

Examination Regulations

For the Master's Degree Program

Physics of the Earth and Atmosphere

at

the Faculty of Mathematics and Natural Sciences

at

The University of Cologne

03. 03. 2009

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Regulation**

In accordance with § 2 section 4 of the law governing higher education institutions in the Federal State of North-Rhine Westphalia (Hochschulgesetz - HG) in the version of the Higher Education Autonomy Act of 31st October 2006 (GV. NRW, p. 474), last modified on 18th November 2008 by the Act on Admissions to Higher Education (GV. NRW, p. 710), the Faculty of Mathematics and Natural Sciences at the University of Cologne has enacted the following regulation:

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§ 1 Objectives of the degree program

- (1) This Master's degree program should, while bearing in mind the requirements of the world of work, equip students with the relevant subject-specific knowledge, as well as the appropriate skills and methods necessary for them to be able to conduct scientific work, to critically assess scientific results, and to think and work responsibly and in an interdisciplinary manner.
- (2) The objective of this MSc program is the dissemination of extended knowledge in the relevant areas of Geophysics and Meteorology as will be chosen by the student, as well as facilitating independent scientific analysis and assessment of problems in the fields of Geophysics and Meteorology in one chosen core subject area.

§ 2 Academic Degree

After the successful completion of this degree program, the Faculty of Mathematics and Natural Sciences will award the academic degree of 'Master of Science' (MSc).

§ 3 Participation in the degree program

The degree program is only open to those who

- (a) have demonstrated proof of their particular suitability according to the Admissions Regulations for this degree program, and
- (b) have registered for this degree program at the University of Cologne or who, in accordance with § 52 section. 2 of the Higher Education Regulations (Hochschulgesetz) have been admitted as a cross-registered student (Zweithörer/in).

Registration in the degree program or admission as a cross-registered student (Zweithörer/in) will take place in accordance with the stipulations set out in the Registration Regulations.

§ 4 Examination Committee

- (1) The Faculty of Mathematics and Natural Sciences will establish a 'Committee for the MSc degree Physics of the Earth and Atmosphere', which will henceforth be referred to as the 'Examination Committee'.
- (2) The Examination Committee will consist of five members who have full voting rights, and in the case of the appointment of a director, the committee can be extended to include one additional non-voting member. The five voting members of the committee comprise: three members of the body of university professors, namely the head of the committee, the deputy head, and one other member; one member of the body of academic associate staff (Mitarbeiter); and one representative of the student body. With the exception of the head of the committee and the deputy head, substitutes for the other members of the committee must also be elected. The period of office for the members of the bodies

of university professors and academic associate staff is three years, and the period of office for the student representative is one year. Members can be re-elected. The student representative must have been enrolled in this degree program or another degree program in Geophysics and/or Meteorology at the University of Cologne for the previous two semesters. Also, the student must be enrolled in this degree program throughout his/her period of office. The committee can appoint a director to implement the decisions of the committee, and he/she would be a non-voting member of the committee, unless he/she is concurrently an elected voting member of the committee.

- (3) The examination committee will constitute a quorum as long as two members from the group of university professors and academic associate staff are present, in addition to either the head of the committee or the deputy head. The committee's decisions will be based on the majority of votes from those voting members who are present. If there is a tie of votes, the head of the committee has the deciding vote. The student representative is not allowed to vote on the following matters: pedagogical/academic decisions – in particular the assessment, acceptance or accreditation of academic courses or qualifications – and the appointment of examiners or associate examiners (Beisitzenden).
- (4) The Examination Committee is responsible for the proper and correct organisation and implementation of examinations – in particular the appointment of examiners – as well as any for all decisions in relation to this. The appointed examiners must be persons who comply with the criteria set out in § 65 section 1 of the law governing higher education institutions (Hochschulgesetz). The associate examiners need to have any one of the following qualifications: the one achieved by doing this degree program, a diploma (Diplom) in Geophysics or Meteorology, or a higher ranking qualification. The Examination Committee is responsible for decisions about objections and complaints relating to decisions taken within the examination process. The committee will report to the faculty every two years about the development of academic qualifications and the length of study periods, and will put forward proposals relating to the improvement of the degree program and the examination regulations.
- (5) The standard case load of the committee can be assigned to the head of the committee, but this does not apply to decisions relating to objections or complaints, nor to the report to faculty.
- (6) Members of the committee have the right to attend examinations, and to inspect examination records.
- (7) The meetings of the Examination Committee will be closed sessions. The members of the committee, as well as their representatives, and the examiners and the associate examiners, are all bound by official secrecy (Amtsverschwiegenheit). If the members are not civil servants, then they are to be bound to secrecy through the head of the committee.
- (8) Students who present a request to the Examination Committee have the right to present their concern in person before the committee.
- (9) The Examination Committee constitutes a public authority as laid out in the laws relating to administrative procedures and processes.

§ 5 Structure of the degree program, standard period of study for the degree, choice of area of focus

- (1) The standard length of time required to complete the degree program, including the time needed to complete the MSc dissertation and to sit all the required examinations, is four semesters.
- (2) The degree has a modular structure. Modules are self-contained units of study, both thematically and in terms of the period of time, and each module comprises a separate part of the overall degree program. Modules can consist of several types of teaching and class structures. The structure of the modules is set out in the module descriptions, and will be announced to the students in an appropriate way within an appropriate time-frame. The modules in this degree program are set out in the table in the appendix.
- (3) Admission to a module may be dependent on particular prerequisites, such as the successful completion of another module, or several other modules. The module prerequisites are set out in the table of modules in the appendix.
- (4) If a module is not passed, a resit option is possible, as long as this is allowed in accordance with the table of modules (see appendix).
- (5) Within the degree program, students have to choose between the following two areas of focus: 'Geophysics' or Meteorology'. The area of focus has to be indicated at registration, or in the case of cross-registered students, on admission. A student can change the area of focus up until the end of the second semester, after having obtained agreement from the Examination Committee.
- (6) The courses will, as a rule, be held in English.

§ 6 Degree requirements, credit points

- (1) During the course of the degree program, the students should regularly attend the courses which are outlined in the respective modules.
- (2) Successful completion of the modules will be demonstrated on the basis of credit points awarded – the credit points are given on the basis of successfully completed academic assessments. The number of credit points per module is set out in the table of modules (see appendix).
- (3) Credit points are calculated according to the probable work load of the students. The average work load is set at 1,800 hours per year of the degree program. If the degree is undertaken as full-time study, then for each year of study of the degree program, the student shall acquire on average 60 credit points. One credit point represents approximately 30 hours of study on the part of the student.

§ 7 Examinations and Assessments

- (1) Academic assessments are the prerequisites for the awarding of credit points. They are graded according to § 10, or are assessed as 'pass' or 'fail'. Academic assessments which contribute to the final degree grade must be given a grade.

- (2) The prerequisite for admission to examinations is regular course attendance; exemptions can only be granted by the Examination Committee, and an exemption has to be applied for.

In addition, active participation, oral examinations, the successful completion of written tests, tutorials, and practical classes, can be required, as well as presentations, term papers, or reports (see the table of modules in the appendix).

- (3) The form of academic assessment will vary depending on the type of examination:

a) Written examinations:

In written examinations the examinee must demonstrate that he/she can deal with problems using the appropriate methods within their subject area, in a limited time period, and with limited aids or tools, and be able to find solutions to the problems. The written examination must be at least 30 minutes long, but no more than 240 minutes long. Examinees may be given several tasks to choose from. Written examinations can consist partly or wholly of multiple choice questions, as long as this method of assessment is suited to the subject matter of the examination and constitutes an effective and appropriate method of assessment. If a multiple choice exam can result in a student being expelled from the degree program, the multiple choice questions must be set by two examiners. Furthermore, the number of achievable marks for each given question must reflect the level of difficulty of the question. It is expressly forbidden for all questions, irrespective of difficulty, to be allocated the same number of points. Written examinations can also be spread over multiple examination sittings – that is the student may sit different parts of the written examination at different times, and not all during the one sitting.

b) Oral examinations:

In oral examinations, the examinee must demonstrate that he/she understands the context of the subject area in which he/she is being examined, and the examinee must be able to contextualise particular problems and questions within this subject area. Oral examinations can be conducted with individual students or with groups of students, but with no more than three examinees at any one time, and they must be conducted by either two examiners, or one examiner and one appropriately qualified associate examiner (Beisitzer). Oral examinations must last at least 15 minutes, and not more than 45 minutes. The duration of the oral examination should reflect the expected workload of the student. The main aspects of the examination as well as the grade awarded should be documented in a written record which must be signed by the examiners, or examiner and associate examiner, and this written record must be kept in the examination record file. Students who are registered at the University of Cologne, or who are admitted as cross-registered students, for a degree program where this form of assessment is required are to be granted admittance as 'observers' in as far as room capacity allows, and if the examinee has not objected to this at the time of registering for the examination. Admittance to the examination on this basis does not include admittance during deliberation and disclosure of the examination result.

c) Term papers:

A term paper is an independent written response to a given theme or problem, or practical tutorial tasks/exercises.

- d) Presentations:
A presentation should involve presenting a given topic. The examination comprises an oral presentation using appropriate presentation media and techniques, and takes place within class time. If no other forms of assessment are linked to the presentation, the grade will be disclosed at the end of the class, provided that the classroom situation allows this. The other class participants are not allowed to be present at the disclosure of the grade.
- e) Colloquia:
The examinee will present the results of his/her academic work in an oral presentation of approximately half an hour's duration. Then a discussion of the results will take place with one or more examiners. The grade awarded will take into account the quality of the presentation as well as the quality of the discussion contributions made by the examinee. Contributions to the discussion can be made by other students, but these will not be taken in to consideration in deciding on the final grade.
- (4) The different types of examination assessment for each module are laid out in the appendix to these regulations, and these constitute the standard forms of assessment. For resit examinations other forms of assessment are permissible. If permission is granted by the Examination Committee, other types of assessment which are not set out in section 3 are also permissible. These forms of assessment must be named in the module description, and must be publicised by the head of the Examination Committee before the start of the course. Furthermore, applications for other forms of assessment (not included in the appendix) to be permitted can be made to the Examination Committee. These alterations are only applicable for the respective examination session, and must be publicised by the head of the Examination Committee before the start of the respective module. If permission is granted by the Examination Committee, students can, in certain cases, apply to have an oral examination as their last possible resit attempt. In certain cases, students who have already started work on their MSc dissertation can apply for permission from the Examination Committee to have an outstanding resit examination conducted as an oral examination.
- (5) In general, assessments will be conducted in English. However, if both examinee and examiner are in agreement, they can also be conducted in German.
- (6) If an assessment takes the form of a written or oral examination, then the students shall be offered at least two opportunities to successfully complete the requirements of the module or course within an appropriate time-scale.
- (7) During the examination process, examiners will have absolute discretion, and they must not be subjected to any form of interference.
- (8) Written assessments will be graded by a person who is authorised to grade such assessments. The following must be graded by two examiners: the MSc dissertation (§ 8), and any assessments whose grade goes towards the final degree grade, and any assessments where the failure to pass at the final resit attempt will result in the student being expelled from the degree program. Where the authorship of assessments may be in doubt, in accordance with § 63 section 5, clause 1 of the law governing higher education institutions (Hochschulgesetz), an affirmation in lieu of an oath can be demanded and taken.
- (9) For those students who are severely disabled as defined by the Social Security Code (Sozialgesetzbuch IX), and for those who are physically disabled or who

suffer from chronic illnesses, exceptions can be made from the legal and organisational examination regulations, whereby the disability is appropriately taken into consideration. In case of doubt, the Examination Committee can require an official medical certificate. Applications for exceptions must be made in written form at the start of the relevant course.

- (10) The grading of assessments must be disclosed to the students six weeks at the latest after the assessment has taken or the end of the module, where appropriate. However, for oral examinations, the grade awarded must be disclosed to the examinee directly after the end of the examination.
- (11) The relevant examination dates will be announced at the beginning of the relevant course. There must be at least four weeks between the notification of the date of the assessment, and the date of the assessment itself. The student must register for the examination in the period between the day of the announcement of the date, and no later than seven days before the examination date. Students can withdraw from an examination for which they are registered up until one day before the examination date.
- (12) A candidate will be graded as having failed an assessment/examination if he/she fails to attend without just cause, or if he/she withdraws without just cause after the assessment has begun. The relevant reasons for withdrawal or failure to attend must be provided in written form without delay, and they must be credible and plausible. If a student cannot attend an examination for which they are registered due to illness, then an official doctor's certificate must be produced without delay – if this is not provided, then the examination will be graded as a 'fail'. In the case of a resit examination, production of an official doctor's certificate can be required.
- (13) Only those students will be admitted to an examination who:
 - a) are registered for this degree course or who are admitted as a cross-registered student (Zweithörer/in) and who are not on special leave of absence (beurlaubt); those who are exempted from not being on special leave are set out in §48 section 5, clauses 4 and 5 of the law governing higher education institutions (Hochschulgesetz), and
 - b) have not used up their available attempts to pass the examination,
 - c) are not already registered for the same assessment in another assessment period, and
 - d) have complied with the admissions prerequisites as set out in section 2.Any exceptions are to be ruled on by the Examination Committee.

§ 8 MSc Dissertation

- (1) The MSc dissertation is a form of assessment. In the MSc dissertation the candidate must demonstrate that he/she is capable of dealing with a substantial task related to current questions or problems within the fields of Geophysics and Meteorology using appropriate academic methods and techniques, and presenting this in written form within the specified period of time. The dissertation must not be longer than 70 A4 pages long, and can be written in either English or German – the language must be decided on after consultation with the examiner.
- (2) The prerequisites for the acceptance of an MSc dissertation are set out in the table of modules in the appendix.

- (3) The MSc dissertation can be supervised by any professor who is involved in the degree program 'Physics of the Earth and Atmosphere', or any professor, junior professor, assistant professor (Hochschuldozenten/in) or any head of a young academics group at the Institute for Geophysics and Meteorology at the University of Cologne. If the MSc dissertation is to be carried out at an institution outside the University of Cologne, the prior agreement of the Examination Committee must be obtained. The candidate can make suggestions as to their supervisor and the topic of their dissertation. The candidate does not, however, have the right to insist on a particular supervisor or a particular topic.
- (4) The official allocation of the MSc dissertation is done via the head of the Examination Committee. In general the candidates have 6 months to complete their dissertation. The topic of the dissertation and the time of its official allocation must be officially recorded. An application to the head of the Examination Committee ensures that a candidate is allocated a topic for the dissertation. The topic can be rejected by the candidate up to two weeks after it has officially been allocated.
- (5) When the MSc dissertation is handed in, there must be written assurance that the dissertation is solely the work of the candidate, and that he/she has not used any additional sources other than those documented, and that he/she has cited all quotations appropriately. In case of doubt, an affirmation in lieu of an oath that the MSc dissertation is the sole work of the author and that no prohibited form of assistance has been given, can be required and taken.
- (6) The MSc must be handed in by the given deadline. Three printed and bound copies must be handed in to the Examination Committee, and a copy must also be handed in in electronic form (CD, DVD, disk). The time at which the dissertation was handed in must be officially recorded. If the dissertation is sent by post, the date of the postmark will be the accepted date. If the MSc dissertation is not handed in by the given deadline, it will be graded as a fail (5.0). If an application for extension is received from the student, the Examination Committee can, with the consent of the supervisor, grant an appropriate extension if the reasons for the extension are not the fault of the candidate. The application to the Examination Committee for an extension must be made at least 14 days before the hand-in deadline.
- (7) The Examination Committee comprises both the examiners of the dissertation. The first examiner should, as a rule, be the person who has set the topic of the dissertation. The grading of the MSc dissertation must comply with § 10 section 1, and the reasons for the grade given must be given in written form. The final grade of the dissertation will be the average grade of the two individual grades, as long as the difference is not greater than 2.0. If the difference is greater than 2.0, or if one of the examiners has graded the dissertation as a fail, then the Examination Committee will appoint a third qualified examiner to assess and grade the dissertation. If this is the case, then the grade will be calculated as the average of the two highest grades. However, in this case the dissertation can then only be graded as 'adequate' (ausreichend) or better if at least two of the grades are 'adequate' or better. In cases where there is a third examiner, the time limit for the grading process is extended by another six weeks, in accordance with § 7 section 10.
- (8) After the successful completion of the MSc dissertation, and within eight weeks of the date when the dissertation was handed in, the MSc colloquium will take place.

If a third examiner for the dissertation is required, then the admissible time period is extended to fourteen weeks. In exceptional cases, where there are well-founded reasons, the Examination Committee can make deviate from these deadlines. In the colloquium, in which the dissertation examiners take part, the candidate reports on the results of their MSc dissertation. The written assessment of the dissertation must be available to the colloquium. The grading of the colloquium is calculated by the average of the individual grades of the two examiners on the day of the colloquium. Other students who are studying in the same degree program are allowed to attend, as long as the candidate does not object. However, the other students are not allowed to be present during the deliberation and disclosure of the final examination grade.

§ 9 Accreditation of study and examination credits

- (1) Study and examination credits which have been obtained at other universities in the same degree subject within the jurisdiction of German constitutional law (Grundgesetz) will be accredited with the appropriate credit points without any additional official verification of equivalency.
- (2) Equivalent study and examination credits obtained in other degree subjects within the jurisdiction of German constitutional law will be officially accredited. Equivalent study and examination credits obtained at universities outside the jurisdiction of German constitutional law will be accredited on application. Equivalence is to be determined if the study and examination credits are in the main on a par with the content, scope and requirements of the degree program. However, there should not be a schematic comparison, but rather the overall whole should be examined and assessed. In relation to the equivalence of study and examination credits obtained at foreign universities, the equivalency agreements reached by the Standing Conference of the German Culture Ministers, and the Conference of University Rectors must be adhered to. Furthermore, in case of doubt re equivalency, the central office for international education can be consulted.
- (3) For the accreditation of study and examination credits which have been obtained at state-recognised distance learning institutions which have been developed for this purpose by North Rhine Westphalia in conjunction with other states and the Federation, as well as state-recognised universities of co-operative education (Berufsakademien), sections 1 and 2 apply accordingly.
- (4) Students who are allowed to begin the degree program in a higher semester on the basis of a classification test in accordance with § 49 section 11 of the law governing higher education institutions (Hochschulgesetz) will be accredited the study and examination credits reflecting the knowledge and skills demonstrated in the classification test.
- (5) If study and examination credits are accredited, then the grades – in as far as the grading systems are compatible – should also be accredited and be integrated in to the whole grade. If the grading systems are not compatible, then the Examination Committee will decide on the appropriate accreditation. The accreditation will be set out in the form of a written certificate. The students must provide the appropriate documents in order to obtain the accreditation.

- (6) The Examination Committee is responsible for accreditation. For decisions which go beyond ascertaining the equivalency, the relevant subject representative must be consulted.

§ 10 Evaluation of examinations and assessments

- (1) Assessments will be graded, or will be assessed as 'pass' or 'fail'. For the grading of assessments, the following grading scheme should be used:

1 = very good	= excellent work;
2 = good	= work which is significantly above average
3 = satisfactory	= average work;
4 = adequate	= work which, despite its weaknesses, still meets the set requirements;
5 = not adequate	= work which does not meet the set requirements due to significant deficiencies.

The individual grades can be graded up or down by 0.3 to create differentiated grades. However, the grades 0.7, 4.3, 4.7 and 5.3 are not allowed.

- (2) In order to successfully complete a module, all the assessments within that module have to be graded as at least 'adequate' or a 'pass'. The module grade is calculated as a weighted arithmetic average from the grades of each of the module assessments, unless the module description states otherwise. Grades which have been substituted by other examination results are not used in the calculation of the module grade.

The grade for a successfully completed module will have an averaged value as follows:

Up to 1.5	= very good;
1.6 to 2.5	= good;
2.6 to 3.5	= satisfactory;
3.6 to 4.0	= adequate.

With the exception of the first decimal point, all decimal points after the comma will be disregarded without rounding up. Modules which have not been successfully completed will not be graded. If an assessment has not been passed at the last possible attempt, and cannot be made up for, then this module is regarded as having been failed outright.

- (9) Grades for assessments which have more than one examiner will be calculated using the average of the individual grades. If the difference is greater than 2.0, or if one of the examiners has graded the assessment as a fail, then in the case of written assessments the Examination Committee will appoint a third qualified examiner. If this is the case, then the grade will be calculated as the average of the two highest grades. However, in this case the assessment can then only be graded as 'adequate' (ausreichend) or better if at least two of the grades are 'adequate' or better. In cases where there is a third examiner, the time limit for the grading process is extended by another six weeks.

- (3) The inclusion of the module grades and their weighting as part of the overall grade of the degree is set out in the table of modules in the appendix of these regulations. The overall grade is classified as follows:

Up to 1.5	= very good;
1.6 to 2.5	= good;
2.6 to 3.5	= satisfactory;
3.6 to 4.0	= adequate.

With the exception of the first decimal point, all decimal points after the comma will be disregarded without rounding up.

§ 11 Retaking of assessments

- (1) Assessments which have been passed are not allowed to be taken again. There is an exception: If at the end of a module which consists of a lecture and tutorial classes, the student takes the assessment at the first available date after having received admission to the module exam, he/she is then allowed to take the assessment again at the next available date for the purpose of improving the grade, even if he/she passed the assessment the first time – in this case, the better of the two grades will count towards the final degree grade.
- (2) Assessments which have not been passed, or which are regarded as having not been passed can be retaken twice. There is an exception: if the student has taken the assessment for the module, in accordance with section 1, at the first available date, and has not passed the examination, then the examination can be retaken a further three times. The retake examination should not take place within the three weeks following the announcement of the assessment results.
- (3) If the MSc dissertation is not passed, then it can be retaken once, and the topic must be a new one. Registration for the second attempt must take place within one year of the disclosure of the result of the first attempt. If the examinee does not comply with this deadline, then he/she loses the right to take the assessment again, unless it can be proved that he/she was not responsible for not complying with the deadline. If a colloquium is not passed, in accordance with § 8 section 8, it can be retaken once.

§ 12 Completion of the degree

- (1) The degree will have been successfully completed if the student has successfully completed all the required modules, and has passed the MSc dissertation, and the colloquium, and has obtained at least 120 credit points.
- (2) The degree will have been irrevocably failed and unsuccessfully concluded if the student does not pass (achieves a grade of inadequate) for the MSc dissertation or the colloquium at the second attempt, or if they fail to pass a module at the last possible attempt, and no compensatory assessments are possible.
- (3) If a candidate does not successfully complete the degree, then at his/her request, and on submission of appropriate documentation and the ex-matriculation certificate, written confirmation can be provided showing the assessments which have been successfully completed and where appropriate the grades achieved, and the assessments which have not been successfully completed, and the confirmation that the degree has not successfully been completed.

- (4) If a candidate has irrevocably failed to pass the degree, then the head of the examination committee will issue the candidate with a written communication to this effect, which will include information on the right to appeal.

§ 13 Certificate and Degree certificate

- (1) If the candidate has successfully completed the degree, then a certificate will be compiled and sent to the candidate, in general within four weeks of the disclosure of the last assessment. The certificate will contain the name of the degree program 'Physics of the Earth and Atmosphere'. The grade will then follow both in written and numerical form, up to one decimal point.

The certificate will include:

- a) The final overall grade,
 - b) The topic of the MSc dissertation,
 - c) The grade for the MSc dissertation.
- (2) The certificate will also include the date on which the last assessment took place.
- (3) At the same time as the certificate, the MSc degree certificate will be given to the candidate, and this will have the date of the certificate on it. The degree certificate will contain the academic title now conferred on the candidate in accordance with § 2
- (4) The certificate and the degree certificate will be signed by the head of the Examination committee, and will be imprinted with the seal of the faculty. The degree certificate will also be signed by the Dean of the Faculty of Mathematics and Natural Sciences.

§ 14 Diploma Supplement

- (1) In addition to the certificate relating to the successful completion of the degree program, a diploma supplement will also be made available. This will contain information about the courses attended, the modules completed, the assessments undertaken and the results (credit points and grades) obtained by the student within the degree program, thus providing a profile of the student's individual degree program and the subjects studied.
- (2) The diploma supplement also includes confirmation of the position of the overall grade according to the following ECTS assessment scale:
- A the top 10 %
 - B the next 25 %
 - C the next 30 %
 - D the next 25 %
 - E the next 10 %

The basis of the calculations in the ECTS ranking in accordance with § 10 section 4 are the overall degree grades of those students who successfully completed the degree program 'Physics of the Earth and Atmosphere' in the last three years. In

order for this ECTS ranking calculation to be carried out, the number of graduates must be at least 50. The confirmation of the ECTS ranking will therefore only be documented if this prerequisite has been fulfilled.

§ 15 Inspection of the examination records

The candidate is allowed, on application, to inspect his/her work and the relevant records and assessments relating to his/her assessments. The candidate must apply to the respective teacher, or alternatively to the Examination Committee, within the two weeks following the disclosure of the result of the assessment. The teacher or the Examination Committee respectively will then determine the time and place at which the inspection is to take place.

§ 16 Cheating, breach of regulations, protection provisions

- (1) If candidates attempt to influence the result of their assessment by cheating, e.g. through the use of non-authorized resources or means, then the assessment will be graded as inadequate (5.0), or a 'fail', where appropriate. If a candidate disrupts an examination session, then he/she can be prevented from continuing with the examination by the respective teacher or invigilator, and the examination will be assessed as 'inadequate' or a 'fail'. The reasons for preventing someone from continuing with an examination must be officially recorded. In difficult cases the Examination Committee can exclude the candidate from sitting further examinations. Attention will be specifically drawn to the further consequences as outlined in § 63 section 5 of the law governing higher education institutions (Hochschulgesetz).
- (2) The candidate can demand that the decisions reached in accordance with section 1, sentences 1 and 2 be reviewed by the Examination Committee; decisions which will have a negative effect on the candidate have to be in writing, and the reasons for the decisions have to be set out. Also, the candidate has to be made aware of his/her legal right to appeal.
- (3) The protection provisions in §§ 3, 4, 6 and 8 of the Maternity Protection Law (Mutterschutzgesetz) must be applied. If the candidate wishes to claim these protection provisions or revised time limits, she must apply in writing to the Examination Committee. The application must be accompanied by the required documentary proof. The maternity time limits will therefore result in the deadlines set out in these examination regulations being disrupted, and the length of the maternity protection period will not be calculated into the time limits.
- (4) Also, applications relating to the time periods for maternity/paternity leave also have to be taken into account according to the relevant legal regulations. The candidate must inform the Examination Committee in writing, including the required documentation, about the period of time or periods of time which they wish take as maternity/paternity leave, and they must do so at the latest four weeks before the time from which they wish to begin their maternity/paternity leave. The Examination Committee must check whether the legal prerequisites are fulfilled, by which an employee would be entitled to maternity/paternity leave according to the stipulations of the relevant legal regulations, and the committee must then inform the candidate of the result without delay, and, if appropriate, they must inform the

candidate of the new time periods/limits for the examinations. If the period of maternity/paternity leave falls within the time period for writing the MSc dissertation, then as a rule the dissertation topic will not be regarded as having been allocated. After the period of maternity/paternity leave has finished, the candidate will receive a new topic for their dissertation. The Examination Committee will rule on any exceptions to this.

- (5) Lost time due to caring for persons as set out in § 48 section 5 of the law governing higher education institutions (Hochschulgesetz), as well as that set out in other relevant legal judgements, will be accordingly considered by the Examination Committee on production of the required documentation.

§ 17 Invalidity of examinations

- (1) If the candidate is found to have cheated in an examination or assessment, and if this is only established after the certificate has been issued, then the Examination Committee can retrospectively correct the assessment of the said examination or assessment in which the candidate cheated, and they can declare the examination to be completely or partially failed.
- (2) If the prerequisites for admission to an examination were not fulfilled, and the candidate was not attempting to cheat, and this is only discovered after the certificate has been issued, then this defect is regarded as having been rectified by the candidate passing the examination. If the candidate deliberately gained admission to the examination by deceitful means, then the Examination Committee will decide on the legal consequences, in adherence to the Administrative Procedural Law (Verwaltungsverfahrensgesetz) of North Rhine Westphalia.
- (3) Before a decision is made, the candidate must be given the opportunity to respond/make a statement.
- (4) The incorrect certificate as well as all other incorrect appendices will be revoked, and if appropriate a new certificate will be issued. A decision in accordance with section 1 and section 2, clause 2, cannot be made after a period of five years from the date of the examination certificate.

§ 18 Revocation of the MSc degree

The MSc degree can be revoked if it is retrospectively established that the degree has been obtained by deceitful and forbidden means, or if significant prerequisites for the award of the degree were mistakenly regarded as having been fulfilled. § 17 applies. The Examination Committee is responsible for making the decision to revoke the degree.

§ 19 Temporary Arrangements

For the length of the period of reorganization to the new degree program, as an addendum to § 4 section 2, student representatives from the Examination Committee for the Diploma (Diplom) degrees in Geophysics or Meteorology can be enlisted.

§ 20 Coming into force and publication

- (1) The Examination Regulations will come into force on 1. 1. 2009.
- (2) The Examination Regulations will be published in the official notices of the University of Cologne.

Executed in accordance with the ruling of the Faculty of Mathematics and Natural Sciences of the University of Cologne of 22.1.2009, and the ruling of the rector of 16.02.2009.

Cologne, 03.03.2009

The Dean of the Faculty of Mathematics and Natural Sciences of the University of Cologne

(Prof H.-G. Schmalz)

Appendix: Table of Modules

In the following table the modules are grouped accordingly: A (general), G (Geophysics), PG (Practical Geophysics), M (Meteorology), PM (Practical Meteorology) and OM (Optional module Meteorology). The module group to which the module belongs is indicated in the 'module group' column.

Module name	Module group	Credit points	Weighting in the overall degree grade [%]	Prerequisites for participation	Prerequisites for admission to module examinations	Type of Assessment
Predictive Modelling	A	6	5	none	Footnote 1	Written Exam ²
Inverse Modelling	A	6	5	none	Footnote 1	Written Exam ²
Electrical and electromagnetic processes in Geophysics	G	6	5	none	Footnote 1	Written Exa ²
Geophysics of the Solar System	G	6	5	none	Footnote 1	Written Exam ²
Seismology	G	6	5	none	Footnote 1	Written Exam ²
Space Physics	G	6	5	none	Footnote 1	Written Exam ²
Geophysics lab/field practical - Advanced	PG	6	5	none	Footnote 3	Practical / Seminar / Written Exam ⁴
Physical Climatology	M	6	5	none	Footnote 1	Written Exam ²
Physics of the Atmosphere	M	6	5	none	Footnote 1	Written Exam ²
Radiation, Clouds, and Precipitation	M	6	5	none	Footnote 1	Written Exam ²
Dynamics of the atmosphere - Advanced	M	6	5	none	Footnotes 1, 5	Written Exam ²
Meteorological lab/field practical - advanced	PM	6	5	none	Footnote 3	Practical / Seminar / Written Exam ⁴
Seminar on literature and current research questions	A	10	8	Footnote 6	none	Seminar / Presentation ⁷
Project work	A	14	12	Footnote 8	none	Seminar ⁹
Master module	A	30	25	Footnote 10	none	Footnote 11
Atmospheric Chemistry	OM	6	5	none	Footnote 1	Written Exam ¹²
Boundary Layer	OM	6	5	none	Footnote 1	Written Exam ¹²
Remote sensing and data capture	OM	6	5	none	Footnote 1	Written Exam ²
Atmospheric Modelling	OM	6	5	none	Footnote 1	Written Exam ²

1: Tutorials take place parallel to the lectures, and in these tutorials tasks are set. The admissions prerequisite for the written exam is the successful completion of these practical tasks within the course.

2: The written exam is course-related, and the contents entail the work covered in the lectures and tutorials. The length of time of the written exam will be announced together with the date of the examination. If the written exam is failed, then a resit opportunity will be offered – this resit opportunity can take the form of either a written or oral exam, and will be offered within a relatively short time after the date of the original exam. Students may participate again in the lecture and tutorials in order to prepare for the resit. If a written exam is not passed, it

- can be retaken twice, and where the second resit attempt is also not passed, then the module is considered to have been failed outright.
- 3: The prerequisite for admission to the module written exam is successful participation in the seminar and the lab/field practical classes (including the writing up of the taking of the measurements and the results).
 - 4: The following will be graded: the seminar presentation, the writing up of the taking of the measurements and the results, as well as the module written exam. If a seminar presentation is not passed, it can be retaken once within the same semester. If the practical analysis section is not passed, then a student can have one retake of up to two analyses. If a module written exam is not passed, then the student will be offered the opportunity to resit it, either in the form of a written or oral exam, and the resit exam will take place fairly close to the date of the original exam. If the resit exam is not passed, then it will be recommended that the student first repeat the courses in the module, and then have the second resit attempt. If the second resit exam is not passed, then the module is considered to have been failed outright. The module grade is calculated as follows: the grade for the seminar presentation (25 %), the writing up of the taking of measurements and the results (25 %) and the final written exam (50 %).
 - 5: Within the context of the tutorials, the student must hold a short presentation (a presentation and a short write-up). The short presentation will be assessed as either 'pass' or 'fail'. If a short presentation is not passed, it can be repeated once within the same semester. Passing the short presentation is also a prerequisite for admission to the module written exam.
 - 6: In order to participate in the module 'Literature and current research questions', the student must have successfully completed at least one module from their core subject area or they must have successfully completed an optional module.
 - 7: The seminar presentation and the written presentation paper. If a seminar presentation is not passed, it can be repeated once within the same semester. If the presentation paper is not passed, then it can be repeated once within the same semester. The grades for the seminar presentation and the presentation paper make up 50% of the module grade respectively.
 - 8: Participation in the module 'Project work' is only allowed if the student has already obtained at least 48 credit points from modules within their MSc degree program.
 - 9: The seminar presentation will be graded. After the presentation, questions will be taken, and those questions which are posed by the examiner will be those that are relevant for the subsequent grading. The seminar presentation will, as a rule, be assessed by the supervisory person who allotted the topic. If a seminar is not passed, it can be retaken once. The module grade is the grade of the seminar presentation.
 - 10: Participation in the Master's module is only allowed if the student has acquired at least 84 credit points from modules within their MSc degree program. In certain exceptional cases, where there is good reason, the Examination Committee can make an exception to this.
 - 11: The MSc dissertation and the colloquium will be carried out in accordance with § 8. If an MSc dissertation is not passed, it can be repeated once, but the topic must be a new one. If a colloquium is not passed, it can be retaken once. The module grade is comprised as follows: the grade of the colloquium (25 %) and the grade of the MSc dissertation (75 %).
 - 12: The module is taken over two semesters. At the end of the each teaching semester there will be a written examination in which students will be examined on the course contents of that semester. A resit opportunity will be given either in the form of a

written or oral examination, and it will take place fairly soon after the date of the original examination. The module is passed only if the examinations in both semesters have been passed. The module grade is the average of each of the two aforementioned in accordance with examinations § 10 section 2. On application, the Examination Committee can allow combinations from examinations which have been passed in the modules 'Atmospheric Chemistry' and 'Boundary layer' as an optional module.

Options and compensation opportunities

1. In order to have successfully completed their degree, students who have 'Geophysics' as their core subject area must have passed all modules in the module groups G, PG, A (compulsory modules) as well as at least one module from the module group M or OM (chosen as an optional module). These students must also have passed three further optional modules from the module group M or OM, or from the further optional modules listed in the table in point 4 below.
2. In order to have successfully completed their degree, students who have 'Meteorology' as their core subject area must have passed all modules in the module groups M, PM, and A (compulsory modules) as well as at least one module from module group G (chosen as an optional module). These students must also have passed three further optional modules from the module group OM or from the further optional modules listed in the table in point 4 below.
3. If core elective modules (Wahlpflichtmodule) are taken at another university, then they must be registered with the Examination Committee, and approved by them.
4. The remaining core elective modules can be chosen from the following modules:
 - a. From those offered by the University of Cologne:

Subject	Module name
Physics	Atomic physics
Physics	Quantum physics
Physics	Statistical Physics
Physics	Astrophysics
Mathematics	Modules from the area of 'Analysis'
Mathematics	Modules from the area of 'Applied analysis'
Mathematics	Modules from the area of 'Numerical methods and scientific calculations'
Mathematics	Modules from the area of 'Discrete mathematics and mathematical optimisation'
Mathematics	Modules from the area of 'Mathematical Computer Science'

- b. From those offered in the MSc program 'Physics of the Earth and Atmosphere' at the University of Bonn:

Core subject area	Module
Meteorology	Dynamics of the atmosphere
Meteorology	Climate dynamics and Statistics I
Meteorology	Cloud physics
Meteorology	Remote sensing and mesoscale meteorology I
Meteorology	General Hydrodynamics
Meteorology	Climate dynamics and Statistics II
Meteorology	Special Topics in theoretical meteorology
Meteorology	Remote sensing and mesoscale meteorology II
Geophysics	Hydrogeophysics
Geophysics	Earthquake Physics
Geophysics	Tectonophysics
Geophysics	Practical Hydrogeophysics

The Examination Committee can also approve other modules as core elective modules.

5. A core elective module can be compensated for with another module in the same module group – this can only be done once.

The modules offered in this degree program can be extended. Equivalent modules can be designated by the Examination Committee; these will be announced in the appropriate way. This also applies to other equivalent modules at other universities with whom there is a cooperation agreement, in accordance with § 77 section 1 of the law governing higher education institutions (Hochschulgesetz).