutants	2	1		5	none	Written Exam / Colloquium
Biomat	5	Biomaterials and Biomineralisation	2	1		5	none	Written Exam / Colloquium
Fluor	5	Fluorine Chemistry	2	1		5	none	Written Exam / Colloquium
OC-Konzepte	5	Stimulating Concepts in Organic Chemistry	2	1		5	none	Written Exam / Colloquium
IHK	5	Industrial Homogeneous Catalysis	2	1		5	none	Written Exam / Colloquium
MatWiss	5	Material Sciences	2	1		5	none	Written Exam / Colloquium
Consolidation	10	Consolidation		1	14	10	Master's Lecture and Master's Practical in the Chosen Subject	Colloquium and Discourse
Master Thesis	30	Master Thesis			25	30	80 Cr. from the Master's Course Programme	Master Thesis and Discourse

## Course Plan

### A) Chemistry Branch

1 <sup>st</sup> Semester	Module	Cr.	Examinations
Inorganic Chemistry	AC-V	5	Written Exam or Colloquium
Organic Chemistry	OC-V	5	Written Exam or Colloquium
Physical Chemistry	PC-V	5	Written Exam or Colloquium
Technical Chemistry	TC-V	5	Written Exam or Colloquium
Practical 1		10	Written Exam or Colloquium
	<b>Total</b>	<b>30</b>	<b>5 Examinations</b>

2 <sup>nd</sup> Semester	Module	Cr.	Examinations
Practical 2		10	Written Exam or Colloquium
Practical 3		10	Written Exam or Colloquium
Elective Course 1		5	Written Exam or Colloquium
Elective Course 2		5	Written Exam or Colloquium
	<b>Total</b>	<b>30</b>	<b>4 Examinations</b>

3 <sup>rd</sup> Semester	Module	Cr.	Examinations
Practical 4		10	Written Exam or Colloquium
Consolidation	Consolidation	10	Colloquium and Discourse
Elective Course 3		5	Written Exam or Colloquium
Elective Course 4		5	Written Exam or Colloquium
	<b>Total</b>	<b>30</b>	<b>4 Examinations</b>

4 <sup>th</sup> Semester	Module	Cr.	Examinations
Master Thesis	Master Thesis	30	Master Thesis and Discourse
	<b>Total</b>	<b>30</b>	<b>1 Examination</b>

Compulsory:	4 Lectures	20	Cr.
Compulsory Elective	4 Practicals	40	Cr.
Consolidation	1 Practical	10	Cr.
Master Thesis		30	Cr.
Elective Field (Chemistry and others)		20	Cr.
<b>Total</b>		<b>120</b>	<b>Cr.</b>

The four modules AC-V, OC-V, PC-V and TC-V, the consolidation practical and the Master Thesis are obligatory.

Of the 4 Master's practicals, 3 must be from the subjects AC, OC, PC and TC. The fourth practical can be taken from a choice of AnaC, AC, OC, PC, TC and ThC.

In the elective field, chemical courses (lectures and practicals) and non-chemical courses can be taken according to the above list. In the course of this, the practicals BC-P, Phys-P and BCP-P may not be elected. In addition, elective courses can be taken from the elective field for the B.Sc. in Chemistry and from the range for the B.Sc. in Water as well as M.Sc. in Water. In doing so, courses may not be taken that were already taken in the Bachelor course of studies. Election of additional teaching courses from non-chemical subject fields is possible but requires advance approval from the examination board.

In case of doubt, the examination board shall make a decision with regard to the recognition.

### B) Medical-Biological Chemistry Branch

<b>1<sup>st</sup> Semester</b>	<b>Module</b>	<b>Cr.</b>	<b>Examinations</b>
Physiology	Phys-V	5	Written Exam or Colloquium
Organic Chemistry	OC-V	5	Written Exam or Colloquium
Biochemistry	BC-V1	5	Written Exam or Colloquium
Chemistry Lecture (AC,PC,TC)		5	Written Exam or Colloquium
Practical OC	OC-P	10	Written Exam or Colloquium
	<b>Total</b>	<b>30</b>	<b>5 Examinations</b>

<b>2<sup>nd</sup> Semester</b>	<b>Module</b>	<b>Cr.</b>	<b>Examinations</b>
Practical Physiology	Phys-P	10	Written Exam or Colloquium
Practical Biochemistry	BC-P	10	Written Exam or Colloquium
Elective Course 1		5	Written Exam or Colloquium
Elective Course 2		5	Written Exam or Colloquium
	<b>Total</b>	<b>30</b>	<b>4 Examinations</b>

<b>3<sup>rd</sup> Semester</b>	<b>Module</b>	<b>Cr.</b>	<b>Examinations</b>
Practical Biochemistry /Physiology	BCP-P	10	Written Exam or Colloquium
Consolidation	Consolidation	10	Colloquium and Discourse
Elective Course 3		5	Written Exam or Colloquium
Elective Course 4		5	Written Exam or Colloquium
	<b>Total</b>	<b>30</b>	<b>4 Examinations</b>

<b>4<sup>th</sup> Semester</b>	<b>Module</b>	<b>Cr.</b>	<b>Examinations</b>
Master Thesis	Master Thesis	30	Master Thesis and Discourse
	<b>Total</b>	<b>30</b>	<b>1 Examination</b>

Compulsory:	3 Lectures	15	Cr.
Compulsory Elective	1 Lectures	5	Cr.
Compulsory:	4 Practicals	40	Cr.
Consolidation	1 Practical	10	Cr.



Master Thesis	30	Cr.
Elective Field (Chemistry and others)	20	Cr.
Total	120	Cr.

The modules BC-V, BC-P, BCP-P, OC-V, OC-P, Phys-V and Phys-P, the consolidation practical and the Master Thesis are obligatory.

The chemistry compulsory elective lecture in the first semester must be elected from the subjects AC, PC or TC.

In the elective field, chemical courses (lectures and practicals) and non-chemical courses can be taken according to the above list. In addition, elective courses can be taken from the elective field for the B.Sc. in Chemistry and from the range for the B.Sc. in Water as well as M.Sc. in Water. In doing so, courses may not be taken that were already taken in the Bachelor's course of studies. Election of additional teaching courses from non-chemical subject fields is possible but requires advance approval from the examination board.

In case of doubt, the examination board shall make a decision with regard to the recognition.