

# EXAMINATION REGULATIONS

for the Bachelor Course of Studies

## **Water Science - Water: Chemistry, Analytics, Microbiology**

at the

University of Duisburg-Essen

of the 17<sup>th</sup> January 2007

On the basis of § 2 Sec. 4 and of § 64 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 31. 10. 2006 (GV. NRW. P. 474), 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 Bachelor's examination regulations govern the final examinations for the course of studies in the Bachelor's programme in Water Science – Water: Chemistry, Analytics, Microbiology at the University of Duisburg-Essen.
- (2) The qualification for the course of studies in the Bachelor's programme in Water Science - Water: Chemistry, Analytics, Microbiology is acquired through the certificate of entrance (general entrance level or subject-specific entrance level) or by a certificate recognised as being equivalent by a statutory regulation or by the appropriate state department
- (3) In accordance with § 49 Sec. 10 Hochschulgesetz, the qualification stated in Sec. 2 of these regulations can be disregarded if the applicant can demonstrate particular suitability for the course of studies in the subject within the framework of a qualifying examination and can demonstrate a general level of education that meets the requirements set by the University of Duisburg-Essen.

The written application for admission to the qualifying examination is to be submitted to the examination committee. A one-page application with an explanation of the motives for the desired course of studies, a detailed curriculum vitae and copies of relevant documents detailing the previous course of education (school reports, training certificates, references etc.) are to be included.

The admission examination consists of a three-hour written examination and an oral examination of 30 to 45 minutes. The subject matter includes the necessary fundamental knowledge of chemistry, biology, mathematics and physics required for the course of studies in the subject "Water Science: Water, Chemistry, Analytics, Microbiology" and is orientated at the teaching content of the senior grades of grammar schools. The oral examination is conducted by two university lecturers from different subjects in chemistry. The admission examination is passed when both parts of the examination have been passed.

The chairperson of the examination board shall issue a certificate regarding the result of the qualifying examination. A notification with an explanation of legal remedy shall be issued in the event of a failed examination.

The examination committee responsible for carrying out the qualifying examinations is

nominated for one semester at a time by the examination committee.

- (4) 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.

## **§ 2**

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

- (1) The course of studies in the Bachelor's programme in Water Science - Water: Chemistry, Analytics, Microbiology 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 scientific work, of the critical classification of scientific findings and of responsibility for their actions. The course of studies is intended especially to convey knowledge and abilities that are designed to enable the student to carry out scientific and application-orientated work independently in the fields of chemistry, analytics and microbiology of water.
- (2) The Bachelor's examination constitutes the first occupational qualification. The Bachelor's examination is designed to determine whether students have acquired the fundamental subject knowledge required for the transition to professional practice or to the Master's course of studies, are able to obtain an overview of the coherencies of their subject and possess the ability to apply scientific methods and findings.

## **§ 3**

### **Bachelor's Degree**

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

## **§ 4**

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

- (1) The standard course duration of the Bachelor's programme in Water Science - Water: Chemistry, Analytics, Microbiology, including the preparation time for the Bachelor Thesis and for the full completion of the examinations, is 3 course years or 6 semesters.
- (2) All stages of the course of studies are modularly structured. A module designates a combination of teaching courses, co-ordinated with regard to topic and time, for which the time required for successful participation is quantitatively evaluated with a particular number of ECTS credits. The European Course 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, which 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. All graded modules are linked to examinations that accompany the course. The examination grades will contribute towards the overall grade.
- (3) In the information regarding the progression of the course of studies in the Bachelor's course in Water Science - Water: Chemistry, Analytics, Microbiology (see annex), 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.
- (4) The course of studies can only commence in the winter semester. The examination committee may allow exceptions.

## **§ 5**

### **ECTS Credits**

- (1) In the Bachelor's course in Water Science - Water: Chemistry, Analytics, Microbiology, a total of 180 ECTS credits are to be acquired. Of these
  - 150 ECTS credits are allotted to the examined subject-specific modules that accompany the course of studies

- 7 ECTS credits are allotted to Supplementary Area I (compulsory elective area, key qualifications)
  - 5 ECTS credits are allotted to Supplementary Area II (compulsory elective area, orientated at general natural science education)
  - 6 ECTS credits are allotted to Supplementary Area III (free choice of general studies from the range of classes offered by the University of Duisburg-Essen)
  - 12 ECTS credits are allotted to the Bachelor 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 (cf. § 28 Section 2) for each student in the Bachelor's course of studies in Water Science - Water: Chemistry, Analytics, Microbiology. 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 40 ECTS credits in the first year of the course of studies must attend a specialised course guidance service. Precise details are arranged by the examination board.

## § 6

### Types of Teaching Course

- (1) In the Bachelor's course in Water Science - Water: Chemistry, Analytics, Microbiology 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 departments participating in the Bachelor's course of studies in Water Science - Water: Chemistry, Analytics, Microbiology are to form an examination board for the organisation of the examinations and for the other examination-related tasks set by these examinations regulations. The participating departments are to agree upon the way in which the examination board is composed.
- (2) The examination board is comprised of the chairperson, his or her deputy and five other members. The chairperson, his or her deputy and two other members are elected by the departmental council from the group of university lecturers, 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 chairperson and the deputy. The period of office of the members from the group of university lecturers 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 regard 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 chairperson; this does not apply to decisions concerning protests or to the report to the departmental council.

- (5) The chairperson convenes the examination board. He or she 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 university lecturers and at least one further member with the authority to vote are present in addition to the chairperson or the deputy. It makes decisions with a simple majority. The chairperson 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. If they have not already been sworn to secrecy due to a civil service or employment relationship, they are to be sworn to secrecy by the chairperson 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 Bachelor'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 course of studies 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 that 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 Bachelor's course in Water Science - Water: Chemistry, Analytics, Microbiology 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 and vocational degree course units developed by the state of North Rhine-Westphalia in co-operation with other states and the Federation. In addition, Section 2 is also valid for study time, course work and examination work which has been performed in other academic establishments, in particular at state or officially recognised professional academies as well as at technical colleges, engineering colleges and officer universities of the former German Democratic Republic.
- (4) Work that 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.

This translation is only intended to provide information. The original German text is the sole legally binding version.

- (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 § 49 Sec. 11 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) Applicants for the course of studies who have already taken the preliminary diploma in a comparable diploma course of studies shall be admitted into the fifth semester without the need for examination for equivalence.
- (7) 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.
- (8) 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.
- (9) 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 that 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 Bachelor'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 chairperson. As a rule, the teacher responsible for the teaching 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 Bachelor Thesis. Consideration is to be given to the proposal as far as possible. However, the proposals do not constitute an entitlement.

## **II. Bachelor's Examination**

### **§ 10**

#### **Admission to the Bachelor's Examination**

- (1) The examination board shall set deadlines for applications for admission to the Bachelor's examination. The following is to be attached to the application:
  1. Evidence that the admission prerequisites stated in § 1 are given,
  2. A declaration stating whether the student has already finally failed a Bachelor's examination in the same or a similar course of studies or a degree pre-examination, a degree examination, an interim examination or a Magister examination in a similar course of studies and whether they are already undertaking one of the aforementioned examination procedures.
  
- (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 Bachelor's examination is comprised of module and part module examinations that accompany the course of studies and the Bachelor Thesis (§ 15) that concludes the course of studies.
  
- (2) The 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 coherencies. Either one module examination or several module part examinations can be taken within a module.

- (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 board. With the registration, the students commit themselves to undertaking the examination on one of the two possible dates in accordance with Section 3. In the event of the student failing these examinations he or she is to observe the repeat dates that follow immediately, in accordance with § 16, Section 2.
- (5) If the student provides credible evidence by presenting a medical certificate that he or she 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 chairperson 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 Bachelor 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 an oral examination the candidate is to provide evidence that he or she is aware of the coherencies in the field of the examination and that he or she is able to classify specialised questions within these coherencies. In addition, it is to be established by the oral examination that he or she 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. The duration is to be orientated proportionately at the number of ECTS credits to be acquired.
- (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.
- (5) Students who wish to take the same examination at a later examination date may be admitted as hearers subject to the space available, unless the student being examined objects. Admittance does not extend to the consultation and announcement of the examination results.

## **§ 14**

### **Written Examinations**

- (1) In a written examination, the candidate is to provide evidence that he or she is able to identify and find ways to solve a problem from the subject field of the examination using the common methods of his or her 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. The student is to be given the opportunity to view the examination work. Precise details are arranged by the examination board.
- (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

### Bachelor Thesis

- (1) The Bachelor Thesis is a piece of examination work that concludes the scientific education in the Bachelor's course of studies in Water Science – Water: Chemistry, Analytics, Microbiology. At the time of registration for the Bachelor Thesis, the student is to stipulate the subject in which the Bachelor Thesis is to be written. The Bachelor Thesis is to demonstrate that the student possesses the ability to develop a problem from the subject fields of chemistry, analytics, microbiology or process technology independently and according to scientific methods within a predefined period of time.
- (2) Only those who have received a total of 150 ECTS credits can be admitted to the Bachelor Thesis.
- (3) The subject of the Bachelor Thesis shall be set and supervised by a university lecturer or a university teacher or a private lecturer, who teaches courses in the Bachelor's course of studies in Water Science – Water: Chemistry, Analytics, Microbiology. The student has the right to propose the subject of the Bachelor Thesis. If the Bachelor 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. Due to the international nature of the subject "Water Science – Water: Chemistry, Analytics, Microbiology", as a rule applications by students to compile the Bachelor thesis abroad shall be approved. Upon application from the student, the chairperson of the examination board ensures that the student receives a topic for a Bachelor Thesis in good time. The moment of issue of the topic of the Bachelor Thesis is to be entered into the record held by the chairperson of the examination board through which it is issued.
- (4) The development period for the Bachelor Thesis is 10 weeks (= 12 ECTS credits), which are to be achieved within 4 months. In individual cases, the examination board may extend the development time by up to 1 month upon justified application by the student, provided that a corresponding application is made to the chairperson of the examination board in writing two weeks at the latest before the deadline for the Bachelor Thesis. The topic and the task formulation of the Bachelor 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) In justified cases, the Bachelor Thesis can be admitted in the form of a piece of group work, if the contribution from each individual student is clearly distinguishable and able to be evaluated by providing details of sections, page numbers or other objective criteria that enable a clear demarcation of each individual piece of work and which also satisfy the requirements of Section 1.
- (6) The Bachelor 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 Bachelor Thesis, the student is to give written assurance that he or she has written his or her thesis, or the appropriate marked section in the case of a group thesis, independently and that he or she 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 Bachelor Thesis is not submitted before the deadline then it shall be graded with 0 Grade Points.
- (7) As a rule, the Bachelor Thesis is to be justifiably graded by two examiners; the primary examiner (tutor) is to be the examiner who set the topic of the final thesis. Exceptions 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 one of the departments that are substantially involved in the Bachelor's course of studies in Water Science - Water: Chemistry, Analytics, Microbiology 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 Bachelor 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 Bachelor Thesis. In this case, the grade is formed from the arithmetic average of the two better grades. However, the Bachelor 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.
- (8) 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 Bachelor 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 Bachelor Thesis may not be repeated. The examination board shall decide upon exceptions. In the case of examinations that have been failed for the final time, the student shall receive notification with an explanation on the rights of appeal.
- (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. The first repeat examination date is in the last week of the lecture-free period or in the first week of the lecture period of the semester after next. The second repeat date is identical with the first examination date of the semester after next. If the examination is not passed on the first date in accordance with § 11 Section 3, then the first repeat can be undertaken on the second date in accordance with § 11 Section 3.
- (3) If a second repeat of the examination is also failed, then a supplementary oral examination in accordance with § 17 shall take place with regard to the examination concerned.
- (4) A failed practical or a failed Bachelor Thesis may be repeated once. However, rejection of the topic of the second Bachelor 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 Bachelor 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 or she is aware of the coherencies in the field of the examination and that he or she 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 Bachelor's examination, is finally failed.

## **§ 18**

### **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 that he or she is obliged to attend without previously providing valid reasons or if he or she 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 or she has provided evidence of the inability to be examined by presenting a medical certificate, then the attempt is not evaluated. In this case, he or she 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 or her sole care.

- (3) If the student attempts to influence the result of his or her work by deception, which also includes plagiarism, 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 that incriminate the student are to be communicated to him or her 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 or her 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 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 Bachelor's Examination**

- (1) The Bachelor's examination is passed if all examinations in accordance with § 11 and the Bachelor Thesis in accordance with § 15 are concluded successfully and 180 ECTS credits have been acquired.
- (2) The Bachelor'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 Bachelor'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 Bachelor'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	Conventional Grade System	
100-96	1.0	Very good
95-91	1.3	Very good
90-86	1.7	Good
85-81	2.0	Good
80-76	2.3	Good
75-71	2.7	Satisfactory
70-66	3.0	Satisfactory
65-61	3.3	Satisfactory
60-56	3.7	Sufficient
55-50	4.0	Sufficient
49-0	5.0	Not sufficient

- (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 that belongs 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 Bachelor's examination is calculated as a weighted average grade (Grade Point Average, GPA).
  
- (2) The calculation of the overall grade of the Bachelor'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 Bachelor 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 Bachelor Thesis, divided by the total of all the ECTS credits acquired in the subjects of the compulsory and compulsory elective fields and in the Bachelor Thesis, results in the weighted average grade (Grade Point Average, GPA) of the entire Bachelor's examination. (Ungraded work, e.g. practicals and work recognised without grade, are not taken into consideration in the calculation of the average grade). In the formation of the grades (Grade Points),



the value is rounded up to a whole number (commercial rounding). An example calculation is provided in Annex 3 of these examination regulations.

- (3) ECTS grades in accordance with § 21 Section 1 are additionally assigned to the overall grade for the Bachelor's examination for grading. They provide information about the relative performance of the students and are also included in the Diploma Supplement. The students are awarded the following ECTS grades:

A	Pass	the best 10 %
B	Pass	the next 25 %
C	Pass	the next 30 %
D	Pass	the next 25 %
E	Pass	the next 10 %

- (4) If the Bachelor Thesis is graded with more than 95 points and the Grade Point Average for the Bachelor'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 Section 1.

## **§ 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 Bachelor's examination, he or she 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 Packages,
- the designation and grades of the completed modules with the acquired ECTS credits,
- the subject and the grade of the Bachelor Thesis with the acquired ECTS credits,
- subject grades with the acquired ECTS credits,
- the overall grade with the total ECTS credits acquired and the assigned ECTS grade,
- upon application by the student, the period of subject course time required to complete the Bachelor'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 chairperson 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 Bachelor's examination was performed. If the student submits a corresponding application to the examination board by the date of the registration of the Bachelor Thesis in accordance with § 15, he or she 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.
- (3) The certificate regarding the passed Bachelor's examination is an equivalent pre-academic qualification to the certificate of general university entrance qualification in accordance with § 3 No. 4 Qualifikationsverordnung – QVO (Qualification Ordinance). Students with the advanced technical college entrance qualification therefore acquire the general university entrance qualification upon passing the Bachelor's examination.

## **§ 26**

### **Bachelor'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 Bachelor's degree in accordance with § 3 is attested in the diploma. The diploma shall be signed by the chairperson 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 Bachelor Thesis in accordance with § 15, he or she will receive an additional English version of the Bachelor's diploma.

## **III. Final Provisions**

### **§ 27**

#### **Invalidity of the Bachelor's Examination, Denial of the Bachelor'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 on the legal consequences 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

- (1) Upon application, students are to be granted the opportunity to inspect their written examination work within one year after the completion of individual examinations or following completed part examinations.
- (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
    - Current grade index
    - Date of completion of the course of studies
    - Date of issue of the certificate and the diploma
  - b) Copies of the certificates and the Bachelor's 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 be held electronically.

## **§ 29**

### **Area of Validity**

These examination regulations are applicable to all students who have registered for the Bachelor's programme in Water Science – Water: Chemistry, Analytics, Microbiology at the University of Duisburg-Essen for the first time in the winter semester 2006/2007.

## **§ 30**

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

These examination regulations shall come into effect from the 1<sup>st</sup> October 2006. 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 27.04.2006.

Duisburg/Essen, 17<sup>th</sup> January 2007

For the Principal  
of the University of Duisburg-Essen  
The Chancellor  
pp.  
Eva Lindenberg-Wendler

**Annex 1:  
Legend for Annex 2 and 3**

Cr	=	ECTS Credits
GP	=	Grade Points for an examination
CP	=	Credit Points for an examination = Grade Points of an examination multiplied with the credits
GPA	=	Grade Point Average (weighted average grade) of the module (Annex 2) or Bachelor's examination (Annex 3) = $\sum$ 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 = GPxCr</b>	<b>GPA</b>
Part / Teaching Course 1 in Module XXX	4	95	380	
Part / Teaching Course 2 in Module XXX	6	68	408	
Part / Teaching Course 3 in Module XXX	3	52	156	
<b>Total</b>	<b>13</b>		<b>944</b>	<b>73</b>

The student concerned therefore has acquired 13 Cr (= ECTS Credits) in this module and has achieved an average grade of  $944 / 13 = 72.6153 = 73$  (commercially rounded up).

### Annex 3:

#### Example for the Calculation of the Overall Grade

Module	Credits	Module grade (Grade Points)	Credit Points = Module grade x Credits	GPA	
Analytical Chemistry I	10	64	<b>640</b>		
Analytical Chemistry II	10	55	<b>550</b>		
Water Chemistry and Analytics	10	72	<b>720</b>		
Practical Water Chemistry and Analytics	5	84	<b>420</b>		
Biology	6	94	<b>564</b>		
Microbiology	11	88	<b>968</b>		
Aquatic Microbiology	7	75	<b>525</b>		
Biochemistry	8	93	<b>744</b>		
General Chemistry	12	55	<b>660</b>		
Inorganic Chemistry 1	10	59	<b>590</b>		
Organic Chemistry 1	11	64	<b>704</b>		
Practical Organic Chemistry	5	63	<b>315</b>		
Physical Chemistry 1	10	98	<b>980</b>		
Practical Physical Chemistry	5	87	<b>435</b>		
Thermic Process Technology Water	8	98	<b>784</b>		
Mathematics	5	50	<b>250</b>		
Physics	10	51	<b>510</b>		
Toxicology, Hazardous Substance Law, Business Studies	4	66	<b>264</b>		
Electronic Data Processing	3	58	<b>174</b>		
Module E1 (Key Qualifications)	7	78	<b>624</b>		
Module E2 (General Natural Science Education)	5	84	<b>420</b>		
Module E3 (General Studies)	6	95	<b>855</b>		
Bachelor Thesis	12	90	<b>1080</b>		
<b>Total</b>	<b>180</b>		<b>13776</b>		
<b>Overall Grade</b>			<b>13776/180=76.53</b>		<b>77</b>

## Annex

### **General Structure of the Course and Standard Study Plan**

The Bachelor's course of studies in Water Science – Water: Chemistry, Analytics, Microbiology is characterised by a chemistry-orientated education with interdisciplinary elements, in particular in the field of biology/microbiology. In addition, the fundamentals of mathematics, statistics and physics are imparted.

Complete teaching sheets on all modules can be found in the module handbook.



Bachelor of Science: Water Science – Water: Chemistry, Analytics, Microbiology / Overview of the Modules

Module	Sem.	Module Size in Credits	Teaching Course	HPW		HPW	Credits	Category	Pre-requisites	Examination
				L	E					
<b>Compulsory Area: 150 Credits must be obtained</b>										
General Chemistry	1	12	General Chemistry	4	2		6	Fundamentals	none	Written Exam for Module
			Practical General Chemistry			10	10			
Analytical Chemistry 1	2 3	10	Analytical Chemistry I	2	1		3	Fundamentals	none	Written Exam for Module
			Statistics	2	1		3			
Analytical Chemistry 2	4,5	10	Analytical Chemistry II	2	1		3	Fundamentals	none	Written Exam for Module
			Practical Analytical Chemistry		1	6	7		5	
Inorganic Chemistry 1	2,3	10	Inorganic Chemistry I	2	1		3	Fundamentals	none	Written Exam for Module
			Inorganic Chemistry II	2	1		3			
Aquatic Microbiology	3,4	7	Water Hygiene	1			1	Fundamentals	none	Written Exam for Module
			Aquatic Microbiology	2	1		3			
Biochemistry	5	8	Introduction to Biochemistry	2			2	Fundamentals	none	Written Exam for Module
			Practical Biochemistry			7	7			
Biology	1,2	6	Fundamentals of Biology	1	1		2	Fundamentals	none	Written Exam for Module
			Fundamentals of Molecular Biology	2			2			
EDP	1	3	EDP		2		2	Interdisciplinary	none	
Mathematics	1	5	Mathematics	2	1		3	Fundamentals	none	Written Exam for Module

Bachelor of Science: Water Science – Water: Chemistry, Analytics, Microbiology / Overview of the Modules

Module	Sem.	Module Size in Credits	Teaching Course	HPW		Credits	Category	Pre-requisites	Examination		
				L	E					P	Total
<b>Compulsory Area Continued</b>											
Microbiology	2,3	11	Microbiology I	1	1		2	3	Fundamentals	none	Written Exam for Module
			Microbiology II	1	1		2	3			
			Practical Microbiology		1	6	7	5		Lecture Microb. I + II	
Organic Chemistry 1	2,3	11	Organic Chemistry I	2	1		3	5	Fundamentals	none	Written Exam for OC I and OC II
			Organic Chemistry II	3	1		4	6			
Practical Organic Chemistry	4	5	Foundation Practical Organic Chemistry		1	6	7	5	Fundamentals	Written Exam OC I or OC II	
Physics	1,2	10	Physics I	2	1		3	5	Fundamentals	none	Written Exam for Module
			Physics II	2	1		3	5			
Physical Chemistry 1	2,3	10	Physical Chemistry I	2	1		3	5	Fundamentals	none	Written Exam for Module
			Physical Chemistry II	2	1		3	5			
Practical Physical Chemistry	4	5	Foundation Practical Physical Chemistry		1	6	7	5	Fundamentals	Module Physical Chemistry 1	
Practical Water Chemistry and Analytics	6	5	Practical Water Chemistry and Analytics		1	6	7	5	Fundamentals	Module Water Chemistry and Analytics	
Thermic Process Technology Water	5,6	8	Thermic Process Technology Water	2			2	3	Fundamentals	none	Written Exam for Module
			Practical Thermic Process Technology Water		1	6	7	5			
Toxicology, Hazardous Substance Law, Business Studies	4	4	Toxicology	1			1	1	Interdisciplinary	none	Joint Written Exam for Tox. and Haz.
			Hazardous Substance Law	1			1	1			
			Business Studies	2			2	2			
Water Chemistry and Analytics	4,5	10	Water Analytics	2	1		3	5	Fundamentals	none	Written Exam for Module
			Water Chemistry	2	1		3	5			

## Bachelor of Science: Water Science – Water: Chemistry, Analytics, Microbiology / Overview of the Modules

### **Supplementary Area I – 7 Credits – Key Qualifications**

Teaching classes are determined by the examination board in accordance with the current range offered by the university.  
Additional teaching classes may be taken following application to the examination board.

Bachelor of Science: Water Science – Water: Chemistry, Analytics, Microbiology / Overview of the Modules

Module	Sem.	Module Size in Credits	Teaching Course	HPW			Credits	Category	Pre-requisites	Examination	
				L	E	P					Total
<b>Supplementary Area II – 5 Credits – general education, natural science-orientated</b> Additional teaching classes may be taken following application to the examination board											
Inorganic Chemistry 2	5	5	Inorganic Chemistry III	2	1		3	5	Fundamentals	none	Written Exam or Coll.
Inorganic Chemistry 3	4 o.6	5	Inorganic Chemistry IV	2	1		3	5	Fundamentals	none	Written Exam or Coll.
Biotechnology	5	3	Micro-organisms in Biotechnology	2			2	3	Fundamentals	none	Project + Presentation
Didactics of Chemistry	4 o.6	5	Didactics of Chemistry	2	1		3	5	Fundamentals	none	Project + Presentation
Geology	5	5	Introduction to Geology	2			2	3	Fundamentals	none	Written Exam for Module
			Petrological Exercises	1			1	2			
Organic Chemistry 2	5	5	Organic Chemistry III	2	2		4	5	Fundamentals	none	Written Exam or Coll.
Physical Chemistry 2	4 o.6	5	Physical Chemistry III	2	1		3	5	Fundamentals	none	Written Exam or Coll.
<b>Supplementary Area III – 6 Credits – General Studies</b>											
		6	Free choice from the range offered by the university					6	Interdisciplinary	none	
<b>Bachelor Thesis – 12 Credits must be allocated</b>											
Bachelor Thesis	6	12	Bachelor Thesis			12		12	Fundamentals	150 Credits	Paper

Bachelor of Science: Water Science – Water: Chemistry, Analytics, Microbiology / Overview of the Modules

## Summary

Compulsory Part Bachelor's Course	Analytical Chemistry Area	35 Cr.
	Biosciences Area	32 Cr.
	Chemistry Area	61 Cr.
	Additional Subjects Area	22 Cr.
Compulsory Elective Part Bachelor's Course	Supplementary Area I General Education, Natural Science-Orientated	7 Cr.
	Supplementary Area II Key Qualifications	5 Cr.
	Supplementary Area III General Studies	6 Cr.
Bachelor Thesis	Bachelor Thesis	12 Cr.
<b>Total</b>		<b>180 Cr.</b>

## Study Plan

### Bachelor of Science: Water Science – Water: Chemistry, Analytics, Microbiology

<b>Module</b>	<b>Class</b>	<b>SWH</b>	<b>Cr.</b>	<b>Examinations</b>
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<b>1<sup>st</sup> Semester</b>				
Module	Class	SWH	Cr.	Examinations
General Chemistry	General Chemistry	6	6	Written Examination for Module General Chemistry
General Chemistry	Practical General Chemistry	10	6	
Biology	Fundamentals of Biology	2	3	
EDP	EDP	2	3	
Mathematics	Mathematics	3	5	Written Examination for Module Mathematics
Physics	Physics I	3	5	
<b>Total</b>		<b>26</b>	<b>28</b>	<b>2 Exams</b>

<b>2<sup>nd</sup> Semester</b>				
Module	Class	SWH	Cr.	Examinations
Analytical Chemistry 1	Analytical Chemistry I	3	5	
Inorganic Chemistry 1	Inorganic Chemistry I	3	5	
Biology	Fundamentals of Molecular Biology	2	3	Written Examination for Module Biology
Microbiology	Microbiology I	2	3	
Organic Chemistry 1	Organic Chemistry I	3	5	Written Examination for Lecture OC I
Physics	Physics II	3	5	Written Examination for Module Physics
Physical Chemistry 1	Physical Chemistry I	3	5	
<b>Total</b>		<b>19</b>	<b>31</b>	<b>3 Exams</b>

<b>3<sup>rd</sup> Semester</b>				
Module	Class	SWH	Cr.	Examinations
Analytical Chemistry 1	Statistics	3	5	Written Examination for Module Analytical Chemistry 1
Inorganic Chemistry 1	Inorganic Chemistry II	3	5	Written Examination for Module Inorganic Chemistry 1
Aqua. Microbiology	Water Hygiene	1	2	
Microbiology	Microbiology II	2	3	Written Examination for Module Microbiology
Microbiology	Practical Microbiology	7	5	
Organic Chemistry 1	Organic Chemistry II	4	6	Written Examination for Lecture OC II
Physical Chemistry 1	Physical Chemistry II	3	5	Written Examination for Module Physical Chemistry 1
Supplementary Area	Supplementary Area I and II and III	4	3	Up to 1 Examination
<b>Total</b>		<b>27</b>	<b>34</b>	<b>Up to 6 Exams</b>

<b>4<sup>th</sup> Semester</b>				
Module	Class	SWH	Cr.	Examinations
Analytical Chemistry 2	Analytical Chemistry II	3	5	Written Examination for Module Analytical Chemistry 2
Aquat. Microbiology	Aquatic Microbiology	3	5	Written Examination for Module Aquatic Microbiology

Practical Physical Chemistry	Foundation Practical Physical Chemistry	8	5	
Tox, Haz, BS	Toxicology	1	1	Joint Written Examination for Tox. + Haz.
Tox, Haz, BS	Hazardous Substances Law	1	1	
Tox, Haz, BS	Business Studies	2	2	Written Examination for Lecture BS
Water Chemistry and Analytics	Water Analytics	3	5	
Practical Organic Chemistry	Practical Organic Chemistry	7	5	
	<b>Total</b>	<b>28</b>	<b>29</b>	<b>Up to 6 Exams</b>

	<b>5<sup>th</sup> Semester</b>			
Analytical Chemistry 2	Practical Analytical Chemistry	7	5	
Biochemistry	Introduction to Biochemistry	2	3	Written Examination for Module Biochemistry
Biochemistry	Practical Biochemistry	7	5	
Supplementary Area	Supplementary Area I and II and III	9	8	Up to 2 Examinations
Thermic Process Technology Water	Thermic Process Technology Water	2	3	Written Examination for Module Lecture TPTW
Water Chemistry and Analytics	Water Chemistry	3	5	Written Examination for Module Water Chemistry and Analytics
	<b>Total</b>	<b>30</b>	<b>29</b>	<b>Up to 5 Exams</b>

	<b>6<sup>th</sup> Semester</b>			
Bachelor Thesis	Bachelor Thesis		12	Paper
Supplementary Area	Supplementary Area I and II and III	7	7	Up to 2 Examinations
Practical Water Chemistry and Analytics	Practical Water Chemistry and Analytics	7	5	
Thermic Process Technology Water	Practical Thermic Process Technology Water	7	5	
	<b>Total</b>	<b>21</b>	<b>29</b>	<b>Up to 3 Exams</b>
	<b>Overall Total</b>		<b>180</b>	<b>Up to 25 Exams</b>