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Examination regulations for the Master's programs
"Natural Resources Management and Development"
"Integrated Water Resources Management"
„Renewable Energy Management“, leading to the
academic degree Master of Science at the Faculty
of Spatial Development and Infrastructure Systems
at Technische Hochschule Köln – University of
Applied Sciences

of October 26, 2022

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This is a translation of the original German document. For all legal purposes, only the German version of the examination regulations shall be considered binding.

Technology
Arts Sciences
TH Köln

Examination regulations
for the degree programs
"Natural Resources Management and Development"
"Integrated Water Resources Management"
"Renewable Energy Management"

leading to the academic degree Master of Science
at the Faculty of Spatial Development and Infrastructure Systems
at Technische Hochschule Köln – University of Applied Sciences

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By virtue of §§ 2 (4) and 64 (1) of the North Rhine-Westphalia Higher Education Act (*Gesetz über die Hochschulen des Landes Nordrhein-Westfalen - Hochschulgesetz (HG)*) of September 16, 2014 (*Gesetz und Verordnungsblatt NRW (GV. NRW)*, p. 547), in the version of July 12, 2019 (*GV. NRW* p. 425), last amended by Article 1 of the act of June 30, 2021 (*GV. NRW*, p. 780b), Technische Hochschule Köln – University of Applied Sciences has adopted the following examination regulations by statute:

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I General information

§ 1 Applicability of the examination regulations; module catalog and study plan

- (1) These Master's examination regulations are to administer full-time studies and examinations of the Master's programs "Natural Resources Management and Development", "Integrated Water Resources Management" and "Renewable Energy Management" at Technische Hochschule Köln - University of Applied Sciences.
- (2) Based on these examination regulations, Technische Hochschule Köln establishes a study plan (see annex 1) and a module catalog. The module catalog outlines the course contents, intended learning outcomes and structure of the individual modules, taking developments in the fields of science and university teaching as well as profession-specific requirements into account. The study plan provides students with a guideline for adequately scheduling their studies.
- (3) As an alternative to the full-time program, the faculty provides an alternative study plan for part-time students in accordance with § 62a (2) North Rhine-Westphalia Higher Education Act (*Gesetz über die Hochschulen des Landes Nordrhein-Westfalen - Hochschulgesetz* (HG)). The standard program duration as stated in § 4 remains unaffected.

§ 2 Objectives of the program; purpose of the examinations; academic degree

- (1) Students who pass the Master's examination are awarded a university degree qualifying them to exercise professional work in the field relevant to the program and entitling them to apply for admission to doctoral studies in accordance with § 67 (4), sentence 1, No. 3 HG.
- (2) Taking general study objectives (§ 58 HG) into account, the degree program, which is to prepare students for the Master's examination, is designed to convey application-oriented topics of the discipline on the basis of scientific findings. (and aims to enable them to analyze and manage natural resources holistically, taking into account social and economic systems and their interactions.)
- (3) Lectures are generally offered in English; a sufficient number of modules in English is guaranteed.
- (4) The Master's examination (§ 5) is to determine whether students have acquired further specialized knowledge required to exercise work in their profession independently (employability) and are prepared to assume social responsibility in a globalized world (global citizenship). It is also to determine whether they are able to work and conduct research independently and on the basis of scientific findings and methods.
- (5) Students who have passed the examinations listed in § 5 have completed an academic degree program, qualifying them to exercise work in the designated profession. Based on the successful completion of all examinations, the academic degree "Master of Science" is awarded in accordance with the regulations stated hereinafter.

§ 3 Admission requirements

- (1) Admission to the Master's program requires the successful completion of a university program with a substantial proportion (at least 15 ECTS) of course content relevant to the desired degree program and at least a Bachelor's degree and a final grade of at least "satisfactory" (3.0).
- (2) A degree program is considered relevant if its content is subject-related in accordance with the study objectives set out in § 2 (2) and, in particular, contains direct references to the respective

natural renewable resources of water, energy, soil, flora and fauna and their efficient use and management. For the programs "Integrated Water Resources Management" and "Natural Resources Management and Development", relevance is also justified by direct references to the natural, rural or urban areas of the tropics and subtropics. The selection committee decides on the suitability of a program.

- (3) Applicants participate in a selection procedure. Based on the documents submitted as part of the application, the following criteria will be assessed during the selection process:
 - The content of the previous degree program and its relevance to the field of study in accordance with subsection 2
 - Academic and professional background to date
 - Personal motivation for enrolling in the program
 - The ability to work scientifically based on an outline of a research project for the subsequent Master's thesis
 Further details on the selection procedure and the criteria are published in the information on admission requirements.
- (4) The faculty forms a selection committee to carry out the selection procedure. For each program, this includes
 - two professors and
 - one representative from the group of academic staff.
 The members of the selection committee are appointed by the faculty council.
- (5) Applicants are required to have English language proficiency at the level of academic competence (TOEFL level 79 or equivalent) in order to be granted admission. Appropriate proof is to be presented before enrollment, unless the English language requirement is already met with the applicant's higher education entrance qualification.
- (6) In exceptional cases, students may be admitted to the Master's program prior to having met the admission requirements stated in subsection 1 if they can provide proof of meeting the requirements within six months of the day of enrollment.
- (7) Admission is to be denied if the applicant has (within the jurisdiction of the German constitution) irreversibly failed (i.e. failed with no option to repeat) or lost the right to take an examination in the chosen program and if this examination is mandatory according to the examination regulations. This also applies to programs whose content has strong similarities to that of the program described in these examination regulations.

§ 4 Standard program duration (*Regelstudienzeit*)

- (1) The standard program duration for students enrolled in the full-time program (annex 1) is four semesters. In compliance with the European Credit Transfer System (ECTS), students are awarded a total of 120 credits (§ 12). The standard program duration includes the examination period.
- (2) New first-year students can enroll in the winter semester.

§ 5 Scope and structure of examinations; examination deadlines

- (1) The program is divided into individual modules. Refer to § 23 and the study plan (annex 1) for details on the program structure. A student's successful completion of the program is to be determined by the examinations taken throughout the program (module examinations) as well as the Master's thesis and final oral examination. Group examinations are permissible.
- (2) Module examinations are to be held immediately after the corresponding module has been concluded according to the study plan.
- (3) The progression of studies, examination procedures and study plan are to be designed in a way

that makes it possible for students to take all required examinations within the standard program duration. In accordance with § 26, students adhering to the study plan must have registered for the Master's thesis by the end of the penultimate semester.

- (4) Examination procedures are to make allowance for the legal provisions for maternity and parental leave periods as well as the leave for the nursing and care of spouses, registered partners, relatives in direct line of descent or brothers and sisters in-law if they are in need of nursing or care. Respective requests are to be submitted in due time before the examination. This also applies for students who can prove – by submitting a medical certificate or in a different manner – that they are in disadvantage due to a permanent physical disability or chronic disease.

§ 6 Examination board

- (1) The Faculty of Spatial Development and Infrastructure Systems is to establish an examination board to be in charge of the organization of examinations and the arrangement of the duties assigned to it by these examination regulations. The examination board shall be an independent body of the faculty.
- (2) The examination board is elected by the faculty council and is made up of five persons:
 - a) chairperson and vice-chairperson selected from the pool of professors;
 - b) one additional member selected from the pool of professors;
 - c) one member selected from the pool of academic staff;
 - d) one member selected from the pool of students.
- (3) Deputies are to be elected for all members of the examination board except for the chairperson and the vice-chairperson. In the event that the chairperson and vice-chairperson are both absent, the members selected from the pool of professors (subsection 2 b) will move up and assume the roles of chairperson and vice-chairperson (subsection 2 a). The members of the board employed in full-time positions at the university and their deputies have tenure of two years; the student members and their deputies have tenure of one year. Re-election is permissible.

§ 7 Rights and duties of the examination board

- (1) The examination board is responsible for the organization of examinations. It ensures that the examination regulations are complied with and that examinations are conducted properly. In particular, it is to decide on objections brought forward against decisions that were made in exam-related matters, appoints examiners and determines the type and modalities of examinations (see § 16 (5)).
- (2) The chairperson of the examination board decides on applications for reasonable adjustments (§ 18 (4)), the appointment of examiners for the Master's thesis (§ 26 (2) and (4), § 28 (2)), extensions of the submission deadline of the Master's thesis (§ 27 (2)) and requests to withdraw from examinations (§ 15 (2)). Other tasks of the examination board (e.g. recognition of credits) are usually also transferred to its chairperson. It is possible to transfer individual tasks to other members of the examination board. In its first session after the beginning of the academic year, the examination board decides on the transfer of duties as described in sentences 2 and 3. Duties are transferred for the duration of the academic year.
- (3) Additionally, the examination board is to report to the faculty council on developments related to examinations and the duration of studies upon request. It gives advice on potential reforms of the examination regulations, the module catalog and the study plans. The examination board

may transfer its regular duties (in particular decisions on requests for withdrawals or credit transfers) to the chairperson or another member from the pool of professors of the examination board. This does not apply to decisions on objections.

- (4) The members of the examination board and a representative of the Executive Board have the right to be present during examinations. Exempt from this right are student members of the examination board who are to take the examination concerned during the same examination period.
- (5) Sessions of the examination board are not open to the public.

§ 8 Decisions by the examination board

- (1) The examination board meets at least once at the beginning of each semester. Additional meetings can be arranged as required. Meetings usually take place on campus (face-to-face meetings). If the members of the examination board so decide, meetings may also take place entirely or in part in virtual formats. Decisions can also be made (entirely or in part) using video conferencing tools.
- (2) The examination board has a quorum if, in addition to the chairperson or vice-chairperson, one member from the pool of professors and at least two additional members eligible to vote are present. Decisions require a simple majority. In case of a tie, the chairperson has the casting vote. The student member and the research assistant do not contribute to decisions on matters related to education and academics, particularly when it comes to the recognition or other evaluation of examinations and coursework or the appointment of examiners or co-examiners. Moreover, the student member of the examination board does not participate in the debate and decision-making on matters related to examination topics or their own examinations.
- (3) All members of the examination board, their deputies, the examiners as well as co-examiners are to be sworn to official secrecy. If they are not employed in the German public service, they are to be sworn to secrecy by the chairperson of the examination board.
- (4) Negative decisions of the examination board or its chairperson are to be reported to the respective student without delay. If necessary, the student shall be given the opportunity to be heard beforehand.

§ 9 Examiners and co-examiners

- (1) The examination board appoints the examiners and co-examiners. A person may be appointed examiner if they hold at least the qualification that is to be determined by the examination or an equivalent qualification. Examiners must have held an independent teaching position in the subject relevant for the examination or have relevant professional and teaching/training experience. These requirements may only be disregarded if there are compelling reasons. A person may only be appointed co-examiner if they have at least passed the corresponding Master's examination or a comparable examination, or holds a comparable qualification (qualified co-examiner). Examiners are independent for examination purposes.
- (2) If an oral examination is offered by more than one examiner, students may suggest one of them to be their examiner. Students may also suggest an examiner to be their thesis advisor. If possible, a student's suggestion is to be considered.
- (3) The examination board ensures that examination duties are split as evenly as possible among the examiners. The chairperson of the examination board ensures that the students will be notified of the names of their examiners in advance. This shall happen at the same time as the registration for the examination, i.e. usually at least two weeks before the examination or before the topic of the Master's thesis is assigned. Electronic notification is sufficient.

§ 10 Recognition of coursework and examinations

- (1) Coursework and examinations completed within the jurisdiction of the Convention on the Recognition of Qualifications concerning Higher Education in the European Region of April 11, 1997 (BGBl. II 2007; p. 712 - Lisbon Recognition Convention) are to be recognized upon request if it can be proven that they do not considerably differ from the coursework and examinations required. The decision is to be made within six weeks of the submission of all required documents. If the recognition of such examinations and coursework is denied, the university is to issue a substantiated notification on this matter. If it has been proposed to reject the recognition request, the Executive Board may be asked to review the decision.
- (2) Examinations and coursework completed in degree programs outside the jurisdiction of the Lisbon Recognition Convention are to be recognized analogous to subsection 1 upon request.
- (3) Achievements that are not part of a degree program may be recognized as examinations or coursework upon request if they are equivalent to the examinations and coursework required. Such achievements may only account for up to half of the total number of coursework or examinations required for the successful completion of the program.
- (4) For examinations and coursework that have been recognized, students are awarded the number of ECTS credits detailed in the study plan (annex 1). In case of a partial recognition, the number of credits awarded is to be adjusted accordingly.
- (5) Non-graded examinations taken at other universities or in other programs are to be recognized in accordance with subsections 2 and 3. They are to be identified accordingly on the examination certificate and are not accounted for in the calculation of the final grade.
- (6) Examinations and coursework completed in the same degree program or the same module at Technische Hochschule Köln are transferred without separate request.
- (7) The examination board, or a person commissioned by the examination board, is to decide in all cases laid out in subsections 1 to 5. In cases of doubt, it is to consult the examiners responsible for the individual modules.

§ 11 Evaluation of examinations

- (1) Examinations are to be evaluated in a differentiated and comprehensible manner by means of grades. Individual components of the overall evaluation may remain non-graded. Non-graded modules are acceptable in exceptional cases. Upon request of the examination board, examiners are to explain the evaluation in writing. Grades for individual examinations are to be determined by the respective examiner.
- (2) Modules are listed in §§ 23, 24 and/or the study plan.
- (3) The following grades are to be used for the evaluation of examinations:

1.0/1.3	= excellent	=	an outstanding achievement
1.7/2.0/2.3	= good	=	an achievement well above average requirements
2.7/3.0/3.3	= satisfactory	=	an achievement that meets average requirements
3.7/4.0	= sufficient	=	an achievement that meets the requirements despite its shortcomings
5	= insufficient	=	an achievement that does not meet the requirements due to substantial shortcomings

Grades 0.7, 4.3, 4.7 and 5.3 do not exist.

- (4) Calculated grades that differ from the grades listed above are to be determined as follows.

up to 1.5	Grade: "excellent"
above 1.5 to 2.5	Grade: "good"
above 2.5 to 3.5	Grade: "satisfactory"
above 3.5 to 4.0	Grade: "sufficient"
above 4.0	Grade: "insufficient"

For the calculation of grades, only the first decimal is factored in; all other decimals are dropped without rounding.

- (5) If several examiners participate in an examination, they are to jointly evaluate the examination, provided that no other provisions are made hereinafter. Should the evaluations differ from one another, the grade is determined by the arithmetic average of the individual grades as set down in subsection 4.
- (6) An examination is passed if it is graded "sufficient" or better. If a module examination consists of several components (partial or individual examinations), the module is passed if all components are passed. Regulations on retaking examinations are described in § 14.
- (7) Examinations are to be evaluated and students notified of the results within six weeks of the examination. Posting the information on the corresponding bulletin board or on an electronic examination management system is sufficient. Students are to be notified of the results of their Master's thesis within eight weeks.

§ 12 Credits in accordance with the European Credit Transfer System (ECTS)

- (1) Credits are assigned to each module of the Master's program, which makes credit transfers in accordance with the European Credit Transfer System (ECTS) possible. Credits are a quantitative measure of the overall workload that averagely gifted students need to successfully complete a component of the program. This includes courses, preparation and follow-up work for a course, self-study as well as examinations and exam preparation.
- (2) The student workload required to complete the Master's program as detailed in the study plan amounts to 60 credits per academic year. One credit equals a student workload of 25 to 30 hours, thus the workload for students enrolled in the full-time program is 750 to 900 hours per semester during the lecture period and the semester break. This equals 32 to 39 hours per week for 46 weeks a year.
- (3) Students only receive credits if they successfully completed a module. This means that students are awarded the total number of credits for every graded module examination (as described in § 11 (2) and (6)) that has been passed with a grade of at least "sufficient", irrespective of the grade received for the examination. A total of 120 credits are required to successfully complete the Master's program.
- (4) The credits assigned to the individual modules, the Master's thesis and the final oral examination are documented in the study plan (annex 1). Details are provided in the module catalog.
- (5) As per § 10, credits obtained in accordance with the ECTS at other institutions of higher education within and outside the jurisdiction of the German constitution are to be recognized with the number of credits assigned in the current program. In case of a partial recognition, the number of ECTS credits awarded is adjusted accordingly, cf. § 10 (4), sentence 2.

§ 13 Evaluation of examinations in accordance with the ECTS grading scheme

In accordance with § 31 (1), the examination certificate issued to students at the time of graduation includes a grade distribution table that indicates the relative position of the student's final grade. This grade distribution table is based on the requirements of the ECTS and the recommendations by the Standing Conference of the Ministers of Education and Cultural Affairs (*Kultusministerkonferenz*) and the German Rector's Conference (*Hochschulrektorenkonferenz*).

§ 14 Retaking examinations

- (1) If a student does not pass the Master's thesis or the final oral examination, he/she may retake each examination once. Module examinations may be retaken twice. It is recommended to retake failed examinations within one year of the failed attempt.
- (2) An examination graded at least "sufficient" may not be retaken.
- (3) Students who did not pass a module examination that is made up of several individual components or a combination of different types of examination, only need to retake the component that they did not pass.

§ 15 Absence; withdrawal from examinations; cheating

- (1) An examination is deemed "insufficient" (5.0), or "not passed" for non-graded examinations, if a student fails to show up for an examination and is not able to present a good reason for their absence. An examination is also deemed "insufficient" if a student withdraws from it without good reason after the examination has begun or if they do not submit the examination within the given time frame. Sentence 1 also applies accordingly if students fail to submit their Master's thesis by the submission deadline.
- (2) Students who miss or withdraw from an examination must immediately report in writing to the examination board and present an explanation and appropriate evidence. In case of sickness, students are required to submit a comprehensible medical certificate confirming their incapability of taking the examination. Students who withdraw from an examination after its start are required to notify the proctor who will record the withdrawal in the examination records. If the examination board accepts the student's explanation, the student will be notified that they may request to register for the respective examination again.
- (3) If a student attempts to manipulate the result of their examination by cheating or by using unauthorized resources, the examination concerned will be graded "insufficient" (5.0) or "not passed". Carrying unauthorized resources may already be considered cheating. Unauthorized resources are all documents, electronic resources, electronic devices or other resources that are not explicitly allowed to be used during the respective examination. Students are required to identify other people's intellectual property (text passages, images, statistics, etc. by other authors from offline or online sources) adopted in their (written) papers or examinations as quotations (also refer to the *Richtlinien des Präsidiums der TH Köln zur Sicherung guter wissenschaftlicher Praxis und zum Umgang mit wissenschaftlichem Fehlverhalten* (Guideline by TH Köln's Executive Board on the assurance of good scientific practice and handling of academic misconduct) of January 8, 2016 in its current version). If any solution artifacts (e.g. program codes, technical drawings, technical or scientific models and simulations) developed by others are adopted into own technical solution documents without indicating the source, this is also considered plagiarism. In case of alleged cheating, the chairperson of the examination board is entitled, without prejudice to the Administrative Procedures Act for North Rhine-Westphalia (*Verwaltungsverfahrensgesetz, VwVfG NRW*), to question the examinee to determine evidence on the matter and to give the examinee the opportunity to present an explanation. Examiners may be asked to participate in the questioning. In case of repeated or

otherwise serious cheating (e.g. major plagiarism, i.e. copying of longer text passages not marked as quotations, or the skillful concealment of plagiarism), the examination board may decide that the examination is deemed irreversibly failed (i.e. failed without option to retake). Additionally, the examinee may be temporarily or permanently removed from the student register.

- (4) Anyone who disrupts the proper course of an examination may be expelled from the examination by the examiner or proctor, usually after prior warning. In such a case, the examination concerned is to be graded “insufficient” (5.0) or “not passed”.
- (5) The affected student has the right to demand that decisions as described in subsections 3 and 4 are reviewed by the examination board. The reasons for the sanctions as described in subsections 3 and 4 are to be included in the written records of the examination (examination records) or otherwise put on record. Whether an examination may be retaken in cases described in subsections 3 and 4 may be subject to certain conditions, such as the successful participation in a seminar or workshop on academic work.
- (6) Additionally, cheating (as per subsection 3) or disruption of the examination (as per subsection 4) may be considered an administrative offense and be punished by a fine. Refer to § 63 (5) of the HG for details.

II Module examinations

§ 16 Objectives, scope and type of module examinations

- (1) The Master's program is divided into individual modules, each of which concludes with an examination. The examination may consist of several parts. A module may extend over one or two semesters. The contents of a module may be taught in one or more courses with different methods of teaching and study. Pursuant to §§ 19 to 22, a module examination may be subdivided into several individual examinations of the same or different type. Based on the intended learning outcomes defined in the module description, examinations are to determine if and to which extent students have achieved the intended learning outcomes of a module. Students may be required to be familiar with relevant contents of previous modules. Working on the exam tasks independently and without assistance is immanent to every examination.
- (2) The language of instruction and examination is usually English. Examinations may be held in a language other than English upon request of the examinee if the chairperson of the examination board and the examiner agree. All persons involved must have sufficient proficiency in the other language. Additional information on the module examinations is provided in §§ 23 and 24, the study plan (annex 1) and the module catalog.
- (3) The examination type depends on the requirements of the respective module. Admissible types of examination are written or electronic examinations (§§ 19 and 20) of 45 to 135 minutes duration, oral examinations (§ 21) of 15 to 45 minutes duration per examinee and other types of examination (§ 22) as well as combinations of the aforementioned types of examination.
- (4) A student's total workload for module examinations which are made up of a combination of several types of examination, is not to exceed the typical workload that a single type of examination would generate.
- (5) In consultation with the examiners and considering the studiability of the program and the module description, the examination board is to determine the examination type and modalities for each module, usually at the beginning of each semester, unless this is already defined in the study plan or module catalog. If an examination within a module consists of several components or a combination of different types of examination, the examination board shall

also specify how the individual components are weighted. Pursuant to § 11 (5), the overall grade is the arithmetic average of the individual evaluations, unless other weighting factors have been established.

- (6) The examination board determines the examination period for written and oral examinations in consultation with the examiners usually one month before the examination period. The examination period is uniform and binding for all students who intend to take the respective module examination. Electronic notification is sufficient.
- (7) In case of other examination types, the examiner determines the examination schedule in the first quarter of the course and informs the examination board. The examiner is to announce the examination schedule within this period. Electronic notification is sufficient. § 18 (1), sentences 3 and 4 does not apply.

§ 17 Admission to module examinations

- (1) Participation in an examination requires prior admission to the examination. Students are to request their admission to examinations within the registration period determined by the examination board, using the electronic registration/withdrawal system provided by the Office of Student and Examination Services. In exceptional cases, students may alternatively submit a written registration request to the Office of Student and Examination Services. Students are to verify that their registration was properly recorded by checking the electronic examination management system.
- (2) Only individuals who are enrolled at Technische Hochschule Köln as regular or cross-registered students in accordance with § 52 (1) and (2) HG can register for examinations.
- (3) Students may be required to have passed preliminary assessments, lab courses, partial exams or coursework throughout the semester or other module examinations in order to be admitted to a module examination; see § 24 and the study plan (annex 1) for details.
- (4) The selection of required electives (*Wahlpflichtmodule*) in which the student intends to take examinations and that is listed in the registration request becomes binding with the registration. For all other matters, the regulations set down in subsection 6 apply.
- (5) For oral examinations, a statement whether the student objects to the presence of students of the same program as audience during the examination is to be submitted along with the registration request, or by a separate deadline set by the examination board.
- (6) Students may revoke their registration for a module examination using the electronic registration/deregistration system provided by the Office of Student and Examination Services or, in exceptional cases, in writing with the Office of Student and Examination Services up until one week prior to the set examination date. By doing so, students will not lose an examination attempt. If a student withdraws from their first attempt to pass an examination, the selection of a required elective as per subsection 4 is no longer binding.
- (7) Admission is denied if
 - a) the requirements stated in subsections 1 to 4 are not met, or
 - b) the student fails to submit all documents and does not submit missing documents by the date set by the examination board, or
 - c) the student has irreversibly failed (i.e. failed with no option to repeat), within the jurisdiction of the German constitution,
 - a Master's or other final examination in the same program, or
 - a comparable examination in a program whose content has strong similarities to that of the program described in these examination regulations.

In all other cases, admission is only to be denied if the student has, within the jurisdiction of the German constitution, lost the right to take examinations in the same program at a different institution, e.g. by having failed to meet a deadline for retaking examinations.

§ 18 Conducting module examinations

- (1) For the module examinations specified in §§ 19 to 21, one examination date per semester is usually scheduled. However, each examination is to be offered at least once a year. With the exception of examinations which take place throughout the semester, examinations are to be held within the examination periods set by the examination board and which are announced at the beginning of the semester or toward the end of the previous semester. Examinations are to be scheduled in such a way that no classes need to be canceled. The examination board may decide on the type of examination to be offered and is to announce this decision in good time before the examination. This is to ensure that students have sufficient time to submit any applications or requests (e.g. as described in subsection 4). Written examinations (*Klausur*) and oral examinations usually take place on campus, i.e. in TH Köln's buildings. Examination procedures are to be documented in detail. (This applies in particular to oral examinations including presentations.)
- (2) Students are to be notified of the individual examination dates and their admission to the examinations at least two weeks prior to the examination concerned. Electronic notification is sufficient.
- (3) Module examinations may be offered as on-campus exams on TH Köln's premises as well as remote exams off the university's premises. Examinations may be offered either as pen-and-paper exams or as electronic examinations or, in case of oral examinations, through electronic communication using the software and e-learning platforms provided by TH Köln. The principle of equal treatment during examinations is to be respected. Upon request, students are to identify themselves with a government-issued photo ID and their student ID card (MultiCa).

A technical solution for a legally certain authentication of the examinee over the entire duration of remote exams, which also adequately respects the fundamental rights of the individuals involved, is currently not available. Until such a system is in place, a declaration in which examinees declare that they are the person to be examined, will not or have not used any unauthorized resources and are aware that any cheating or attempt thereof will be punished as specified in these examination regulations is usually sufficient. In accordance with § 63 (5) sentence 1 HG, the university may request a declaration in lieu of an oath in which the examinee declares that they have completed the exam tasks independently and without assistance. Unauthorized resources are all documents, electronic resources, electronic devices or other resources that are not explicitly allowed to be used during the respective examination, exam-related communication with third parties or artificial intelligence agents etc. In case of technical difficulties during an examination for which TH Köln is responsible and which require that the exam is aborted, a make-up date in the near future is to be determined. For examinees, the regulations on missing or withdrawing from exams as per § 15 (1) and (2) apply accordingly.

- (4) If a student – by submitting a medical certificate or in a different manner - substantiates that they are not capable of completely or partly taking the examination, coursework or admission test in its intended form or time frame due to a permanent disability or chronic disease pursuant to § 3 of the German Act on Equal Opportunities for Persons with Disabilities (*Behindertengleichstellungsgesetz*), the chairperson of the examination board decides, after due consideration, if, how and to what extent reasonable adjustments are appropriate. Applications for reasonable adjustments are to be submitted in due time (usually along with the registration for the exam at the latest and at least two months before the exam or by a date

set by the chairperson of the examination board) along with all required supporting documents. The decision on the application is to be made within an appropriate time frame (usually within one month of the date of submission of the application or at least one month prior to the examination/the assignment of the topic). Consultation with the Representative for Students with Disabilities and Chronic Diseases is possible in accordance with § 62b HG.

In exceptional cases, sentences 1 to 4 also apply to persons with temporary health impairments.

- (5) If a written or oral examination is the second retake of a module examination, module component or individually assessed component or an examination which concludes a program, it is to be evaluated by at least two examiners.
- (6) According to §§ 19 and 20, examination records are to be kept which shall include at least the names of the record keeper and exam supervisor and examinees, the start and end time of the exam as well as any unusual occurrences.

§ 19 Written examinations (*Klausur*) (on-campus and remote examinations)

- (1) In written examinations, students are to prove that – within a limited time frame and with limited resources – they are capable of identifying topics and tasks stemming from areas covered by the module by means of common scientific methods of their subject area and solving them correctly.
- (2) A proctor is present during written examinations. The examiner decides whether students are allowed to use additional resources.
- (3) A written examination is normally drawn up by one examiner only. In specific cases, especially when a module examination covers several subject fields, the examination may also be drawn up by more than one examiner. In such a case, the examiners jointly determine how the individual components of the examination shall be weighted prior to the examination; each examiner evaluates the entire written examination irrespective of the individual components and their weighting. Due to the special character of a subject field, the examination board may alternatively determine that an examiner shall only evaluate that part of a written examination that covers their subject field. In such a case, the examination is evaluated based on the previously determined weighting of the individual components. § 18 (5) remains unaffected.
- (4) Examinations conducted in digital formats are permissible. They are treated like written examinations. An electronic written exam (eKlausur) is a computer-based exam which is drawn up, conducted and evaluated using information and communication technology. Prior to the examination, students are given ample opportunity to get to know the electronic examination system. During electronic written exams, a person competent in the relevant field is to be present (for on-campus exams) or reachable (for remote exams). This person also produces a written record of the examination (§ 18 (6)). It is to be ensured that the electronic data is kept and can be assigned to the individual examinees for the duration of the retention periods.
- (5) Remote written examinations are possible if the examination board agrees. Examiners are to submit a substantiated request. At the beginning of the exam, examinees are to identify themselves by presenting their MultiCa and government-issued ID card. Additionally, they are required to show the entire room where they are to take the exam with their camera to demonstrate that they are by themselves and will not use any unauthorized resources. To ensure equal opportunities and to discourage cheating during remote written exams, students are required to activate the camera and microphone of their communication device that is used for the exam (video supervision). In case of suspected cheating, proctors may request that the camera is moved to show the entire room. Video supervision is to be carried out in such a way that the examinees' privacy and personal rights are only affected to the extent ultimately necessary for the purpose of exam supervision. Video supervision is carried out by supervisors employed by TH Köln. There is generally no automated analysis of video or audio data of the

video supervision. Examinations as well as image and audio data are not recorded or otherwise stored.

In exceptional cases, students may apply to the examination board to take an examination on-site (i.e. on campus) instead of the scheduled remote written exam. If the examination board rejects such a request, it is to provide an explanation for the rejection.

§ 20 Written multiple-choice examinations

- (1) Written examinations may be completely or partly conducted as multiple-choice examinations. In multiple-choice examinations, students are asked to answer written questions under supervision by selecting the correct answers from a list of suggested solutions.
- (2) It is the examiners' responsibility to determine the examination questions and the suggested solutions (examination exercises). It is to be recorded in writing which of the suggested solutions are accepted as correct answers.
- (3) Correct answers are scored with a positive value. Weighted scoring is possible. Incorrect answers are scored with a value of zero; there are no penalties (negative scores) for incorrect answers. Also, no score will be awarded if none of the answers are selected, even if in doing so, incorrect answers were correctly not selected, unless it was correct not to select any of the possible answers. Likewise, no score will be awarded if all of the answers are selected, even if in doing so, correct answers were correctly selected, unless it was correct to select all of the possible answers. If the exam question includes information on how many of the possible answers are correct, no score will be awarded if more answers were selected than the indicated number of correct answers.
- (4) The evaluation is to include the following information:
 - a) the number of questions asked and the number of questions answered correctly by the examinee,
 - b) the minimum number of questions required to be answered correctly in order to pass the examination,
 - c) in case the examination was passed, the percentage by which the number of correctly answered questions exceeds the minimum requirements,
 - d) the grade obtained by the student.
- (5) When evaluating examinations, examiners are to pay attention as to whether a frequent occurrence of wrong answers to a specific question might indicate that the question was worded incorrectly. If it is determined after the examination that individual questions or possible solutions are erroneous, the examination exercises concerned will not be factored in. As a consequence, the number of examination exercises is reduced. This reduced number of exercises is to form the basis of the evaluation. Reducing the examination exercises shall not put students at a disadvantage.
- (6) If only part of the examination is in multiple-choice format, subsections 1 to 5 only apply to this part of the examination. If sentence 1 does not apply to an independent part of the examination, the regulations described in subsection 4 letters b) to d) do not apply.

§ 21 Oral examinations

- (1) With the exception of the cases defined in § 18 (5), oral examinations are held in the presence of an examiner and a qualified co-examiner (§ 9 (1)) or in the presence of several examiners (panel examination) as group examinations or individual examinations. If an examination covers several subject fields, each student is examined by only one examiner in each subject field unless § 18 (5) applies. Prior to grading the examination, the examiner is to consult with the co-

examiner or the other examiners. Oral examinations may be conducted using means of electronic communication.

- (2) A written record of the essential topics and the results of the examination, in particular facts that are essential to the grading of the examination, is to be kept. The grade is to be reported to the students immediately after the examination.
- (3) Students who are enrolled in the same program or who take the same module and who are planning to take the same examination during a later examination period, are to be given the opportunity to be present during oral examinations as audience, provided that there is enough space and that no examinee has objected to this provision when registering for the examination. However, no audience is allowed during the examiners' consultation or during the announcement of examination results.

§ 22 Other types of examinations

- (1) Besides written and oral examinations, other types of examination may be chosen for module examinations, in particular presentations, term papers or open book exams, oral reports, project papers, certificates of achievement/interim certificates of achievement, performance assessments, learning portfolios, lab reports, role plays, simulations, simulation games.
- (2) Other types of examination are usually evaluated by one examiner, unless § 18 (5) applies.
- (3) A term paper (e.g. case study or research paper) is to determine whether students are capable of independently completing an assignment in writing or in electronic form within a given time frame, using scientific and subject-related methods. The examiner determines the topic and length of the paper (e.g. number of pages of the main part) at the beginning of the semester. Examinees are to sign and submit an academic integrity declaration.
- (4) An open book examination is a short term paper, i.e. an unsupervised written or electronic exam. It is characterized by the fact that (usually) all resources are permitted as defined in the examiner's permissible resources statement. Special attention is drawn to ensuring good scientific practice, incl. proper citation etc., as well as the requirement to complete examination tasks independently (i.e. without assistance).
- (5) An oral report (e.g. presentation, negotiation, mediation) is to determine whether the examinee is capable of independently solving and adequately presenting a practice-based assignment by means of verbal communication within a given time frame, using scientific and subject-related methods. The examiner determines the duration of the oral report at the beginning of the semester. A written record of facts that are essential for the grading of the oral report is to be kept. Students are to be informed of their grade within one week of the oral report at the latest.
- (6) A project is an examination which requires students to work independently but under guidance on a narrowly defined scientific problem. Students are required to document the results and findings of their project in a written report.
- (7) In a performance assessment, typical authentic action situations are simulated. Students are facing one or several tasks which they will/may face in their future professional field. Students have to complete this assignment independently - depending on the specific requirements of the respective module - either by themselves or as members of a team entrusted with the respective task. How thoroughly the task is analyzed and which approach is chosen, which methods and tools are selected and used and how the students structure, organize, coordinate and document their own activities as well as the cooperation with their team members (project management) is mainly determined by the students themselves, analogous to professional practice; this is evaluated (performance).
- (8) A learning portfolio documents the students' development of skills and competencies by means

of presentations, essays, excerpts from lab reports, tables of contents of term papers, lecture notes, to-do lists, research reports and other presentations of coursework and products of learning. The documents assembled in the portfolio are called artifacts. A learning portfolio can only be considered an examination subject if it is accompanied by a student's reflection (written, oral or video) on the significance of these artifacts for the learning objective which was previously announced by the examiner. As the semester proceeds and the learning portfolio is assembled, the examiner will provide feedback on the development and/or artifacts. For the examination, a revised version of the learning portfolio, based on the examiner's feedback, is submitted (either handwritten or in a digital format).

- (9) A lab report (e.g. experiment protocol) is to determine if students are able to independently complete a laboratory assignment within a specified time frame and also document, evaluate and reflect the process and results in writing. Examinations in form of a lab report may also be conducted as team projects. Students are to be notified of the evaluation of the lab report within six weeks of submission of their report.
- (10) A role play (or simulation game) is to determine whether students are capable of solving tasks in situations (or simulations) that are close or analogous to real-life situations, using scientific methods and communication and cooperation techniques, usually in interaction with other real or virtual persons, within a specified time frame. The evaluation is to be announced to the students upon completion of the role play.
- (11) An admission colloquium (*Zugangskolloquium*) is to determine if the students meet the experiment-specific requirements to complete a practical laboratory assignment competently and without assistance using scientific and subject-related methods.
- (12) It is possible to allow other types of examinations, also as team projects. This usually requires that a student's individual contribution to be evaluated as an examination is clearly distinguishable and can be assessed accordingly. In order to verify a student's contribution, identifiers such as passages, areas of responsibility, page numbers (for term papers) or other objective identifiers allowing for a clear distinction are to be indicated. If the focus of the intended learning outcomes of the joint team project is on working together as a team, an overall evaluation of the team project is possible.

III Progression of studies

§ 23 Modules and completion of the program, additional modules

- (1) In all compulsory modules (required modules and required electives), students are to take module examinations as described in §§ 19 – 22. The program's modules are listed in § 24; the corresponding types of examination can be found in the study plan or module catalog, unless individually determined by the examination board (§ 16 (5); sentence 1). Modules can be selected according to the study plan. Additional information is available in the module catalog.
- (2) A student may take examinations in more modules than the ones needed to earn the required number of credits (additional modules). The results of these additional examinations may be listed on the examination certificate upon request of the student. However, they are not accounted for in the calculation of the final grade. If a student selects more than the required number of modules from the catalog of required electives and concludes them by passing the respective module examination, these are also considered additional modules. In this case, when registering for the Master's thesis, the examinee specifies which module examinations are considered required examinations to be accounted for in the calculation of the final grade.

§ 24 Module examinations

- (1) In all programs, the modules highlighted as required modules in the study plan worth 40 ECTS credits are to be taken.
- (2) Students enrolled in the program "Natural Resources Management and Development" are to select 10 elective modules (50 ECTS) out of the electives offered. Of those, at least 5 required electives (25 ECTS) must be selected from the category "Natural Resources and Development" and at least 2 required electives from the category "Methods and Tools".
- (3) Students enrolled in the program "Integrated Water Resources Management" are to select 10 elective modules (50 ECTS) out of the electives offered. Of those, at least 5 required electives (25 ECTS) must be selected from the category "Integrated Water Resources Management" and at least 2 required electives from the category "Methods and Tools".
- (4) Students enrolled in the program "Renewable Energy Management" are to select 10 elective modules (50 ECTS) out of the electives offered. Of those, at least 5 required electives (25 ECTS) must be selected from the category "Renewable Energy Management" and at least 2 required electives from the category "Methods and Tools".
- (5) Students pursuing a double degree are required to spend at least one of the first three semesters at each of the two institutions of higher education involved.
- (6) Students pursuing a double degree are required to obtain a minimum of 30 credits at each of the two institutions of higher education involved. This excludes the Master's thesis and final oral examination.
- (7) The faculty council may decide to include additional modules from partner institutions into the course catalog. Details on module examinations to be taken can be found in the current versions of the study plan (annex 1) as well as the module catalog.

IV Master's thesis and final oral examination

§ 25 Master's thesis; purpose; topic; examiners

- (1) The Master's thesis is a written paper. It is to demonstrate that students are capable of independently completing an assignment on a topic from their subject field within a given time frame by elaborating on subject-related specifics as well as on interdisciplinary contexts and by making use of scientific and subject-related methods. Interdisciplinary collaborations for Master's theses are possible.
- (2) The topic of the Master's thesis may be determined by any professor who may be appointed examiner in accordance with § 9 (1). This examiner may also be the thesis advisor. Upon request of the student, the chairperson of the examination board may appoint the following persons as thesis advisors as per § 28 (2) if it has been determined that no professor responsible for the respective subject is able to function as thesis advisor for the intended topic of the Master's thesis:
 - Honorary professors
 - Adjunct lecturers with relevant tasks
 - Instructors for special tasks
 - Examiners from other faculties
 or
 - Persons with professional experience and experience in professional training.
- (3) If approved by the chairperson of the examination board, students may write their Master's thesis at an institution outside the university if this institution provides sufficient advice and

assistance.

- (4) Students are to be given the opportunity to suggest topics for their Master's thesis. Upon request, the chairperson of the examination board is to ensure that a student is provided with a topic for the Master's thesis in time.
- (5) A Master's thesis may also be written as a team project if students' individual contributions to be evaluated are clearly distinguishable and can be evaluated accordingly and if it complies with the requirements stated in subsection 1. In order to verify a student's contribution, his or her passages, page numbers or other objective criteria allowing for a clear distinction are to be identified.
- (6) The Master's thesis is to be written in English. However, if endorsed by the chairperson of the examination board and the thesis advisor, it may also be written in German or another language.

§ 26 Admission to the Master's thesis

- (1) Students are admitted to the Master's thesis if they meet the admission requirements stated in § 17 (2 and 5) and have, pursuant to § 12, obtained a total of 85 credits in the examinations required as per § 24.
- (2) The Master's thesis registration request is to be addressed to the chairperson of the examination board and to be submitted to the Office of Student and Examination Services. Requests can be submitted in writing or through an electronic system provided by TH Köln. The following documents are to be submitted at the time of registration, unless already submitted in the past:
 - a) proof of having met the admission requirements stated in subsection 1,
 - b) a statement on previous attempts to write a Master's thesis or another final examination and on attempts to pass the Master's examination,
 - c) a statement on which examiner is willing and able to prepare the topic of the Master's thesis and to function as thesis advisor, and
 - d) the suggested topic of the Master's thesis.
- (3) Students may revoke their registration for the Master's thesis in writing or through an electronic system provided by TH Köln up until the day the admission decision is announced without losing an attempt to write their thesis.
- (4) The chairperson of the examination board decides on the admission to the Master's thesis. In cases of doubt, the decision lies with the entire examination board. Admission is denied if
 - a) the student does not meet the requirements stated in subsection 1, or
 - b) the supporting documents are incomplete, or
 - c) within the jurisdiction of the German constitution, a final thesis written by the student has been evaluated as "insufficient" without option to repeat, or if the student has irreversibly failed (without option to repeat) one of the examinations stated in subsection 2 sentence 3 item b).

In all other cases, admission may only be denied if the student has, within the jurisdiction of the German constitution, lost the right to take examinations in the same program, e.g. due to having failed to meet a deadline for retaking examinations.

§ 27 Assignment of the topic and writing the Master's thesis

- (1) The topic of the Master's thesis is to be assigned by the chairperson of the examination board. The time of assignment is to be the day on which the chairperson of the examination board

informs the student of the topic of the Master's thesis assigned by the thesis advisor. The time of assignment is to be put on record.

- (2) Students have 4 weeks to write the Master's thesis (day of assignment to the day of submission). The topic and assignment must be such that it is possible to complete the Master's thesis within the given time frame. In exceptional cases, the chairperson of the examination board may extend the deadline of submission by up to four weeks if the student concerned submits a request prior to the deadline, in which he/she explains the reasons for extending the deadline. The thesis advisor is to be consulted on this request. The main part of the Master's thesis is to comprise 50 to 100 pages.
- (3) Students may return a topic only once and only within the first four weeks of the assigned time frame. They are not required to state a reason for their withdrawal. If a student undertakes a second attempt to write a Master's thesis in compliance with § 14 (1), the student may only return their topic if they did not do so during their first attempt.
- (4) § 18 (4) applies accordingly.

§ 28 Submission and evaluation of the Master's thesis

- (1) Students are to submit one hardcover copy of their Master's thesis and one identical copy - which is also used for plagiarism checks - on an electronic data carrier, or in another digital format, in one of the common word processing formats to the chairperson of the examination board, or at a location determined by the chairperson of the examination board, by the submission deadline. The digital version is binding. Submitting the thesis by means of telecommunication (e.g. by fax) is not permissible. The time of submission is to be put on record; if the thesis is submitted by mail, the decisive criterion is the point of time at which the thesis is submitted to the postal service. When submitting the thesis, students are required to declare in writing that they have written the thesis – in case of a team project their part of the thesis, which has been identified accordingly – without assistance and have used no other sources or resources than the ones indicated. In case of quotations, sources are to be identified.
- (2) The Master's thesis shall be evaluated by two examiners. One of the examiners is to be the thesis advisor. The other examiner is appointed by the chairperson of the examination board. If § 25 (2) sentences 3 and 4 apply, they must be a professor. If the examiners' evaluations differ from each other and the divergence of both grades is less than 2.0, the grade for the Master's thesis is the arithmetic average of the two grades. If there is a divergence of 2.0 or more, the examination board appoints a third examiner. In this case, the grade for the Master's thesis is the arithmetic average of the two better grades. However, the Master's thesis can only be graded "sufficient" or better if at least two of the grades are "sufficient" or better.
- (3) Students who pass the Master's thesis are awarded 25 credits in accordance with § 12.

§ 29 Final oral examination

- (1) The final oral examination complements the Master's thesis. It is to be evaluated as an independent examination and is to take place within one month after the submission of the Master's thesis. Its aim is to determine whether the student is capable of orally presenting and independently justifying the findings of the Master's thesis, its scientific and methodological fundamentals as well as inter- and multidisciplinary contexts, and of assessing the thesis' significance for practice.
- (2) Students may only be admitted to the final oral examination if they
 - a) have accumulated at least 90 ECTS credits in the respective program,

- b) are enrolled at Technische Hochschule Köln as regular or cross-registered students in accordance with § 52 (2) HG and
 - c) have received a grade of at least "sufficient" for their Master's thesis.
- (3) Registration requests for the final oral examination are to be submitted in writing or through an electronic system provided by TH Köln to the Office of Student and Examination Services. Students need to submit proof of having met the admission requirements stated in subsection 2, unless such proof has already been presented to the Office of Student and Examination Services. In accordance with § 26, students may register for the final oral examination when they apply for admission to the Master's thesis; in this case, students are admitted to the final oral examination as soon as all required evidence and documents have been submitted to the Office of Student and Examination Services.
- (4) The final oral examination is usually conducted and evaluated by the examiners of the Master's thesis. If § 28 (2) sentence 6 applies, the final oral examination is conducted by those examiners whose individual evaluations were used to calculate the grade for the Master's thesis.
- (5) The duration of the final oral examination is approximately 30 minutes. The provisions for oral examinations (§ 21) apply accordingly.
- (6) In accordance with § 12, students are awarded 5 credits for the final oral examination.

V Results of the Master's examination

§ 30 Results of the Master's examination

- (1) Students need to accumulate 120 credits to pass the Master's examination. This requires that all required module examinations have been passed and that the Master's thesis and the final oral examination have been evaluated as at least "sufficient".
- (2) Students have failed the Master's examination if one of the examinations stated in subsection 1 has been irreversibly evaluated as "insufficient" or is irreversibly deemed "insufficient". Students are to be notified (in writing) of having failed the Master's examination. This notification is to include information on legal remedies. After the student's removal from the student register, the chairperson of the examination board will, upon request, issue a certified document listing all examinations and coursework taken by the student and the respective grades, as well as the examinations missing in order for the student to pass the Master's examination. This document must include the information that the student has irreversibly failed the Master's examination. Upon request, the chairperson of the examination board will issue a document listing only the completed examinations and coursework and the respective grades.

§ 31 Examination certificate; final grade; diploma supplement

- (1) Graduates are to receive a certificate on the passed Master's examination without delay, if possible within four weeks of the last examination. This examination certificate is to include the grades and credits for all module examinations, the topic of the Master's thesis, grades and credits for the Master's thesis and final oral examination, the final grade for the Master's examination and in case of transfer credits, the name of the institution where the examination was taken.
- (2) The final grade for the Master's examination is the average of the grades for the module examinations, the Master's thesis and the final oral examination, which have been weighted by

the corresponding credits. If a student has selected more than the required number of modules from the catalog of required electives and has passed them with a grade of at least "sufficient", only the grades of the modules the student determined as required electives at the time of their registration for the Master's thesis will be considered for the calculation of the final grade.

- (3) In accordance with § 23 (2), grades for additional modules are not accounted for in the calculation of the final grade.
- (4) The examination certificate is signed by the chairperson of the examination board and bears the date of the day on which the last examination was taken.
- (5) Graduates are to receive their Master's certificate (*Masterurkunde*) along with the examination certificate. The Master's certificate bears the same date as the examination certificate. The Master's certificate certifies that the Master's degree has been awarded in compliance with § 2 (5).
- (6) The Master's certificate is signed by the dean of the Faculty of Spatial Development and Infrastructure Systems and by the chairperson of the examination board and bears the seal of Technische Hochschule Köln.
- (7) In addition to the Master's certificate and the examination certificate, graduates receive a diploma supplement in English, which corresponds to the guidelines and agreements of the German Rectors' Conference.

VI Final provisions

§ 32 Inspection of examination papers

After each attempt to pass a module examination or the Master's thesis and final oral examination, the student is to be given access (upon request) to the written or electronic examination concerned and – if available – the examiners' records related to the examination and the examination records of an oral examination. Access to a Master's thesis that was graded at least "sufficient" is to be granted only after the corresponding final oral examination was taken. Requests to access these documents are to be addressed to the chairperson of the examination board within one month of the announcement of the grade for the module examination or within one month of the delivery of the examination certificate or the certification on irreversibly failing the Master's examination. The chairperson determines time and place of the inspection.

§ 33 Invalidity of examinations

- (1) If a student cheated during an examination and the cheating is detected only after the delivery of the examination certificate, the Master's certificate, diploma supplement or the certificate mentioned in § 30 (2) sentences 4 and 6, the examination board is entitled to subsequently amend the grades for those examinations during which the student cheated and to declare the Master's examination failed or partially failed.
- (2) If the requirements for admission to an examination were not met but the student did not attempt to cheat and if this matter was detected only after the delivery of the examination certificate, Master's certificate, diploma supplement or the certification mentioned in § 30 (2) sentences 4 and 6, this shortcoming is offset by the student's passing of the examination. If the student deliberately effected a wrongful admission, the examination board decides on the legal consequences with due regard to the Administrative Procedures Act (*Verwaltungsverfahrensgesetz*) of North Rhine-Westphalia.

- (3) If necessary, the incorrect examination certificate, the Master's certificate and the diploma supplement or the incorrect document as per § 30 (2), sentences 4 and 6 are to be collected and reissued. A decision pursuant to subsections 1 and 2 is to be ruled out if five years or more have passed since the examination certificate or document as per § 30 (2) sentences 4 and 6 was issued.

§ 34 Entry into force; transitional regulations

- (1) These examination regulations will come into force on September 1, 2022 and will be published in Technische Hochschule Köln's official communication (*Amtliche Mitteilungen*).
- (2) These examination regulations apply to all students who enroll in or apply for admission to the Master's programs "Natural Resources Management and Development", "Renewable Energy Management" or "Integrated Water Resources Management" at Technische Hochschule Köln as of the winter semester 2022/23. Additionally, subsection 3 also applies to all students enrolled in the programs "Natural Resources Management and Development", "Renewable Energy Management" or "Integrated Water Resources Management" based on the examination regulations of November 28, 2014 (*Amtliche Mitteilung 54/2014*).
- (3) The examination regulations of November 28, 2014 (*Amtliche Mitteilung 54/2014*) for the programs "Natural Resources Management and Development", "Renewable Energy Management" or "Integrated Water Resources Management" at Technische Hochschule Köln will only be applied in accordance with the regulation on the discontinuation of the program after August 31, 2022 and will expire on August 31, 2025.

Examinations will continue to be offered until August 31, 2025. Details are provided in the regulation on the discontinuation of the program.

- (4) The examination regulations are published on the basis of the resolution of the faculty council of the Faculty of Spatial Development and Infrastructure Systems at Technische Hochschule Köln of January 11, 2022 and after legal review by the Executive Board of Technische Hochschule Köln on October 5, 2022.

Cologne, October 26, 2022

The President
of Technische Hochschule Köln
(University of Applied Sciences)

Prof. Dr. Stefan Herzig

Annex:

Annex 1: Study plan

Annex 2: Double degree

Annex 1: Study plan

Study plan for the full-time program

Name	Semester				Graded
	1	2	3	4	
Required modules, Master's thesis and final oral examination					
Management of Natural Resources Systems	5				X
Environmental Economics and Governance	5				X
Project Management		5			X
International Cooperation		5			X
Project I: Regional Systems Problem Definition	5				X
Project II: Solution Design		5			X
Project III: Implementation and Evaluation			5		X
Master's Thesis Preparation			5		N
Master's Thesis and final oral examination				30	X
Elective modules					
Methods and Tools					
Scientific Work	5				X
Geographic Information Systems and Remote Sensing	5				X
Statistics	5				X
Empirical Social Research Methods		5			X
Environmental Monitoring		5			X
Economic Valuation Methods			5		X
Water Energy Food Security Nexus			5		X
<i>Eco-Balancing</i>		5			X
<i>Environmental Assessment</i>			5		X
<i>Entrepreneurship</i>			5		X
Special Topics					X
Integrated Water Resources Management – IWRM					
Water Resources Management	5				X
Hydrology		5			X
Hydraulic Infrastructure		5			X
Water and Agriculture		5			X
Watershed Management		5			X
Flood Management			5		X
Water Scarcity and Drought			5		X
Water System Analysis			5		X
<i>Water Economics and Governance</i>		5			X
<i>Urban Water Management</i>			5		X
Special Topics					X

Natural Resources Management and Development - NRM					
Farming Systems – Urban Systems	5				X
Soil Management		5			X
Farming Systems Economics		5			X
Ecosystem Management and Conservation		5			X
Public Services and Housing Governance		5			X
Ecological and Social Risks			5		X
Food Security			5		X
Resources Efficient and Resilient Cities			5		X
<i>Natural Resources Governance and Sustainability Transition</i>			5		X
Special Topics					X
Renewable Energy Management – REM					
Energy Resources and Energy Systems	5				X
Introduction to Renewable Thermal Energy Science		5			X
Energy Economics, Efficiency and the Environment		5			X
Photovoltaics		5			X
Energy Policy and System Transition			5		X
Wind Energy			5		X
Decentralized Energy Systems			5		X
<i>Energy Infrastructures</i>		5			X
Special Topics					X

Annex 2: Double degree

Double degree in cooperation with our partner university

„Universidad Autónoma de San Luis Potosí (UASLP)”, San Luis Potosí, Mexico

Programs involved:

- (1) UASLP – “Multidisciplinary Postgraduate Programme on Environmental Sciences” – PMPCA
- (2) TH Köln – “Natural Resources Management and Development” – NRM

Recognition process

PMPCA Module title	ECTS	NRM Module title
Ecología	5	Management of Natural Resources Systems
	5	Ecología – curso optativo (Wahlmodulkatalog Spezialisierung NRM)
Desarrollo Sustentable	5	International Cooperation
Problemática y Gestión Ambiental	5	Project I: Regional Systems Problem Definition
Diseño y Evaluación de Proyectos de Investigación	5	Project Management
Seminario Multidisciplinario	5	Project II: Solution Design
Introducción a la Estadística	5	Statistics
Curso optativo	5	Module gewählt aus dem PMPCA Wahlmodulkatalog (Specialization NRM or Methods and Tools)