

According to the resolutions passed by the Board of the Faculty of Agricultural Sciences on 4th February, 2010 and 15th April, .2010, and after the sanction of the University's Senate on 12th May, 2010, the University of Gottingen's Presidential Board approved the Examination and Degree Regulations for the consecutive Master's programme "Crop Protection" on 19th May, 2010 (§ 44 Para. 1 Sentence 2 of the Lower Saxony University Regulations (*Niedersächsische Hochschulgesetz*, NHG) in the version of 26th February, 2007 published in the official law gazette of Lower Saxony [*Niedersächsischen Gesetz- und Verordnungsblatt* (Nds. GVBl.)] p. 69), last altered through Article 4 of the law from 18th June, 2009 (Nds. GVBl. p. 280); NHG § 41 Para. 2 Sentence 2; NHG § 37 Para. 1 Sentence 3 No. 5 b).

**Examination and Degree Regulations
for the University of Gottingen's
consecutive Master's programme "Crop Protection"**

§	1	Scope, aims of the programme's examinations
§	2	Aims of the programme, career options, academic degree
§	3	Programme start, duration, language
§	4	Programme structure; semester abroad
§	5	Student advisory services and programme organisation
§	6	Teaching and learning methods; participation in courses, lectures etc. with a limited number of places
§	7	Compulsory internship
§	8	Enrolment and admittance to module examinations
§	9	Eligibility for doing the Master's thesis
§	10	Master's thesis
§	11	Master's colloquium
§	12	Assessment of the Master's thesis and colloquium
§	13	Repeatability of examinations
§	14	Examination Board
§	15	Final results and definitive failure of the Master's degree
§	16	Legal validity
Appendix I		Module overview
Appendix II		Model degree plan

§ 1 Scope, aims of the programme's examinations

(1) The Master's programme "Crop Protection" is governed by the appropriate version of the General Examination Regulations for Bachelor and Master Programmes as well as other courses at the University of Göttingen [*Allgemeinen Prüfungsordnung für Bachelor- und Master-Studiengänge sowie sonstige Angebote an der university Göttingen (APO)*].

(2) These regulations control the terms for the undertaking and completion of the Master's programme "Crop Protection". The special requirements of the Master's programme are described in these regulations.

(3) Through the examinations of this research- and career-oriented Master's programme, it should be determined whether the examinee has acquired the basic specialist knowledge necessary for the transition to professional practice, is able to understand professional specialist contexts and can be considered to be an expert in the field of crop protection, and can utilise modern scientific methods and knowledge so that they can work as a scientist in a specialised vocational field.

§ 2 Aims of the programme, career options, academic degree

(1) By doing the Master's programme in crop protection, students should become more competitive on an international scale by being better qualified for undertaking international specialist and managerial responsibilities or by being specifically prepared for doing international research abroad. The Master's programme consists of an internationally competitive tertiary education system which fulfils the qualification needs of students from industrial, emerging, developing and transition countries.

(2) Crop protection is one of the most important technologies involved in crop production. It is concerned with the cause, development and dissemination of diseases affecting economic plants, as well as the development and application of efficient, sustainable, preventative and curative methods and in determining their effects on the environment, society and the economy.

Crop protection has a close relationship with other disciplines such as plant breeding, plant cultivation, plant nutrition, agricultural engineering, microbiology, botany, biotechnology, zoology and agricultural economics.

(3) The aim of the consecutive Master's programme in crop protection is to teach the basic theories, methods, processes and questions associated with crop protection in the agricultural sciences and agri-economics using an interdisciplinary approach. The programme's alumni will have acquired knowledge about the specialties, limits, prevailing terminology and doctrines associated with crop protection. During the programme's courses, the students will gain the ability to work scientifically and to undertake scientific analyses in the specialist disciplines covered by the programme. This knowledge and understanding form the basis for the development and/or implementation of the individual's own ideas for the resolution of problems associated with crop protection, even in new and unknown situations that have a broader or multidisciplinary context.

(4) The general and specialist aims of the programme are, for example, the acquisition of

- a sound knowledge of crop protection, its methods and technology;
 - a sound knowledge of the biotic and nonbiotic agents which cause damage to economic plants in temperate and warm climates;
 - the ability to collect, represent and evaluate data from the field of crop protection;
 - the ability to utilise and interpret not only advanced analytical scientific laboratory and technical methods but also both qualitative and quantitative survey methods;
 - the ability to work with complex analytical and other types of data using agri-informatics and bioinformatics;
 - the ability to use and evaluate natural science literature, statistics and other documentation at a scientific level;
 - the ability to present scientific results orally, graphically and in writing;
 - the ability to work independently as far as possible on scientific or applied research projects;
- and
- the ability to consider and assess the effects of crop protection under its social, scientific and ethical aspects.

(5) The graduates of this Master's programme are able to deal with complex situations and knowledge and have the ability to make sound scientific decisions even on the basis of incomplete or limited information.

(6) Furthermore, this Master's programme enables the student to develop core competencies, such as networked thinking and communication skills, which will enable the student to

communicate not only information about up-to-date research and applications but also their own conclusions and motives to both specialists and the laity in a clear manner.

(7) The Master's examination shall determine whether the examinee has acquired the necessary specialist knowledge for the transition into professional practise, is able to understand professional contexts and can comprehend the use and implementation of modern scientific methods and information as an expert.

(8) The consecutive Master's programme in crop protection should help the student to prepare themselves for a specialised or scientific career. Graduates with a Master of Science degree in crop protection mainly work at the managerial level in

- agricultural firms or the food industry
- production technology consultancy
- national and international agricultural industries
- service industries, e.g. as experts or advisors
- public service, e.g. for chambers or ministries of agriculture
- international organisations
- environmental protection or landscape architecture
- universities and research institutions.

(9) The Master's programme especially qualifies the successful participant for doing a Ph.D.

(10) Once the Master's examination has been successfully completed, the university confers the title of Master of Science, abbreviated as M.Sc.

§ 3 Programme start, duration and language

(1) The Master's programme can only be started in the winter semester.

The Master's programme cannot be undertaken as a part-time course.

(2) The standard duration of the Master's programme is 4 semesters. At least 120 European Credit Transfer System (ECTS) credits (C) must be attained.

(3) On the basis of these regulations, the Faculty of Agricultural Sciences will provide courses that enable the student to complete the course of studies including all examinations in the standard time designated for the Master's programme.

(4) The Master's programme is in English.

§ 4 Programme structure, semester abroad

(1) The Master's programme corresponds to a total of 120 ECTS credits (C), which are divided as follows:

- a) specialised studies (compulsory modules) 18 C,
- b) professional training (elective modules) 72 C; 6 C for core competences and
- c) Master's thesis 30 C (including 6 C for the Master's colloquium).

(2) The number, type and scope of the modules which have to be successfully completed are regulated by the module overview (Appendix I).

A suggestion for how a student may choose to structure their Master's programme can be found in Appendix II (example of a course plan).

(3) It is possible that parts of the Master's programme may be undertaken outside of Germany, including the field research for the Master's thesis.

The Examination Board is responsible for the official acceptance of any examinations undertaken outside of Germany.

§ 5 Student advisory services and programme organisation

(1) Student advisory services are provided by the teachers involved in the Master's programme and the Faculty's student advisors. Advice concerning examinations is provided by the Registrar's Office (*Prüfungsamt*). In addition, advice is provided for students doing a Master's degree in crop protection by the programme's own Coordination Office.

(2) The Coordination Office provides a constant advisory service for the students participating in the Master's programme. Its duties and responsibilities are:

- advising students on the planning and accomplishment of their Master's courses
- acceptance of suggestions on how to improve the teaching of the courses
- advice on questions of accreditation and eligibility
- mentoring of foreign students
- initiation, administration and fostering of international relationships
- organisation of external lectures/seminars/ practicals (in Göttingen or elsewhere)
- support in the organisation of student congresses and workshops in Göttingen.

(3) The university's central Student Advisory Service (*Studienberatung*) is responsible for general student advice, especially that involving cross-faculty or interdisciplinary questions.

(4) The student should especially make use of the student advisory services in the following cases:

- after failing an examination twice
- if there is going to be any deviation from the standard duration of the Master's programme
- by any changes in the student's major field of study, Master's programme or university
- before undertaking studies outside of Germany.

§ 6 Teaching and learning methods; participation in courses, lectures, etc. with a limited number of places

(1) Modules can consist of different types of teaching techniques: lectures, seminars, practical exercises, internships and project work, or a combination of these methods.

Supplementary lectures, seminars, etc. will be provided to elucidate the subjects taught in the programme more fully.

(2) The teaching of the courses within the Master's programme and all the examinations are in English.

(3) Certain courses have a limited number of places. These include:

a) field trips

- b) excursions
- c) practical exercises
- d) internships
- e) seminars.

The teachers of these courses will inform the students about the specific number of participants.

(4) The participation in courses with a limited number of participants is first reserved for those students in the later semesters of the programme.

The selection of participants under students with similar eligibility will be decided by drawing lots.

§ 7 Compulsory internship

Each student must undertake a compulsory six-week internship.

An adequate number of internship positions will be provided for the programme's participants. A list of possible internship positions will be published in a suitable manner.

Internships which are not included on this list must be approved by the Chair of the Examination Board. The Chair is also responsible for the recognition of the internship certificate, in which the organisation responsible for the internship confirms the student having worked there and specifies the type of duties and responsibilities that have been undertaken.

The student must write an internship report, which must be given as a presentation in a seminar.

§ 8 Enrolment and admittance to module examinations

(1) The Examination Board will authorise two three-week examination periods for every semester. These examination periods will apply to all module types and will take place at the beginning and end of the semester. These periods may not overlap the lecture period for more than one week.

(2) The dates for the module examinations are set within the examination periods by the people responsible for each respective module in agreement with the Chair of the Examination Board.

The date for a module examination shall be published on AGROPAG/FlexNow (*Agrarwissenschaftlichen Online Prüfungsamt*) no later than six weeks before the examination.

(3) The registration for a module examination must be done in writing or electronically in the form and by a deadline determined by the Examination Board.

Deregistration without giving any reasons can be done up to one day before the examination date as long as there is more than one day between the end of the registration period and the examination date. A later deregistration is not possible unless due cause is given in writing (e.g. doctor's attestation).

(4) The registration for oral module examinations must be done in writing or electronically in the form and by a deadline determined by the Examination Board.

Deregistration without giving any reasons can be done up to seven days before the examination date as long as there is a period of more than seven days between the end of the registration period and the examination date. A later deregistration is not possible unless due cause is given in writing (e.g. doctor's attestation).

(5) The registration for examinations for other types of courses must be done at the beginning of the course.

Deregistration for course papers can be done up to the submission date of the paper.

Deregistration for presentations is possible up to two weeks before the date of the presentation as long as there is a period of more than two weeks between the registration deadline and the examination date. A later deregistration is not possible unless due cause is given in writing (e.g. doctor's attestation).

§ 9 Eligibility for doing the Master's thesis

(1) The conditions for being allowed to undertake a Master's thesis is the successful completion of modules with at least 72 C, including the compulsory modules consisting of 18 C.

(2) The acceptance for doing a Master's thesis must be applied for in writing to the relevant Examination Board. The following documentation must also be included:

- a) written proof showing that the conditions laid out in Para. 1 have been fulfilled
- b) proposal for the topic of the Master's thesis
- c) written confirmation of undertaking the thesis supervision from the primary and secondary supervisors
- d) declaration that a similar or comparable Master's examination has not been failed or considered as being failed at a university either in Germany or elsewhere.

The proposals for b) and c) are not necessary if the student ensures that they have not been able to find any supervisors. In such cases, the Examination Board will designate the student's thesis supervisors and the topic of his/her Master's thesis.

(3) The Examination Board decides on a student's eligibility for doing a Master's thesis. This is denied when the admission requirements have not been fulfilled or if the student has failed a similar or comparable Master's examination at a university in Germany or elsewhere.

§ 10 Master's thesis

(1) The written Master's thesis should show that the candidate is able to work on a problem in his/her chosen specialty area within a predetermined period of time. By writing the thesis, the student should develop his/her personal scientifically based judgement, learn to put forward scientifically based arguments and be able to present his/her results in a linguistically and formally appropriate manner.

(2) The Master's thesis is to be written in English.

(3) The preliminary topic of the Master's thesis should be decided upon with the proposed supervisor and can be taken from any of the fields covered by the Master's programme "Crop Protection". This should be submitted with the name of the proposed secondary supervisor to the relevant Examination Board.

If the candidate is not able to find a supervisor, then a supervisor and a topic for the Master's thesis will be put forward by the relevant Examination Board. The wishes of the candidate should

be taken into consideration.

The right of making a proposal for the Master's thesis topic does not establish a legal claim.

The topic of the Master's thesis is approved by the Registrar's Office under the responsibility of the Chair of the Examination Board. The date of approval must be put on record.

(4) In cases where the Master's thesis is completed in a country outside of Germany, then the supervision of the Master's thesis is done by the foreign supervisor as regulated under the respective Learning Agreements.

The undertaking of a Master's thesis outside of Germany requires the prior permission of the Examination Board.

(5) The time limit for completing the Master's thesis is 23 weeks. This time limit can be extended for a maximum of 6 weeks by the Examination Board upon written application by the candidate if the reason for delay is not attributable to the candidate's own fault and the extension is in agreement with the student's supervisor.

One important reason for applying for an extension is the candidate becoming ill. Such situations must be reported immediately and confirmed by a doctor's certificate or attestation.

(6) The topic of the Master's thesis can only be changed once and only within the first 10 weeks of starting the thesis. A new topic must be immediately submitted, at the latest within 4 weeks.

In cases where the Master's thesis has to be repeated, the thesis topic can only be changed if the candidate has not used his/her right to change the topic (as stated in Sentence 1) in his/her first attempt at passing this part of the Master's degree.

(7) Two copies of the written Master's thesis must be submitted to the relevant Registrar's Office by the set deadline. The date of submission must be officially recorded.

The candidate must at the same time submit a written declaration that they have independently completed the work and that they have used no sources or aids other than the ones stated in the thesis.

(8) The Examination Board will forward the Master's thesis to the primary and secondary supervisors so they may evaluate the thesis.

(9) The duration of the evaluation of the thesis should be no longer than 6 weeks.

§ 11 Master's colloquium

(1) In the Master's colloquium, after giving a 30-minute introductory lecture, the examinee has to show in the subsequent discussion on the thesis that he/she is able to personally answer interdisciplinary and problem-related questions using scientific reasoning, and correlate their answers to the whole field of agricultural science.

The colloquium will last for a total of ca. 60 minutes.

(2) To be eligible for holding a thesis colloquium, the candidate's Master's thesis must at least have the grade of "satisfactory".

(3) The colloquium should be held within six weeks after the Master's thesis has been submitted.

(4) The colloquium is undertaken as an examination by the supervisors of the Master's thesis.

If the thesis topic is interdisciplinary, then the Examination Board can appoint up to two additional examiners in agreement with the candidate.

(5) The colloquium is open to members of the university.

§ 12 Assessment of the written Master's thesis and colloquium

(1) The primary supervisor shall write an assessment of the Master's thesis, including a proposed grade. The assessment is then forwarded to the secondary supervisor, who can either agree with the primary supervisor or submit a differing assessment. In cases where there are disparate assessments, the supervisors must submit a mutually acceptable assessment. If the two supervisors are not able to reach a consensus, the Examination Board can appoint a third

assessor who will single-handedly grade the thesis. The third assessor can either choose one of the previously suggested grades or a grade lying between them.

(2) The grade for the Master's colloquium is the arithmetical mean of the grades given by the two supervisors.

(3) A final grade is then calculated for both the written thesis and the Master's colloquium. This is equivalent to the weighted arithmetical mean of the grade for the written thesis and for the colloquium. The grade for the written thesis is weighted with 80%; the grade of the colloquium with 20%.

The final grade is included in the total results of the Master's degree, with a weighting of 30 C.

§ 13 Repeatability of examinations

(1) Failed module examinations and the colloquium thesis can be repeated twice.

The second repeat of a module examination should be done as an oral examination.

(2) Repeat examinations for the required elective modules must be taken within a year after the results of the failed examination have been made officially known. If this deadline is overstepped, then the respective examination will be considered as being failed unless the student has good grounds for not having done the examination in time. By the submission of an important reason for missing the examination deadline (e.g. doctor's attestation confirming illness), the Examination Board can grant a suitable extension time upon written request.

(3) A Master's thesis which has been graded as "unsatisfactory" can be repeated once.

(4) A repetition of passed examinations for improving the average grade is not possible.

§ 14 Examination Board

(1) The Examination Board consists of five members, who are appointed by the different group representatives in the Faculty Council: three members are chosen from the university's professors,

one member from the scientific co-workers and one member from the faculty's students. A substitute should be chosen from each of the three groups.

(2) The Examination Board chooses its Chair and substitute Chair from the three professors' representatives.

(3) The Dean of Students belongs to the board in an advisory capacity.

(4) The Examination Board can consider suggestions for quality assurance and make any necessary changes in the examination regulations. Before they are forwarded to the faculty councils, such changes should be sent to the relevant academic commission for their opinion.

§ 15 Final results and definitive failure of the Master's examinations

(1) In addition to those situations regulated by the APO¹, students lose the right to be examined when either in this Master's programme or in a comparable Master's programme at another university in Germany or elsewhere

a) they have not acquired at least 60 C by the end of the fourth semester or

b) they have not acquired all the credits necessary for passing the Master's examination by the end of the eighth semester.

In such cases, the Master's examination is considered to be definitively failed.

The time limits set under a) and b) may be extended if the reason for the delay is not the student's own fault. The Examination Board will decide on such cases upon written request by the respective student, who will have to submit written proof of the reason for delay.

(2) Written notification of the definitive failing of the Master's examination will be given to the student. Information about the student's right to appeal has to be included in the letter.

¹ General Examination Regulations for Bachelor and Master programmes as well as Other Courses at the University of Göttingen

(3) The overall grade "with distinction" is given when the Master's thesis has a grade of 1.0 and the average grade of the other examinations is at least 1.5.

§ 16 Legal validity

These examination regulations took effect on the day after their being published in the Official Announcements of the University of Göttingen [*Amtlichen Mitteilungen der Georg-August University Göttingen*].

Appendix I: Module overview for the Master's programme "Crop Protection"

A successful completion of courses of 120 C is required.

I. Specialised studies (18 C)

The following compulsory modules of 18 C must be successfully completed:

M.Cp.0001	Scientific Working Methods	(9 C/6 WSCH ¹)
M.Cp.0002	Internship, 6 weeks practical work and report	(9C/equivalent to 6 WSCH)

II. Professional training

a) Elective modules of at least 66 C must be successfully completed.

M.Cp.0003	Crop Production Systems in Temperate Zones	(6 C/4 WSCH)
M.Cp.0004	Plant Diseases and Pests in Temperate Zones	(6 C/6 WSCH)
M.Cp.0005	Integrated Management of Pests and Diseases	(6 C/4 WSCH)
M.Cp.0006	Pesticides I: Mode of Action and Application Techniques, Resistance to Pesticides	(6 C/4 WSCH)

¹ WSCH: weekly student class hours

M.Cp.0007	Pesticides II: Toxicology, Ecotoxicology, Environmental Metabolism, Regulation and Registration	(6 C/4 WSCH)
P 12 SIA	Crops and Production Systems in the Tropics	(6 C/4 WSCH)
M.Agr.0055	Pests and Diseases of Tropical Crops	(6 C/4 WSCH)
M.Agr.0009	Biological Control and Biodiversity	(6 C/4 WSCH)
M.Agr.0023	Interactions between Plants and Phytopathogens	(6 C/4 WSCH)
M.Cp.0008	Mycotoxins and Fungal Virulence Factors	(6 C/4 WSCH)
M.Agr.0039	Molecular Techniques in Phytopathology	(6 C/4 WSCH)
M.Cp.0009	Basics of Molecular Biology in Crop Protection	(6 C/4 WSCH)
M.Agr.0045	Mycology	(6 C/6 WSCH)
M.Cp.0010	Plant Pathology and Crop Protection Seminar	(3C/2 WSCH)
M.Agr.0057	Plant Virology	(6 C/6 WSCH)
M.Agr.0058	Plant/Herbivore Interactions	(6 C/4 WSCH)
M.Agr.0050	Nematology	(6 C/4 WSCH)

M.Cp.0011	Agricultural Entomology Seminar	(3 C/2 WSCH)
M.Cp.0012	Environmental Impact of Genetically Modified Plants	(3 C/2 WSCH)
M.Cp.0013	Weed Biology and Weed Management	(6 C/4 WSCH)
M.Cp.0014	Weeds and Herbicides/Applied Weed Science	(6 C/4 WSCH)
M.Agr.0056	Plant Breeding Methodology and Genetic Resources	(6 C/4 WSCH)
M.Agr.0010	Biotechnological Applications in Plant Breeding	(6 C/4 WSCH)
M.Cp.0015	Plant Nutrition and Plant Health	(6 C/4 WSCH)
E 13M	Microeconomic Theory and Quantitative Methods of Agricultural Production	(6 C/4 WSCH)
P 07 SIA	Soil and Plant Sciences	(6 C/4 WSCH)
P 03 SIA	Ecological Soil Biology	(6 C/4 WSCH)
P 15M SIA	Methods and Advances in Plant Protection	(6 C/4 WSCH)
M.Forst.605	Forest Protection and Agroforestry	(6 C/6 WSCH)

In addition, upon approval of a written request to the Examination Board, the student may undertake a module worth 6 C in a Master's programme at another faculty as long as the respective Master's programme has a meaningful structure comparable to the aims of this Master's programme in crop protection and when the faculty offering the module is in agreement.

2. Core competences

At least one of two elective modules of 6 C must be successfully completed.

M.qmw.01	Applied Statistical Modelling	(6 C/4 WSCH)
M.qmw.04	Econometrics	(6 C/4 WSCH)

III. Master's thesis / colloquium

24 C are awarded for the successful completion of the written Master's thesis.

6 C are awarded for the successful completion of the Master's colloquium.

Appendix II: Example of a study plan for the consecutive Master's programme "Crop Protection"

	Module 1	Module 2	Module 3	Module 4	Module 5
1 st sem. 30_C	M.Cp.0005 Integrated Management of Pests and Diseases 6 C OE ca. 20 Min	M.Cp.0003 Crop Production in Temperate Zones 6 C OE ca. 20 Min	M.Cp.0006 Pesticides I: Mode of Action and Application Techniques 6 C WE ca. 45 Min	M.Agr. 0045 Mycology 6 C OE ca. 25 Min	Core competences M.qmw.04 Econometrics I 6C WE ca. 90 Min
2 nd sem. 27 C	M.Cp.0001 Scientific Working Methods I. Journal club II. Scientific Writing and Presenting III. Basic Laboratory Techniques 9C PR ca. 20 Min, CP 10 pages (I + II) WE ca. 45 minutes (III)		M.Cp.0004 Plant Pests and Diseases in Temperate Zones 6 C WE ca. 45 Min	M.Cp.0015 Weeds and Herbicides/ Applied Weed Science 6 C OE ca. 25 Min	M.Cp.0010 Basics of Molecular Biology in Crop Protection 6C WE ca. 45 Min
	M.Cp.0002 Internship (6 weeks); CP max. 20 pages, PR ca. 15 Min. (see Internship seminar)				
3 rd sem. 33 C	Internship Seminar 9 C PR ca. 15 Min	M.Agr. 0057 Virology 6 C WE ca. 45 Min	M.Cp.0014 Weed Biology and Weed Management 6 C OE ca. 20 Min PR ca. 20 Min	M.Cp.0007 Pesticides II Toxicology Ecotoxicology, Environmental Metabolism, Regulation and Registration 6 C WE ca. 45 Min	M.Agr. 0058 Plant Herbivore Interactions 6 C WE ca. 45 Min PR ca. 20 Min
4 th sem. Master's thesis and colloquium	Written Master's thesis 24 C				Master's colloquium 6 C

Key: OE = oral examination, WE = written examination, PR = presentation, CP = course paper