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***This translation is provided solely as a courtesy to international students and applicants. Reliance in law may only be placed upon the official German version of these Regulations.***

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**Faculty of Economic Sciences (responsible faculty):**

According to resolutions of the faculty councils of the Faculty of Economic Sciences of 29.01.2014, the Faculty of Medicine of 20.01.2014, the Faculty of Biology and Psychology of 17.01.2014, the Faculty of Agricultural Sciences of 16.01.2014, the Faculty of Forest Sciences and Forest Ecology of 21.01.2014 and the Faculty of Social Sciences of 22.01.2014 as well as according to the statement of the senate of 12.03.2014 the Presidential Board of the Georg-August-Universität Göttingen on 18.03.2014 approved the regulations of the doctoral degree programme "Applied Statistics and Empirical Methods" (§§ 9 section 3 sentence 1, 44, section 1, sentence 2 NHG in the version of the publication of 26.02.2007 (transcript GVBl. p. 69), last amended by Article 1 of the Act dated 11.12.2013 (Nds. GVBl. p. 287); § 41 section 2 sentence 2 NHG, § 37 section 1 sentence 3 no. 5 letter b) NHG).

**Regulation**

**of the doctoral degree programme "Applied Statistics and Empirical Methods"  
at the Georg-August-Universität Göttingen**

**§ 1 Scope**

(1) <sup>1</sup>The doctoral degree programme "Applied Statistics and Empirical Methods" is jointly provided by the Faculty of Medicine, the Faculty of Biology and Psychology, the Faculty of Agricultural Sciences, the Faculty of Forest Sciences and Forest Ecology, the Faculty of Social Sciences and the Faculty of Economic Sciences for the development of early career researchers in the area of statistics and their fields of application in various disciplines of natural, life and social sciences. <sup>2</sup>The Faculty of Economic Sciences is in charge of the programme. <sup>3</sup>The doctoral degree programme takes the various doctoral cultures of the participating research areas into consideration; depending on the intended research area of the doctoral project, it can be completed independently according to the following sections 2, 3 or according to section 4 embedded into a doctoral degree course programme. <sup>4</sup>Decisive for the allocation are the examination authorisation of the first supervisor as well as the personal requirements of the applicants; in case of section 4, the admission for one of the stated doctoral studies is a requirement for the admission into the doctoral degree programme.

(2) <sup>1</sup>The doctoral degree programme "Applied Statistics and Empirical Methods" is a doctoral degree programme within the framework of the mathematical-natural science graduate school of the Georg-August-Universität Göttingen – Georg-August University School of Science (GAUSS). <sup>2</sup>The provisions of the "Doctoral degree regulations in the mathematical-natural sciences graduate school at Georg-August-Universität Göttingen – Georg-August University School of Science (GAUSS) –" (RerNatO) in their respective valid versions shall apply to the doctoral project in the mathematical-natural science field as well as in information sciences. <sup>3</sup>This regulation controls the supplementary subject-specific provisions for the completion of the doctoral studies in the doctoral degree programme "Applied Statistics and Empirical Methods".

(3) <sup>1</sup>The doctoral degree regulations for Human Sciences in Medicine (ScHumO) shall apply in their respective valid version to doctoral projects in the field of medical human sciences <sup>2</sup>This regulation controls the supplementary subject-specific provisions for the completion of the doctoral studies in the doctoral degree programme "Applied Statistics and Empirical Methods".

(4) <sup>1</sup>The doctoral degree programme "Applied Statistics and Empirical Methods" can be completed by students

- a) of the doctoral degree course programme for agricultural sciences Göttingen (PAG),
- b) of the doctoral degree course programme in Forest Sciences and Forest Economy,
- c) of the doctoral degree course programme in Economic Sciences,
- d) of the doctoral degree course programme for Social sciences.

<sup>2</sup>These regulations controls the provisions for the completion of the doctoral studies in the doctoral degree programme "Applied Statistics and Empirical Methods". <sup>3</sup>The doctoral examination is exclusively carried out for students within the meaning of sentence 1 according to the provisions of the examination or examination and study regulations of the studied doctoral degree course programme. <sup>4</sup>The responsibilities of the bodies formed for the courses of study according to sentence 1 shall remain unaffected; before decisions, which affect the students of the doctoral degree programme "Applied Statistics and Empirical Methods", the programme committee according to § 7 should be heard; decisions concerning the composition of thesis committees as well as concerning the examination language should satisfy the conditions according to § 5 section 1 sentence 2 and § 6.

## **§ 2 Aim of the qualification**

(1) <sup>1</sup>The increasing quantitative development of numerous scientific disciplines, and also general areas of life, result in the increased availability of corresponding data of substantial complexity and heterogeneity, and hence increase the relevance of statistical methods for the extraction of information coded in the data. <sup>2</sup>Statistics is thus one of the key disciplines of the information era and an essential requirement for academic progress in manifold research

areas. <sup>3</sup>The doctoral degree programme “Applied Statistics and Empirical Methods” teaches the doctoral candidates the ability to apply statistical approaches to novel problems and to make independent contributions to the research in the field of statistics.

(2) Aims of the studies within a narrower context are the acquisition

a) of the competence to develop and implement new statistical methods adjusted to existing problems,

b) of the ability to apply advanced statistical modelling and analytical approaches in applied questions,

c) of the ability to convey statistical methods and research results to specialists and to the scientifically interested general public and

d) of *soft skills* of scientific work.

### **§ 3 Qualifications for entry**

(1) <sup>1</sup>The admission pre-requisite is the proof of components in statistics comprising at least 30 credits (ECTS-Credits, abbreviated "C"), including at least 12 credits from modules with an average or high academic standard. <sup>2</sup>The programme committee can render the admission dependent on subsequently providing components according to sentence 1, which have not been accomplished yet, within two semesters; in this case the admission is subject to the condition subsequent up to the proof of the still pending components, which must have been received by the University within two semesters since the enrolment. <sup>3</sup>If the proof of the still pending components is not submitted within the deadline, the letter of entrance will become ineffective. <sup>4</sup>A resolution according to sentence 2 is excluded if the scope of the components according to sentence 1 that have not been accomplished yet comprises more than 15 credits.

(2) <sup>1</sup>Applicants whose mother tongue is not English must demonstrate adequate English language skills. <sup>2</sup>Deemed as proof of adequate skills is the successful completion of the module "Scientific English II" (module number: SK.FS.E-FN-C1-2) or "Business English II" (module number: SK.FS.E-FW-C1-2). <sup>3</sup>Otherwise, adequate English language skills can be proven by achieving minimum results in one of the following internationally accredited test, especially through:

- a) International English Language Testing System (IELTS), at least band 5.5;
- b) Cambridge Certificate in Advanced English at least with the grade "B";
- c) Written test of "Test of English as a Foreign Language" (TOEFL-PBT): at least 550 points;
- d) Internet-based test of "Test of English as a Foreign Language" (TOEFL-iBT): at least 79 points;
- e) C1 proof according to CEF (Common European Framework);
- f) UNICert of the level III.

<sup>4</sup>Successful completion of the test may not be more than three years before the application for admission to the doctoral degree programme is received. <sup>5</sup>The obligation to prove a test need not be met by applicants with at least two years spent studying or working abroad in an English-speaking country within the last three years before submitting the application for admission and such applicants, who have completed a prior course of study in this language. <sup>6</sup>The programme committee will decide on the recognition of other proof of adequate English skills.

(3) Additional entrance requirement is a written promise by an authorised examining member in the intended research area, who is a member of the Centre for Statistics (ZfS) that he or she shall accept and supervise the applicant in the case of being admitted to the programme as a doctoral candidate.

(4) Additionally a person is entitled to entrance only, who

a) satisfies the requirements of § 4 of the doctoral degree regulations in the mathematical-natural sciences graduate school at Georg-August-Universität Göttingen – Georg-August University School of Science (GAUSS) –" (RerNatO) in their respectively valid version,

b) satisfies the requirements of § 4 of the doctoral degree regulations for Human Sciences in Medicine (ScHumO) in their respectively valid version, or

c) has been admitted to one of the doctoral studies according to § 1 section 4 sentence 1.

(5) <sup>1</sup>The admission to the doctoral degree programme can be withdrawn or revoked for an important reason at all times. <sup>2</sup>In general, an important reason is deemed prevalent if the doctoral student

a) proves consistently unsuitable despite sufficient supervision,

b) fails repeatedly or to a significant extent in fulfilling the tasks with which he or she has been charged, in particular if he or she repeatedly and despite caution violates his or her reporting duties,

c) has breached the regulation to ensure good scientific practice,

d) his or her acceptance as doctoral candidate was acquired wrongfully by means of deception as concerns provision of the qualifications for entry,

or

e) if the relationship of trust with the doctoral student is finally and irretrievably breached for reasons for which the doctoral student must carry responsibility.

A revocation or withdrawal of the admission to the doctoral degree programme "Applied Statistics and Empirical Methods" shall have no effect on the enrolment in one of the doctoral degree course programmes according to § 1 section 4 sentence 1.

#### **§ 4 Set-up of the doctoral studies**

The doctoral studies comprise the successful participation in modules, summer schools and conferences with a total rating of at least 27 credits according to the appendix.

#### **§ 5 Thesis committee**

(1) <sup>1</sup>Notwithstanding § 5 section 1 sentence 1 RerNatO and § 6 section 1 sentence 1 ScHumO at least three authorised examiners of the doctoral degree programme will be members of the thesis committee, including the supervisor of the dissertation. <sup>2</sup>At least two of the members of the thesis committee must be members of the Centre for Statistics.

(2) <sup>1</sup>The thesis committee provides support and promotes the doctoral candidate. <sup>2</sup>The said candidate must provide the thesis committee with a comprehensive, regular report, at least however once per semester, on the progress in the doctoral project and must also report on examination prerequisites completed to date. <sup>3</sup>The first report shall be submitted six months following enrolment. <sup>4</sup>The satisfaction of the reporting duties and resulting agreements between the thesis committee and the doctoral candidate are to be documented.

#### **§ 6 Examination language**

Notwithstanding §§ 10 section 3 sentence 1, 16 section 1 RerNatO and §§ 11 section 2 sentence 1, 18 section 2 sentence 1 ScHumO the dissertation and oral examination are to be written respectively taken in the English language.

#### **§ 7 Programme committee**

(1) <sup>1</sup>For the planning and execution of the doctoral degree programme as well as for the organisation and execution of examination prerequisites and examinations the supporting faculties form a programme committee (examination board within the meaning of RerNatO), which has six members, including four members of the group of professorial staff, who are authorised examiners, one member of the group of non-professorial academic staff and one member of the group of doctoral candidates. <sup>2</sup>The members will be appointed by the respective group representations in the executive board of the Centre for Statistics (ZfS). <sup>3</sup>At the same time a deputy will be appointed for each member. <sup>4</sup>The period of office of the members of the programme committee is three years, for the doctoral candidate member one year; re-appointment is possible.

(2) The programme committee shall elect a chairperson as well as his or her deputy from among its members who are authorised examiners.

(3) <sup>1</sup>The programme committee is responsible for the development of the curriculum as well as for performing the tasks that are allocated by the RerNatO as well as these regulations. <sup>2</sup>The programme committee will in particular ensure the execution of the examinations; for their organisational and technical processing it uses the office of the ZfS.

(4) The programme committee reports to the supporting faculties regularly about the development of the examinations and study periods; the report is to be published in a suitable manner.

(5) The programme committee and examination board or the office appointed by it maintains the examination files.

(6) <sup>1</sup>The programme committee constitutes a quorum, if the majority of its members, including at least two members of the group of professorial staff, including the chairperson or the deputy chairperson are present. <sup>2</sup>An abstention is not permitted with examination decisions. <sup>3</sup>The doctoral candidate member will only act in an advisory capacity with decisions concerning the assessment and crediting of examination and study prerequisites. <sup>4</sup>In case of an equal number of votes the vote of the chairperson or – in their absence – the deputy chairperson will be decisive.

(7) The members of the programme committee are entitled to act as observers in the assessment of the exams.

(8) <sup>1</sup>Examination prerequisites completed on the basis of an agreement between the University of Göttingen, the doctoral candidate and a different university shall be recognised without any assessment of equivalence. <sup>2</sup>Any examination prerequisites completed within or outside of a university shall otherwise be recognised, provided that equivalence is ascertained. <sup>3</sup>The doctoral candidate is responsible for submission of the documents required for this recognition. <sup>4</sup>Examination prerequisites shall not be recognised in the event that they were completed in the course of study or in the consecutive courses of study whose completion provided the basis for entry into the doctoral degree programme and which were necessary in order to complete said course or courses of study. <sup>5</sup>The university is required to provide reasoning for any decision not to recognise examination prerequisites (reversal of the burden of proof as specified in the Lisbon Convention). <sup>6</sup>The programme committee decides on the transfer of credits.

(9) The responsibilities of the graduate committee within the meaning of ScHumO as well as the bodies relating to the course of study formed for the doctoral studies according to § 1 section 4 sentence 1 shall remain unaffected.

### **§ 8 Doctorate certificate**

In the doctorate certificate it is to be noted that the acquired doctorate degree will be conferred after completion of the doctoral studies in the doctoral degree programme "Applied Statistics and Empirical Methods".

### **§ 9 Coming into force**

This regulation enters into force on the day following its announcement in the official announcements I of Georg-August-Universität Göttingen.

## **Appendix (re § 4)**

### **examination prerequisites within the framework of the doctoral degree programme**

Pre-requisites with a total rating of at least 27 credits should be successfully completed in accordance with the following provisions.

#### **1. Statistical methods**

At least two of the following modules with a total rating of 12 C should be successfully completed:

- M.WIWI-QMW.0001 Generalized Linear Models (6 C)
- M.WIWI-QMW.0002 Methods of Statistical Inference (Likelihood & Bayes) (6 C)
- M.WIWI-QMW.0005 Econometrics II (6 C)
- M.WIWI-QMW.0009 Time Series Analysis (6 C)
- M.WIWI-QMW.0010 Multivariate Procedures (6 C)
- M.WIWI-QMW.0011 Statistical Programming with R (6 C)
- M.WIWI-QMW.0016 Spatial Statistics (6 C)
- M.MED.0002 Longitudinal Data (6 C)
- M.MED.0003 Time-to-Event Analysis (6 C)
- SK.Bio.705 Data Mining for the Bioinformatics (6 C)
- M.Inf.1211 Probabilistic Data Models and their Applications (6 C)
- M.Mat.4541 Specialisation in the cycle "Applied and Mathematical Stochastic" (9 C)
- M.Mat.4542 Specialisation in the cycle "Stochastic Processes" (9 C)
- M.Mat.4543 Specialisation in the cycle "Stochastic Methods of the Business Mathematics" (9 C)
- M.Mat.4544 Specialisation in the cycle "Mathematical Statistics" (9 C)
- M.Mat.4545 Specialisation in the cycle "Statistical Modelling and Inference" (9 C)
- M.Mat.4641 Aspects in the cycle "Applied and Mathematical Stochastic" (6 C)
- M.Mat.4642 Aspects in the cycle "Stochastic Processes" (6 C)
- M.Mat.4643 Aspects in the cycle "Stochastic Methods of the Business Mathematics" (6 C)
- M.Mat.4644 Aspects in the cycle "Mathematical Statistics" (6 C)
- M.Mat.4645 Aspects in the cycle "Statistical Modelling and Inference" (6 C)
- P.SPS.01 Introduction to Mixed Models and Spatial Statistics (8 C)
- P.SPS.02 Advances in Spatial Statistics (4 C)
- P.SPS.03 Generalised Regression (4 C)

## 2. Specialisation

At least one of the following modules with a rating of 4 credits should be successfully completed:

- M.WIWI-BWL.0106 Topics in Quantitative Marketing and Economics (6 C)
- M.WIWI-QMW.0012 Multivariate Time Series Analysis (6 C)
- M.WIWI-QMW.0013 Applied Econometrics (6 C)
- M.WIWI-QMW.0019 Statistical Methods for Impact Evaluation (6 C)
- M.WIWI-VWL.0022 Analysis of Micro Data (6 C)
- M.WIWI-VWL.0041 Panel Data Econometrics (6 C)
- M.MED.0004 Clinical Studies (6 C)
- M.MED.0005 Statistical Methods for the Bioinformatics (6 C)
- B.Bio.701-1 Algorithms in Bioinformatics I (5 C)
- B.Bio.704 Algorithms in Bioinformatics II (5 C)
- M.Mat.4741 Special course in the cycle "Applied and Mathematical Stochastic" (3 C)
- M.Mat.4742 Special course in the cycle "Stochastic Processes" (3 C)
- M.Mat.4743 Special course in the cycle "Stochastic Methods of the Business Mathematics" (3 C)
- M.Mat.4744 Special course in the cycle "Mathematical Statistics" (3 C)
- M.Mat.4745 Special course in the cycle "Statistical Modelling and Inference" (3 C)
- M.Mat.4841 Seminar course in the cycle "Applied and Mathematical Stochastic" (3 C)
- M.Mat.4842 Seminar course in the cycle "Stochastic Processes" (3 C)
- M.Mat.4843 Seminar course in the cycle "Stochastic Methods of the Business Mathematics" (3 C)
- M.Mat.4844 Seminar course in the cycle "Mathematical Statistics" (3 C)
- M.Mat.4845 Seminar course in the cycle "Statistical Modelling and Inference" (3 C)
- M.Mat.4941 Advanced seminar course in the cycle "Applied and Mathematical Stochastic" (3 C)
- M.Mat.4942 Advanced seminar course in the cycle "Stochastic Processes" (3 C)
- M.Mat.4943 Advanced seminar course in the cycle "Stochastic Methods of the Business Mathematics" (3 C)
- M.Mat.4944 Advanced seminar course in the cycle "Mathematical Statistics" (3 C)
- M.Mat.4945 Advanced seminar course in the cycle "Statistical Modelling and Inference" (3 C)
- P.Forst.110 Spatial statistics (3 C)
- M.Forst.1422 Remote Sensing and GIS (6 C)
- M.Forst.1513 Monitoring of forest resources (6 C)
- M.Forst.1609 Remote sensing image processing with open source software (6 C)
- PAG 0060 Advanced methods in animal breeding and statistical genetics (6 C)



- PAG 0065 Market Integration and Price Transmission (6 C)  
PAG 0043 Efficiency and Productivity Analysis: Stochastic Approaches (6 C)  
PAG 0070 Risk Analysis and Risk Management in Agriculture (6 C)  
GRK1666.ME04 Consumer behavior and demand analysis: Theory and applications (3 C)  
PAG 0073 Consumer Behavior and Demand Analysis II: Theory and Applications (6 C)  
PAG 0080 Statistical Methods and Analyses in the Agricultural Sciences (6 C)

### **3. Research course**

At least one of the following modules with a rating of 4 credits should be successfully completed:

- P.ASEM.0001 Research seminar course (4 C)

### **4. Summer schools/Conferences**

At least one of the following modules with a rating of 3 credits should be successfully completed:

- P.ASEM.0002 Summer schools (2 C)  
P.ASEM.0003 Conferences (1 C)

### **5. Key competences**

Modules have to be successfully completed in the total rating of at least 4 C in order to acquire key competences (e.g. good scientific practice, scientific writing, career planning, presentation techniques, diversity, etc.). More specific details are to be agreed between the thesis committee and the doctoral candidate.

### **6. Special provisions for doctoral projects from medicine**

Doctoral candidates in medical human sciences must at least accomplish a total of 4 C through a non-independent teaching and supervisory activity according to the following provisions:

- (1) The teaching performance is to be provided by the organisation and execution of exercises relating to the lectures of the Faculty of Medicine stated for numbers 1 and 2 (MED code). 1 C corresponds to 1 SWS (semester hour per week).
  - (2) 1 credit is awarded per SWS for supervising students during seminars or internships; 2 credits are awarded for supervision during lab rotations with a scope of at least 6 weeks and also for the supervision of bachelor theses. Further, 3 credits can be awarded for the supervision of a Diplom or a master thesis. Certification shall be issued by one of the supervisors.
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