

Care was taken to ensure the text of these regulations is accurate and up-to-date; the present version may nevertheless contain errors. The official, legally binding version can be viewed in the Examinations Office, the Student Advising Office, or online at <https://www.amtliche-bekanntmachungen.uni-bayreuth.de/de/>. Please note the effective dates of the amendments.

**Examination and Study Regulations**  
**for the International Master's Elite Graduate Programme**  
**Scientific Computing**  
**as part of the Elite Network of Bavaria (ENB)**  
**at the University of Bayreuth**  
**dated 25 September 2024**  
**in the version**  
**dated 20 Dezember 2024**

Article 9 sentence 1 in conjunction with Article 80 para 1 sentence 1 and Article 84 para 2 sentence 1 BayHIG forms the framework for the following regulations issued by the University of Bayreuth.

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## § 1

### General Examination & Study Regulations

<sup>1</sup>The international elite master's programme Scientific Computing is governed by the General Examination and Study Regulations for the Bachelor's and Master's Programmes at the University of Bayreuth (APSO). <sup>2</sup>Supplementary and deviating regulations for the master's programme Scientific Computing are listed in the present document.

## § 2

### Aim and structure of the degree programme

(1) <sup>1</sup>The interdisciplinary approach of this English-taught master's programme enables students to acquire and apply specialist knowledge in the field of numerical methods for solving differential and integral equations and in the field of data analysis, while at the same time broadening their horizons to other subject areas. <sup>2</sup>The master's examination at the end of the academic degree programme of the master's programme Scientific Computing determines whether the student has acquired the specialist knowledge specified in these statutes and has the following skills:

- Ability to abstract,
- Precision in analytical thinking,
- Truthfulness in the argumentation,
- The proven ability to structure complex interrelationships,
- A high level of perseverance in solving difficult problems,
- Broad insight into interdisciplinary contexts,
- Sound ability to realise mathematical methods for complex scientific and technical problems and to implement them professionally on modern computer systems,
- The ability to carry out advanced independent scientific work,
- The ability to work as a responsible mathematician in interdisciplinary teams of mathematicians, computer scientists, natural scientists, engineers and economists in industry and business.

<sup>3</sup>The master's programme Scientific Computing, including all examinations, is held in English.

<sup>4</sup>Upon the candidate's passing of the master's master, the University of Bayreuth, by way of the Faculty of Mathematics, Physics & Computer Science, awards the academic degree "Master of Science" (abbreviated as M.Sc.).

- (2) The regulations for the internship can be found in Annex 1.
- (3) <sup>1</sup>The master's programme can be completed as a full-time or part-time degree programme. <sup>2</sup>The degree programme can be started in the winter semester.

### § 3

#### Admission to the degree programme

- (1) Admission prerequisites for the master's programme are as follows.
  1. a university degree with an examination grade of at least 1.9 in a bachelor's programme in mathematics, computer science, natural sciences or engineering at the University of Bayreuth or an equivalent degree and
  2. proven knowledge of numerics totalling at least 16 credit points. Applicants who are unable to provide proof of this knowledge will be enrolled on condition that they submit the proof by the end of the second semester of study at the latest and
  3. proof of English language skills at level B2 or higher of the Common European Framework of Reference for Languages for applicants who neither earned their higher education entrance qualification nor their initial degree in English.
  4. proof of German language skills at level A1 or better of the Common European Framework of Reference for applicants who neither earned their higher education entrance qualification nor an initial degree in the German language; Applicants who do not fulfil this requirement will be enrolled on condition that they submit proof of the required language skills by the end of the second semester of study at the latest and
  5. the subject-specific aptitude assessment process for the degree programme in accordance with Annex 2.
- (2) <sup>1</sup>The qualifications may not differ substantially in terms of the earned competences from the qualifications referred to in para 1 number 1. <sup>2</sup>If there are significant differences that can be compensated for, applicants may be admitted subject to the condition that, in addition to the coursework to be completed in the master's programme and the coursework from para 1 no. 2, they also successfully complete coursework and examinations amounting to a maximum of 10 credit points from one of the bachelor's programmes listed in para. 1 no. 1 by the end of the second semester at the latest; otherwise the requirements for admission to the degree programme are deemed not to have been met. <sup>3</sup>The regulations of the (subject-specific) examination and study regulations of the bachelor's degree programmes at the University of Bayreuth mentioned in para 1 No. 1 apply as amended. <sup>4</sup>Art. 86 BayHIG applies to the

determination of the eligibility for recognition of domestic and foreign degrees.<sup>5</sup>Decisions in the cases of paragraphs 1 and 2 shall be made by the board of examiners.

- (3) <sup>1</sup>If the certificate of the relevant first degree is not yet available, a confirmation with individual grades must be submitted for all examinations and coursework completed up to the registration deadline. <sup>2</sup>These achievements must comprise a total of at least 150 credit points and correspond to at least the grade 1.9 according to the overall grade calculation. <sup>3</sup>Applicants who fulfil the requirements of sentence 2 are to be enrolled on the condition that they submit the certificate of the relevant degree certificate with a grade of 1,9 or better by the end of the second semester of study.

## § 4

### Additions and deviations

- (1) Deviations from or additions to § 2 para 1 APSO:
1. Notwithstanding sentences 3 and 4, the board of examiners consists of four members and three substitute representatives and is elected by the Faculty Council of the Faculty of Mathematics, Physics & Computer Science for a period of five years from among the university lecturers involved in the Elite Graduate Programme (Art. 19 para. 1 sentences 1 and 3 BayHIG).
  2. In addition to sentence 5, the board of examiners may decide to transfer the chairmanship to another member of the board of examiners if the chairperson retires during his or her term of office for reasons of age.
- (2) Additions to § 6 APSO:
1. The completion of further modules in the core elective areas (B1, B2, B3, C1) beyond the required scope is possible; paragraph 3 must be observed. There is no obligation to repeat further modules that have not been passed. If a student wishes to take further modules, he or she must specify that it is an additional module when registering for the corresponding module. The grades achieved in the other modules are not included in the final grade. The other modules are shown on the certificate unless the student requests otherwise.
  2. A doctorate within the framework of a fast-track procedure is possible. Admission to one of the doctoral programmes (e.g. Computational Mathematics in Science and Engineering (BayCompMath)) of the Bayreuth Graduate School of Mathematical and Natural Sciences (BayNAT) can take place in accordance with § 4 para 2 of the Doctoral Regulations of the Bayreuth Graduate School of Mathematical and Natural Sciences (BayNAT).

- (3) <sup>1</sup>Notwithstanding § 14 para 1 APSO, the final grade of the master's examination is calculated as the arithmetic mean of the module grades weighted with the credit points in accordance with Annex 1 and the grade of the master's thesis. <sup>2</sup>In this calculation, the grade shall only be given to one decimal place; the remaining digits are to be truncated (not rounded). <sup>3</sup>The best 40 credit points from core elective area B are used to calculate the final grade. <sup>4</sup>If the credit points for this module area are exceeded in core elective area B, the module with the lowest grade will only be included in the calculation of the final grade on a pro rata basis with the required credit points. <sup>5</sup>If modules from area B1 are completed, the module with the best grade totalling 8 credit points is included in the calculation of the final grade.
- (4) In addition to § 15 APSO, failed core elective modules do not have to be repeated.
- (5) Deviations from or additions to § 31 APSO:
1. In deviation from para 2 sentence 2, the topic of the master's thesis is assigned by a university lecturer involved in the Elite Graduate Programme via the chair of examiners, usually at the end of the second semester for full-time students and at the end of the fourth semester for part-time students. In deviation from para 2 sentence 4, the master's thesis is integrated into the degree programme in the third and fourth semesters for full-time students and after the fourth semester for part-time students.
  2. Notwithstanding paragraph 3, sentence 2, the period from the submission of the topic to the submission of the master's thesis is ten months for full-time students and twenty months for part-time students.
  3. In addition to paragraph 5, a typed, bound and paginated copy of the master's thesis must be submitted to the examiners on time at their request.
  4. In deviation from paragraph 8 sentences 1 and 2, the two reviewers shall hold a discussion in the event of a difference in assessment, in which they shall attempt to agree on a grade after weighing up technical aspects. If they cannot reach an agreement, they shall inform the chair of examiners. In such cases, the latter appoints a third reviewer who determines the final grade on the basis of the two available assessments.
  5. In addition to § 31, the master's thesis can also be completed as part of a fast-track doctorate in one of the doctoral programmes (e.g. Computational Mathematics in Science and Engineering (BayCompMath)) of the Bayreuth Graduate School of Mathematics and Natural Sciences (BayNAT).

## **§ 5**

### **Effective date**

- (1) <sup>1</sup>The present regulations go into effect on 26 September 2024. <sup>2</sup>It applies to students who are enrolled on the International Master's Elite Graduate Programme in Scientific Computing or who begin this programme in the winter semester 2024/2025.
- (2) When these regulations come into force, the Examination and Study Regulations for the elite master's programme Scientific Computing in the framework of the Elite Network of Bavaria at the University of Bayreuth dated 7 June 2019 (AB UBT 2019/016), which were last amended by the regulations dated 5 April 2024 (AB UBT 2024/020), shall cease to apply.

## **Annex 1: Modules, Credit Points, and Examinations**

The module areas, the respective modules, credit points (CP) and the corresponding examinations are listed below.

Modules that were already taken in the relevant bachelor's programme cannot be credited or taken in the master's programme.

Modules that can be assigned to several areas may only be submitted once. Double counting is not possible.

The master's programme in Scientific Computing has a modular structure and consists of the following sub-areas:

### **Module area A: Mathematical Foundation**

In this module area, the foundations in the field of applied mathematics and especially the numerics of partial differential equations are to be laid for the degree programme.

#### **Module A1: Numerical Methods for Partial Differential Equations**

If the contents of module A1 have already been acquired in the bachelor's programme, a module of at least 6 CP from the core elective modules B1 must be selected as an alternative to A1. In this case, a maximum of a further 8 ECTS points can be earned in module area B1.

#### **Module A2: Applied Functional Analysis**

If the contents of module A2 have already been acquired in the bachelor's programme, a module totalling at least 8 CP from the core elective modules B2 must be selected as an alternative to A2.

### **Module area B: Scientific Computing**

#### **Core elective modules B1: Advanced Topics in Numerical Mathematics**

Further modules totalling a maximum of 16 or 8 CP (cf. A1) must be completed from the modules listed in the table.

#### **Core elective modules B2: Modelling and Simulation**

Further modules totalling 8 - 16 CP must be completed from the modules listed in the table. Modules totalling at least 8 CP must come from the non-mathematical course offerings. On application, the board of examiners may admit modules from other areas of application, provided they fulfil the

above requirements. Furthermore, the board of examiners may also admit basic modules from the respective field of application if these are required for successful participation in a module.

### **Core elective modules B3: Complexity Reduction**

These modules address current methods that are based on the reduction of the information content of a problem and/or of data sets. Complexity is reduced to such an extent that the problem can be handled efficiently on parallel computers. Modules totalling 16 - 24 CP must be completed from the modules listed in the table.

### **Module area C: High-Performance Computing**

Another central component of the degree programme is the professional and efficient implementation of mathematical methods on high-performance computers.

#### **Core elective modules C1: High-Performance Computing**

Modules totalling 12 CP must be completed from the modules listed in the table.

#### **Module C2: Computer internship: Parallel Numerical Methods**

### **Module area D: Specialisation and Training**

#### **Module D1: Special Skills in Scientific Computing**

A specialisation module with 4 CP from the research areas listed in B1 or B3.

#### **Module D2: Industrial Internship**

In order to apply the methods they have learnt and to gain impetus for their own research, students complete an industrial internship of at least six weeks. The industrial internship must be organized by the students themselves, integrated into the degree programme and completed within the standard period of study. Students can obtain help with the organization of the industrial internship from the scientists involved in the Elite Graduate Programme. A report of at least 10 pages must be submitted within 4 weeks of completing the internship. The internship is assessed as "passed" or "failed". As an alternative to the industrial internship, students can successfully complete further modules totalling 8 CP from the compulsory elective modules B3.

#### **Module D3: Modelling and Status Seminar**

The module comprises the annual modelling week and the annual status seminar of the programme. Students are obligated to actively participate in two of these courses. During the modelling week,



which is held as a block seminar outside the university, students work in groups to mathematically formulate current scientific and technical problems and apply modern numerical methods to them. The results are presented and discussed at the end in 30-60 minute presentations. Furthermore, a paper of at least ten pages must be submitted no later than four weeks after the end of the modelling week. The oral presentation and elaboration are assessed in groups. In the status seminar, students give a short 15 – 30-minute presentation on their activities, study status and the results of their own research

### **Module area E: Soft Skills**

Seminars totalling 60 hours must be attended in order to develop non-subject-specific key qualifications (lecture and presentation techniques, computer use, literature research, dealing with foreign-language specialist literature, teamwork). This corresponds to three to four seminars. The module is assessed by submitting the relevant certificates of attendance and is graded as "passed" or "failed".

### **Module area F: Master's Thesis**

In the course of the first year, students make contact with one of the research groups involved in the Elite Graduate Programme. Taking into account their research interests, students select a research topic for a master's thesis with the support of a supervisor or several supervisors from among the university lecturers involved in the Elite Graduate Programme, which also offers potential for a later doctorate. The master's thesis should deal with interdisciplinary and application-related issues and be related to the focus of the Scientific Computing degree programme. The identification of topics in cooperation with an industrial company, other research institutions or authorities is expressly desired. In order to support the most efficient and successful processing of the topic, students are to be placed on research visits lasting several weeks with recognized experts in the respective fields.

Deviations from § 9 APSO:

- By way of derogation from para 2 sentence 4, in the event of different assessments of a written examination, the two examiners shall hold a discussion in which they shall endeavour to agree on a grade or on "pass" or "fail", taking into account technical aspects. If they cannot reach an agreement, they shall inform the chair of examiners. In such cases, the latter appoints a third examiner who determines the final grade on the basis of the two available assessments.
- Notwithstanding para 9 sentence 2, the duration of presentations is up to 60 minutes.

Abbreviations:

	Vertical lines between examination forms indicate possible alternatives.
+	plus signs define several examinations to be taken.
x/y	fractions indicate the weighting with which the respective examination performance is included in the module grade.
*	Examinations marked with "*" are not included in the calculation of the module grade or overall grade.
K	written examination
mP	oral examination
P	presentation
B	Contribution
sA	written elaboration

Module areas <b>Modules</b>	<b>Credit points</b>	<b>Type of examination</b>
<b>A: Mathematical Foundation</b>	<b>14</b>	
A1 Numerical Methods for Partial Differential Equations	6	<b>K   mP</b>
A2 Applied Functional Analysis	8	<b>K   mP</b>
<b>B: Modeling and Simulation</b>	<b>40</b>	
Core elective modules B1: Advanced Topics in Numerical Mathematics	0-16 or 0-8	
B1.1 Numerical Methods for General Types of PDEs	8	<b>K   mP</b>
B1.2 Discontinuous and Multiscale Methods for PDEs	8	Portfolioprüfung: <b>(K   mP) + (K   mP)</b>
B1.3 Constructive Approximation Methods	8	<b>K   mP</b>
B1.4 Mathematical Control Theory	8	<b>K   mP</b>
B1.5 Nonlinear Optimization	8	<b>K   mP</b>
B1.6 Optimization of Partial Differential Equations	8	<b>K   mP</b>
Core elective modules B2: Modeling and Simulation	8-16	
B2.1 Partial Differential Equations and Integral Equations	8	<b>K   mP</b>
B2.2 Modeling with Differential Equations	4	<b>K   mP</b>
B2.3 Mathematical Modeling for Climate and Environment	8	<b>K   mP</b>
B2.4 Ergodic Theory and Data Science	8	<b>K   mP</b>
B2.5 Pattern Recognition	4	<b>mP</b>
B2.6 Mechanics of Continua	8	<b>K   mP</b>
B2.7 Molecular Dynamics Simulations of Biophysical Systems	4	<b>K   mP</b>
B2.8 Bioinformatics: Molecular Modeling	4	<b>K   mP</b>
B2.9 Foundations of Bioinformatics	4	<b>K   mP</b>
B2.10 Quantum Chemistry: Methods and Algorithms	4	<b>K   mP</b>
B2.11 Advanced Strengths of Materials	4	<b>K</b>
B2.12 Computer Aided Engineering	4	Portfolioprüfung: <b>K +sA</b>
B2.13 Advanced Programming for Engineers	4	<b>mP</b>

Module areas <b>Modules</b>	<b>Credit points</b>	<b>Type of examination</b>
B2.14 Model Building and Simulation of Electrochemical Storage	4	<b>mP</b>
B2.15 Foundations of Data Management	4	<b>K   mP</b>
Core elective modules B3: Complexity Reduction	16-24	
B3.1 Efficient Treatment of Non-local Operators	8	<b>K   mP</b>
B3.2 Fast Methods for Differential and Integral Equations	8	<b>K   mP</b>
B3.3 Numerical Methods for Uncertainty Quantification	4	<b>K   mP</b>
B3.4 High-dimensional Approximation	4	<b>K   mP</b>
B3.5 Data Analytics	8	<b>K   mP</b>
B3.6 Complexity Reduction in Control	4	<b>K   mP</b>
B3.7 Meshfree Methods	4	<b>K   mP</b>
B3.8 Boundary Element Methods	4	<b>K   mP</b>
B3.9 Optimization Methods in Machine Learning	4	<b>K   mP</b>
<b>C: High-Performance Computing</b>	<b>14</b>	
Core elective modules C1: High-Performance Computing	12	
C1.1 Algorithms and Data Structures II	8	<b>K   mP</b>
C1.2 Algorithms and Data Structures III	4	<b>K   mP</b>
C1.3 Parallel and Distributed Systems I	4	<b>K</b>
C1.4 Parallel and Distributed Systems II	4	<b>K</b>
C1.5 High-Performance Computing	8	<b>K</b>
C1.6 Parallel Algorithms	4	<b>K   mP</b>
C1.7 Programming and Data Analysis in Python	4	<b>K   mP</b>
C2 Computer Internship: Parallel Numerical Methods	2	<b>mP</b>
<b>D: Specialisation and Training</b>	<b>20</b>	
D1 Special Skills in Scientific Computing	4	<b>K   mP</b>
D2 Industrial Internship or alternative modules totalling 8 CP from the core elective modules B3	8	<b>B   K   mP *</b>

Module areas <b>Modules</b>	<b>Credit points</b>	<b>Type of examination</b>
D3 Modeling and Status Seminar	8	Portfolio assessment: <b>P</b> ¼ + <b>P</b> ¼ + <b>sA</b> ¼ + <b>sA</b> ¼ + <b>P*</b> + <b>P*</b>
<b>E: Soft Skills</b>	<b>2</b>	Certificates of attendance* for seminars totalling 60 hours (this corresponds to 3 - 4 seminars)
<b>F: Master's Thesis</b>	<b>30</b>	<b>Master's thesis</b>
<b>Total</b>	<b>120</b>	

## **Annex 2: Aptitude assessment process**

Legal basis: Art. 90 para 1 sentence 2 BayHSchG

### **1. Purpose of aptitude assessment process**

<sup>1</sup>The aim of the aptitude assessment process is to open up access to the Elite Graduate Programme in Scientific Computing to qualified and particularly high-achieving students. <sup>2</sup>The aptitude assessment process plays a special role in interdisciplinary, internationally oriented elite study programmes because it is aimed at applicants who come from different subject cultures, grade cultures and countries of origin. <sup>3</sup>The supplementary selection process will assess the applicant's suitability.

### **2. Board responsible for the aptitude assessment process**

<sup>1</sup>A committee is responsible for the preparation and implementation of the aptitude assessment process. <sup>2</sup>The committee consists of the examination board in accordance with § 2 APSO in connection with § 4 para 1 of the present regulations and up to three members from among the university lecturers (Art. 19 para 1 sentences 1 and 3 BayHIG) and other members of the full-time academic staff with examination authorization who are involved in this degree programme. <sup>3</sup>The representatives are appointed by the Faculty Council of the Faculty of Mathematics, Physics & Computer Science before each aptitude assessment process.

### **3. Process for determining aptitude**

3.1 <sup>1</sup> The aptitude assessment process is carried out twice a year, in the summer and winter semesters. <sup>2</sup>The application for admission to the aptitude assessment process must be submitted online to the University of Bayreuth. <sup>3</sup>The online application for admission is made available on the university's website. <sup>4</sup>The online application for admission must be received electronically by the University of Bayreuth by 15 May of the respective year for admission to the following winter semester or by 15 November of the previous year for admission to the following summer semester (cut-off deadlines). <sup>5</sup>Documents according to no. 3.2.2 and 3.2.5, as well as other relevant documents for the examination of the relevant initial degree can be submitted by 15 June for the winter semester and by 15 December for the summer semester.

3.2 The following are to be enclosed with the completed application as described in number 3.1 sentence 2:

3.2.1 A cover letter in English briefly explaining the reasons for the application.

- 3.2.2 <sup>1</sup>The certificate of the relevant initial degree as well as a confirmation with individual grades of the examinations and coursework completed during the course of study. <sup>2</sup>If the bachelor's certificate is not yet available, confirmation containing the individual grades for all examinations and courses up registration deadline must be submitted. <sup>3</sup>These achievements must comprise a total of at least 150 credit points and correspond to at least the average grade 1.9 according to the overall grade calculation. <sup>4</sup>The certificate of the relevant initial degree must be submitted by the end of the second semester.
- 3.2.3 If applicable, a list of the modules of the relevant initial degree programme for which no transcripts of records can yet be submitted.
- 3.2.4 A curriculum vitae as supplementary information.
- 3.2.5 If available, evidence of special qualifications (e.g. vocational training, awards, internships, scholarships, stays abroad).
- 3.2.6 If applicable, a request for reasonable accommodations in accordance with § 12 APSO.

#### **4. Admission to the aptitude assessment process**

- 4.1 Admission to the assessment process requires that the documents listed in number 3.2 be submitted on time.
- 4.2 The aptitude assessment process (number 5) is to be administered to those applicants who fulfil the requirements.
- 4.3 Applicants who are not admitted are to be sent a notice of denial with a rationale and information concerning their right to appeal; number 6.2 applies mutatis mutandis.

#### **5. Overview of the aptitude assessment process**

- 5.1 <sup>1</sup>On the basis of the application documents submitted, the board examines whether the applicant is suitable for the master's programme Scientific Computing with respect to his or her proven qualifications and the specific talents and abilities described. <sup>2</sup>The assessment is made by two committee members according to the following criteria:
- 5.1.1 <sup>1</sup>The additional qualifications resulting from the documents according to 3.2.2 and 3.2.5 are assessed with a maximum of 4.0 points. <sup>2</sup>The assessment criteria are the extent to which the applicant's previous achievements demonstrate distinct skills and competences in the field of Scientific Computing and the extent to which there

is potential for interdisciplinary and international work. <sup>3</sup>These qualifications can be demonstrated in accordance with letters a and b below:

- a) Proof of international competences such as stays abroad, language courses, attendance of foreign language courses
- b) Proof of interdisciplinary competences such as the completion of interdisciplinary courses, internships, vocational training.

<sup>4</sup>The awarding of points is described in more detail in no. 9.

5.1.2 <sup>1</sup>The subject-specific study and examination achievements of the bachelor's programme or an equivalent degree programme in accordance with § 3 are assessed with a maximum of 4.0 points. <sup>2</sup>Specific conversion factors may be applied for foreign applicants. <sup>3</sup>The following shall be taken into account

- performance in mathematics with applied mathematics and numerics (max. 2 points)
- knowledge of computer science and programming (max. 1 point)
- knowledge of an application subject related to the application areas represented in the degree programme (max. 1 point)

5.1.3 <sup>1</sup>The number of points awarded for the assessment is the sum of the individual assessments (numbers 5.1.1 and 5.1.2). <sup>2</sup>The number of points for the applicant is determined by taking the arithmetic mean of the individual assessments of the committee members. <sup>3</sup>The score is to be rounded to one decimal place behind the comma.

5.2 Applicants who have achieved 5.0 or more points will receive confirmation that they have passed the aptitude assessment process.

5.3 Applicants who have achieved less than 3.0 points will receive a letter of rejection in accordance with no. 6.2.

5.4 <sup>1</sup>The remaining applicants will be invited to an aptitude interview. <sup>2</sup>The date for this interview will be announced at least two weeks in advance. <sup>3</sup>The applicant is to comply with the date and time of the interview. <sup>4</sup>Anyone who fails to appear on the date and time announced will be denied admission. <sup>5</sup>If a reason beyond the applicant's control prevents him or her from participating in the interview, a new appointment is to be scheduled no later than two weeks prior to the start of lectures upon justified request.



- 5.5 <sup>1</sup>The aptitude interview in English must be conducted individually for each applicant. <sup>2</sup>The interview is to last between 15 and 30 minutes for each applicant and should demonstrate whether it is to be expected that the aim of the programme of study can be achieved given the applicant's skills and abilities. <sup>3</sup>The interview should corroborate the impression that he or she is suited for the programme of study. <sup>4</sup>In a short talk, the applicant presents his or her bachelor's thesis or a corresponding project. <sup>5</sup>The applicant should demonstrate his/her professional qualification and ability to communicate in an interdisciplinary manner in the talk and the subsequent discussion. <sup>6</sup>With the consent of the applicant, a student representative may be admitted as a member of the audience. <sup>7</sup>The aptitude interview is conducted by two members of the committee. <sup>8</sup>Each member records the result of the aptitude interview on a scale of 0 to 4.0 points, with 0 being the worst and 4.0 the best score that can be achieved. <sup>9</sup>The talk and discussion should be taken into account in the assessment. <sup>10</sup>The number of points for the applicant is determined by taking the arithmetic mean of the individual assessments of the committee members. <sup>11</sup>The score is to be rounded to one decimal place behind the comma.
- 5.6 <sup>1</sup>In the overall assessment of the aptitude assessment procedure, the result of the aptitude interview and the previous academic performance are added together in accordance with no. 5.1.2. <sup>2</sup>Applicants who received 5.0 points or more in the second stage of the aptitude assessment process shall be sent a confirmation of having passed the aptitude assessment process. <sup>3</sup>The remaining applicants who are not admitted are to be sent a notice of denial with a rationale and information concerning their right to appeal; number 6.2 applies mutatis mutandis.
- 5.7 <sup>1</sup>A written record shall be made of the interview, indicating the date, duration, location, name of committee members involved, the name of the applicant, the assessment of the board members, and the overall outcome. <sup>2</sup>The record must show the topics of the interview with the applicant and the rationale for the assessment. <sup>3</sup>The reasons and topics may be listed in note form. <sup>4</sup>The record sheet is to be signed by the committee members who were present.

## **6. Determining and announcing results**

- 6.1 The course of the aptitude assessment process must be documented; in particular, the decisions of the board in accordance with the present regulations and the overall outcome must be evident.
- 6.2 <sup>1</sup>The outcome of the aptitude assessment process is to be sent to the applicant in writing. <sup>2</sup>A notice of denial must be accompanied by a rationale and information on the applicant's right to appeal.

6.3 Admissions within the framework of the aptitude assessment procedure for the master's programme in Scientific Computing apply to all subsequent applications for this degree programme, provided that the content and objective of the degree programme have not changed so significantly that the aptitude for this degree programme can no longer be proven on the basis of the aptitude assessment process carried out at an earlier point in time.

## 7. Repeating the process

Applicants who have not provided proof of aptitude for the master's programme in Scientific Computing can re-register once for the aptitude assessment process.

## 8. Aptitude assessment process for higher semesters

For applicants who wish to enter advanced semesters (university transfer, career changers), nos. 3 to 7 apply accordingly.

## 9. Assessment key

The following assessment shall be authoritative for the award of points for suitability on the basis of the documents referred to in point 5.1.1:

POINTS	ASSESSMENT
4.0 – 3.0 points	very well-suited for the programme of study
2.9 – 2.0 points	above-average suitability for the programme of study
1.9 – 1.0 points	average suitability for the programme of study
0.9 – 0.0 points	below-average suitability for the programme of study