Please note that this document is a non-binding convenience translation. Only the German version of the document entitled "Prüfungsordnung der Universität Heidelberg für den Bachelor-Studiengang Mathematik", dated 25 June 2015, has legal validity.

HEIDELBERG UNIVERSITY EXAMINATION RULES AND REGULATIONS FOR THE BACHELOR'S DEGREE PROGRAMME IN MATHEMATICS

Date: 25 June 2015

On the basis of § 32 of the Act on Higher Education of the Land of Baden-Württemberg (LHG), modified by the third Act on Amendments to University Regulations (Third Act on University Regulation Amendments / 3rd HRÄG) of 01 April 2014 (GBI. of 08 April 2014, p. 99), the senate of Heidelberg University determined these examination rules and regulations.

Approved by the President on 25 June 2015.

Preamble

All titles in this document, be they official, job, status or functions, are used in masculine form, however they refer to men and women equally and may also be used in the corresponding feminine form.

I. General information

II. Bachelor's examination

Section I: General information

§ 1 Purpose of the academic programme and examination

(1) The Bachelor degree programme in Mathematics is organised by the Faculty of Mathematics and Computer Science. It conveys a broad overview of the subject as well as the academic basis and methods required for entering a profession in research, development and administration in the field of mathematics. In particular, it enables students to enroll in the consecutive Master degree programme in Mathematics provided the Bachelor programme is chosen as a major (100%). In addition, the programme provides students with the opportunity to get qualifications in other natural sciences as well as areas not associated with natural sciences.

(2) The purpose of the Bachelor's examination is to assess whether students have an overview of the interconnections between the individual disciplines, are able to apply academic methods and knowledge, and have acquired the methodical and practical skills required to enter into a profession.

(3) Admission requirements to the academic programme are subject to separate admission regulations.

§ 2 Bachelor's degree

Heidelberg University, represented by the Faculty of Mathematics and Computer Science, awards the academic degree of "Bachelor of Science" (abbreviated "B.Sc.") to those who have passed the Bachelor’s examination.

§ 3 Standard period of study, programme structure, requirements

(1) The standard period of study for the Bachelor’s degree programme is six semesters, including examinations. Successful completion of the bachelor’s degree programme requires a total of 180 credits (CPs) in compulsory, compulsory elective and elective courses.

(2) The Bachelor’s programme in Mathematics is a modular programme and contains

- a major subject (100 %) with 127 CPs allocated for subject related studies, 21 CPs for an area of application, and 20 CPs for interdisciplinary skills. The Bachelor's thesis is allocated 12 credits. A total of 24 CPs are obtained in the area of application, 3 CPs of which are credited to interdisciplinary skills.

Or

- a major subject (50 %) combined with a second major subject (also 50 %). In this case, each subject is allocated 74 CPs with 20 CPs for interdisciplinary skills and 12 CPs for the Bachelor's thesis. The main major is the subject in which the student writes his/her Bachelor's thesis.

If chosen as one of two majors, the Bachelor's thesis can be completed in Mathematics only if the second major is chosen from the catalogue of subjects listed in Attachment 8. Exceptions may be approved by the examinations board if recommended by the supervisor. Conferment of the academic degree (Bachelor of Arts, Bachelor of Science) conforms with the main major.

The Bachelor's degree programme at 50 % does not entitle the student to enroll in the consecutive Master's degree programme in Mathematics. More detailed information can be found in the Master's degree programme admission regulations.

(3) Generally, all subjects from Bachelor's degree programmes at 50 % may be freely combined, provided the respective courses are offered. In accordance with the regulations, the Bachelor's degree is, in this case, awarded to students who have passed the prescribed examinations in both majors as well as the interdisciplinary skills, and have completed the Bachelor's thesis. If only one subject is completed, the university may not award the Bachelor's degree. In accordance with §§ 19 and 20, the faculty of the main major is responsible for issuing the diploma and the degree certificate.

(4) The required compulsory, compulsory elective and elective modules and the associated courses for a course of studies at 100 % are listed in Attachment 2. The sequence of the modules is to be based on the model syllabus defined in Attachment 1.

Furthermore, students can achieve subject-related and interdisciplinary qualifications in the area of application (Attachment 4) as well as in the electives. There are 21 available credits in the area of application. These are to be obtained in the electives designated in Attachment 4. A non-designated subject may also be approved upon application to the examinations board.

(5) The required compulsory, compulsory elective and elective modules and the associated courses for a course of studies at 50 % are listed in Attachment **6**. The sequence of the modules is to be based on the model syllabus defined in Attachment **5**.

(6) An orientation examination must be taken no later than at the end of the second academic semester. The examination is taken during the course of study and consists, in the case of a major at 100%, of successful completion of the compulsory modules Analysis I and Linear Algebra I; in the case of a major at 50%, it consists of successful completion of the module Linear Algebra I. Further information can be found in the module handbook.

(7) Each orientation examination's module examination may be retaken once if it is not passed or is considered not to have been passed. If the orientation examination has not been passed by the end of the third academic semester, the student is not entitled to take the final examinations, unless the student is not at fault for exceeding the deadline.

(8) The orientation examination is a component of the Bachelor's examination.

(9) Generally, the language of instruction and examinations is German. Certain courses may also be taught and related examination components taken in English. An additional language can be chosen by agreement with all parties involved.

§ 4 Modules, credits and list of grades

(1) A module is a teaching unit, self-contained in terms of both time and content and comprised of various lectures and courses. It not only comprises the lectures and courses attended, but also the components necessary for a passing grade in the module. The modules are described in the module handbook.

(2) The Bachelor's thesis is considered an individual module.

(3) In the academic programme at 100% or at 50%, the interdisciplinary skills are partially integrated in subject related studies as compulsory and compulsory elective components and partially organised as a component of the electives (see Attachments 3 and/or 7).

(4) A distinction is made between compulsory modules, which all students have to take, compulsory elective modules that students can select from a limited range, and electives, which can be freely selected from the subject's range of modules. Further information can be found in the module handbook.

(5) All components within a module must be graded as "sufficient" (4.0) or higher in order to pass the module.

(6) Credits are awarded for successfully completed modules, including their individual components. One credit corresponds to a workload of approximately 30 hours.

(7) Participation in a module may require previous successful participation in

certain lectures or courses.

(8) A transcript of records will be issued at the end of each semester, listing all module examinations students have passed, including the corresponding credits and grades.

§ 5 Examinations board

(1) The examinations board organises examinations and tasks defined in these examination rules and regulations. It consists of three lecturers or professors, of which at least one must be associated with pure or applied mathematics, a representative of the research assistants and a student with advisory authority.

(2) The chairperson of the examinations board, the deputy chairperson as well as other members and their deputies are appointed by the faculty council. The chairperson and the deputy must be professors. The examinations board student member and his/her deputy is appointed by the faculty council based on a proposal from the departmental student committee.

(3) The members are appointed for two years; the student member is appointed for one year. Members may be re-elected.

(4) The examinations board ensures that the examination rules and regulations are upheld. The board reports to the faculty regarding changes to examinations, study periods and grading on a regular basis.

(5) The chairperson manages the business of the examinations board, prepares and chairs meetings and, in the event of a tie vote, has the deciding vote. The examinations board can confer further responsibility to its chairperson. Such a decision may be revoked at any time.

(6) Examinations board members have the right to attend examinations.

(7) Members of the examinations board and their deputies are subject to official secrecy. Those who are not civil servants are sworn to secrecy by the chairperson.

§ 6 Examiners and observers

(1) Following consultation with the examinations board, the chairperson appoints the examiners for all examination components. Examiners must be lecturers in the Bachelor's degree programme in Mathematics.

(2) In general, examination components which are not completed during the course of study may only be examined by professors, associate professors, lecturers or research associates who have been granted the right to examine by the faculty.

(3) Examinations held during the course of study are usually conducted by the

teacher of the respective course.

(4) Observers must have taken the Bachelor's examination or at least an equivalent final examination.

(5) For examiners and observers, § 5 Section 7 (official secrecy) shall apply accordingly.

§ 7 Recognition of course credits, examination results and academic degrees

(1) Examination prerequisites and results, as well as academic degrees obtained through degree programmes at German universities or universities of cooperative education (state or state-recognised), or at foreign universities (state or state-recognised), will be recognised as long as there is no significant difference in terms of the skills acquired, courses taken and degree obtained through the programme. This recognition is required in order to continue an academic programme, take examinations, enroll in a further academic programme or be admitted to a doctoral programme. The validity of § 15, Sections 3 and 4 LBG (State Public Service Law) remains unaffected.

(2) Preliminary and intermediate examinations taken at other German universities in the same degree programme or in a similar degree programme will be recognised. Courses completed at recognised distance-learning institutions will be considered equivalent to those in a corresponding traditional degree programme with regard to determining the duration of study.

(3) It is the applicant's responsibility to provide all information necessary for recognition of achievements. It is the responsibility of the office which carries out the recognition procedure to prove that an application does not fulfil the requirements.

(4) If agreements exist between the Federal Republic of Germany and other states concerning equivalent university degree programmes (Equivalency Agreements) that favour students from other states by way of derogation from Section 1 and § 29, Section 2, Sentence 5 of the LHG (Act on Higher Education of the Land of Baden-Württemberg), the rules and regulations in the Equivalency Agreement take precedence.

(5) Examination results are to be graded on the basis of a credit point system that allows for recognition of achievements in equivalent or similar degree programmes; this also applies to universities of cooperative education, provided there is equivalence.

(6) Knowledge and skills gained outside of a university degree programme may be recognised for such a programme, as long as

1. the requirements for university admission are fulfilled at the time of recognition,
2. the knowledge and skills to be recognised for the university degree programme are equivalent in both content and level to the course

credits and examinations which they should replace, and

3. the criteria for recognition have been verified in the course of accreditation.

Knowledge and skills gained outside the university degree programme may not replace more than 24 credits in a degree programme at 100 %, or 16 credits in a degree programme at 25 %. Bachelor's theses are not recognised. If documentation of individual examinations that would provide evidence of specific knowledge and skills cannot be provided, the examinations board may request the completion of a placement test.

(7) In the case of refresher courses, credits may be awarded for courses and examinations. When recognising credits from refresher courses for a university degree programme, Sections 2 and 5 as well as Section 6 Sentence 1 No. 1 apply accordingly. When recognising knowledge and skills gained outside a university degree programme for refresher courses, Section 6 applies accordingly.

§ 8 Unexcused absences, withdrawal, deception and breaches of regulations

(1) An examination is considered "failed" (5.0) if candidates fail to appear to the examination without a valid reason for their absence, or if they withdraw after the examination has started. The same applies if the candidate fails to complete a written examination within the allocated time, unless the candidate is not at fault for exceeding the deadline.

(2) Reasons for withdrawal or absence must be stated credibly and immediately to the examinations board in writing. If the candidate, or a child for whom the candidate is generally solely responsible, is ill, a medical certificate must be provided; in case of doubt, a medical certificate from a doctor, designated by the university, may be requested. If the reasons stated are accepted, a new examination appointment will be scheduled. In this case, examination results that are already available will be taken into account.

(3) When deciding whether the candidate is responsible for exceeding a deadline for registration or taking an examination, the examinations board must respect the provisions stated in the Maternity Protection Act and the legal regulations concerning parental leave, and allow candidates to make appropriate use of these provisions. The same applies for students with disabilities or chronic diseases, or for students with dependent relatives, in accordance with § 7 paragraph 3 of the Pflegezeitgesetz (Home Care Leave Act).

(4) If the candidate tries to influence the examination results through deception or by using unauthorised aids, the examination component in question will be graded as "failed" (5.0). If candidates disrupt the proper course of the examination, they may be excluded from further participation in the examination by the examiner or examination supervisor. In this case, the examination result will be graded as "failed" (5.0). In extreme cases, the examinations board may exclude the candidate from all further examinations.

(5) The candidate may request a review of the decision by the examinations board in accordance with Section 4, Sentences 1 and 2 within a period of fourteen days. The candidate must be informed of negative decisions immediately and in writing, stating the reasons and providing information on the legal appeals procedure.

§ 9 Types of examination components

(1) The examination components are:
1. oral examination components completed during the course of study
2. written examination components completed during the course of study (electronically where applicable)
3. the Bachelor's thesis

The admission requirements for examinations completed during the course of study as well as the type of examination are defined in the module handbook.

(2) If candidates provide a medical certificate which credibly proves that they are not able to take examination components completely or partially in their intended form, due to long-term or permanent health problems, the examinations board may allow them to take an equivalent examination. The same applies for other course requirements.

§ 10 Oral examination components completed during the course of study

(1) In oral examination components, candidates are required to prove that they fully understand the material and are able to recognise problems relating to their subject and find solutions, using subject-specific methods with limited time and resources.

(2) An oral examination may last between 15 and 60 minutes. Further information can be found in the module handbook.

(3) Students who wish to take a subject examination at a later examination date should be permitted to listen in on the same examination, if room is available. The audience may not attend assessment or announcement of the examination results. Listeners can be prohibited from attending upon the candidate's request or for other valid reasons.

§ 11 Written examination components completed during the course of study

(1) In written examination components, candidates are required to prove that they fully understand the material and are able to recognise problems relating to their subject and find solutions, using subject-specific methods with limited time and resources.

(2) A written examination lasts between 45 and 120 minutes. Further information can be found in the module handbook. Multiple choice questions are permitted. No more than one third of all examination questions may be multiple choice questions.

(3) In general, multiple choice questions are set by the lecturer responsible for a lecture or course, as determined by the examinations board. The questions must be tailored to examine the knowledge conveyed in the lecture or course and provide reliable results. Before assessing the examination results, the person responsible as determined in Sentence 1 must ensure that the questions for the examination comply with Section 3 Sentence 2. If the examiner finds that individual examination questions are incorrect, these questions may not be considered when assessing the examination results. In such a case, the total number of questions is reduced and the assessment based on the reduced number of questions. Reducing the number of examination questions may not have negative consequences for the candidates.

An examination that includes a multiple choice section is considered to be passed, if at least 50 % of the multiple choice questions were answered correctly, or if the number of the candidate's correctly answered questions is not lower than 22 % of the all candidates' average examination results. (non-referenced grading).
The multiple choice examination is to be assessed as follows. In case of non-referenced grading, the scale for assessment is moved lineally by the difference between absolute and relative threshold for passing.

%	corresponds to grade
< 50	5.0
≥ 50 – 55	4.0
> 55 – 60	3.7
> 60 – 65	3.3
> 65 – 70	3.0
> 70 – 75	2.7
> 75 – 80	2.3
> 80 – 85	2.0
> 85 – 90	1.7
> 90 – 95	1.3
> 95 – 100	1.0

An examination that includes a multiple choice section is considered to be "passed" if the weighted average of the individual grades is 4.0 or higher. In this case, the overall grade is calculated as the weighted average of the individual grades; for the benefit of the student, the grade is rounded to the next better of the following grades: 1.0, 1.3, 1.7, 2.0, 2.3, 2.7, 3.0, 3.3, 3.7, 4.0.

(4) If a written examination component is taken as a term paper, candidates must assure that they are the authors of their work and have used no sources or aids other than those indicated.

(5) The evaluation period for written examinations completed during the course of

study should not exceed two weeks.

§ 12 Assessment of examination components

(1) Grades for the individual examination components are determined by the respective examiners. The following grades must be applied for assessment of examinations:

1 = very good	=	an outstanding performance;
2 = good	=	performance which is substantially above average requirements;
3 = satisfactory	=	performance which fulfils average requirements;
4 = sufficient	=	a performance which, despite deficiencies, still fulfils the requirements;
5 = failed	=	a performance which does not fulfil the requirements due to considerable deficiencies.

For more detailed assessment of examination results, interim grades may be applied by increasing or decreasing the individual grades by 0.3; the grades 0.7, 4.3, 4.7 and 5.3 may not be applied.

(2) Students receive a passing grade in an examination component if it has been graded as "sufficient" (4.0) or higher.

(3) When calculating final module grades and the overall examination grade (§17, Section 3), only the first decimal after the point is taken into consideration. The other decimals are dropped without rounding.

(4) If grades are awarded in accordance with the European Credit Transfer System ECTS, the international assessment standard specified in Attachment 9 is applied.

Section II: Bachelor’s examination

§ 13 Bachelor's examination admission requirements and procedure

(1) Admission to the individual examination components for the Bachelor's examination, defined in § 14 Section 1, is only possible for candidates who:

1. are enrolled in the Bachelor’s degree programme in Mathematics at Heidelberg University,
2. have not forfeited their entitlement to take the examination.

(2) The following certificates must be provided for admission to the Bachelor’s thesis:

1. passed orientation examination,
2. evidence of examination prerequisites that amount to at least 120 credits (for subjects at 100 %) or**.** 58 credits in Mathematics and 30 credits in the second major (for subjects at 50 %).

(3) The application for presentation of the Bachelor's degree must be made in writing and addressed to the chairperson of the examinations board. The application must include:

1a) Evidence of examination prerequisites totalling 180 credits according to the catalogue of compulsory, compulsory elective and elective module in Mathematics including the application area (Attachments 1 to 4) as well as of the successfully completed Bachelor's thesis or

1b) evidence of examination prerequisites totalling 180 credits if Mathematics is the main major at 50 %. These include subject related studies in both subjects, interdisciplinary skills and the Bachelor's thesis.

2. A declaration stating whether the candidate has previously failed a Bachelor's examination, an intermediate Diploma or a Diploma examination in either Mathematics or in degree programmes with comparable content, or has previously failed the intermediate examination or state examination in the teaching degree programme Mathematics, or is currently participating in an examination procedure in one of the aforementioned degree programmes.
3. A declaration stating that the candidate has not lost his/her entitlement to take the final examinations in the Bachelor's degree programme in Mathematics.

(4) The chairperson of the examinations board makes the decision on the application. Rejections must be presented in writing, stating the reasons and providing information on the appeals procedure.

(5) If candidates are unable to provide such evidence, the examinations board may accept other documents of proof.

(6) The application will be rejected, if

1. conditions are not fulfilled in accordance with Section 1, or
2. documents are not complete, or
3. the candidate has failed the Bachelor's examination or the intermediate Diploma or Diploma examination in Mathematics, or in other degree programmes with comparable content at the final attempt, or
4. the candidate has lost his/her entitlement to take examinations in a degree programme according to No. 3 due to other reasons, or
5. the candidate is currently participating in an examination procedure in the Bachelor's degree programme in Mathematics or the Diploma degree programme in Mathematics, or in a degree programme with comparable content.

§ 14 Scope, nature and organisation of the Bachelor's examination

(1) The Bachelor's examination in Mathematics consists of:

1. examination components in the modules completed during the course of study, in accordance with Attachments 1 to 4 (for subjects at 100 %) or Attachments 3 and 5 to 7 (for subjects at 50 %),
2. the Bachelor's thesis (for subjects at 100 %); the provision stated om § 3 Section 2 applies in the case of subjects at 50 %.

(2) Examinations, as referred to in Section 1, No. 1, are taken orally or in writing as an integrated part of the lecture or course. Nature and duration of examination components in accordance with Section 1 No. 1 are defined in the module handbook.

(3) Module examinations may consist of several sub-module examinations.

§ 15 Bachelor's thesis

(1) The purpose of the Bachelor's thesis is for candidates to prove that they are able to work independently, within a given period of time and using mathematical methods, on a problem from the field of mathematics or one of its application areas.

(2) The Bachelor's thesis may be assigned and supervised by any authorised examiner
in accordance with § 6 Sections 1 and 2.

(3) The candidate must start working on the Bachelor's thesis no later than one week after successful completion of the final examination prerequisite completed during the course of study or after announcement of the respective result. Otherwise he/she must make an application for allocation of a Bachelor's thesis topic to the chairperson of the examinations board. § 3 Section 2 on allocation of the Bachelor's thesis must be respected.

(4) If the deadline (see Section 3) is not met, the final thesis will be graded as "failed" (5.0), unless the candidate is not at fault for exceeding the deadline.

(5) The topic of the Bachelor's thesis will be determined by the thesis supervisor in consultation with the candidate. If an application for assignment of a topic is submitted, the chairperson of the examinations board will ensure that the candidate receives a topic for the Bachelor's thesis in due time. The candidate is allowed to propose own topics. However, this does not constitute a legal entitlement to a certain topic. The thesis topic will be assigned by the chairperson of the examinations board; the date of assignment must be recorded.

(6) The deadline for submission of the thesis is three months after topic assignment. In exceptional cases, the examinations board may extend this deadline by up to one month. If the deadline is exceeded, the Bachelor's thesis

will be graded as "failed" (5.0), unless the candidate is not responsible for exceeding the deadline.

(7) The topic, task and scope of the Bachelor's thesis must be limited in such a way that the candidate is able to complete the thesis within the given period.

(8) The thesis must contain German and English summaries. The Bachelor's thesis may be written in German or English

§ 16 Submission and assessment of the Bachelor's thesis

(1) Three copies of the Bachelor's thesis must be submitted to the examinations board before expiry of the deadline; the submission date must be recorded.

(2) When submitting the Bachelor's thesis, the candidate must assure in writing that he/she is the author of the work and has used no sources or aids other than those indicated.

(3) The Bachelor's thesis is evaluated by the thesis supervisor. If the supervisor cannot evaluate the thesis due to serious reasons, he/she must inform the examinations board immediately. The examinations board, in turn, will arrange for another examiner to assess the thesis. In this case, the original supervisor normally recommends a replacement. The supervisor or his/her replacement generally forwards the evaluation and the grade within a period of three weeks.

(4) If the thesis receives a "failing" grade (5.0), or the candidate submits a justified claim to the examinations boards within 4 weeks after the initial evaluation, the examinations board will appoint a second examiner to evaluate the thesis. In this case, the examinations board will determine the final grade. The final grade is based on the arithmetic mean of both evaluations. If one of the grades is "sufficient" (4.0) or higher and the other is a "fail" (5.0), the examinations board can appoint a third examiner.

(5) If the Bachelor's thesis is graded as "failed" (5.0), it may be retaken only once with a new topic; retaking the thesis with the previous topic is not possible. An application for a retake of the thesis must be submitted within the first two months after announcement of the initial thesis assessment. After that point, the deadline in accordance with §15 Section 6 shall once again apply.

§ 17 Passing the examination and overall grade

(1) The Bachelor's examination is passed if all necessary modules, according to Attachments 1 to 4 (for subjects at 100 %) or Attachments 5 to 7 (for subjects at 50%) have been successfully completed and each graded examination prerequisite completed during the course of study, as well as the Bachelor's thesis (for subjects at 100 % or in the main major) received at least a "sufficient" (4.0) grade.

(2) § 12 applies for assessment of all examination components and the overall

grade.

(3) The overall grade for the Bachelor's examination in subjects at 100% or the grade in Mathematics for subjects at 50% is calculated as follows. First, the interim grades are determined for the following blocks:

1. Analysis: the higher grade (either Analysis I or II),
2. Linear Algebra: the higher grade (either Linear Algebra I or II).

Then, these interim grades, as well as the grades of the remaining, individually graded module in Mathematics as defined in Attachments 2 or 6, and, in the case of subjects at 100%, in the application area as defined in Attachment 4 are weighted according to their credits (blocks 1 and 2 are allocated 16 credits respectively). The Bachelor's thesis grade is included with a factor of 1.5 in the overall grade. Furthermore, the grades of one or two modules, in the case of subjects at 50%, can be excluded from mean value formation. These modules, excluding the Bachelor's thesis, may be freely selected by the student.

In the program at 50% with Mathematics as the main major, the overall grade is calculated as the sum of one grade for Mathematics, in accordance with Section 3 but without inclusion of the Bachelor's thesis and the grade for the second subject according to the respective examination rules and regulations, before rounding and multiplied by 74/166 as well as the grade of the Bachelor's thesis multiplied by 18/166.

The overall grade is determined as follows:

average of <= 1.5	very good
average of >1.5 and <= 2.5	good
average of >2.5 and <= 3.5	satisfactory
average of >3.5 and <= 4.0	sufficient

By resolution of the examinations board, the faculty may confer the academic degree "with distinction" if the overall grade is "very good" and the candidate exhibited an extraordinary performance.

§ 18 Retaking an examination component integrated in the course of study, deadlines

(1) If examination components are not passed or considered not passed, they may be retaken once.

(2) Retaking an examination that has been graded as passed is not permitted.

(3) If an examination component is failed, it must be retaken at the next examination date; compulsory modules must be retaken within max. one year. If candidates miss this deadline, they may not retake the examination component, unless they are not responsible for exceeding the deadline.

(4) If a compulsory module examination is failed on the final attempt, the candidate will be dismissed from the academic programme. Failing compulsory elective modules and elective modules may be offset by the successful completion of a

different module from the same area.

§ 19 Bachelor's diploma

(1) After the Bachelor's examination is passed, a diploma will be issued within four weeks after the final examination. It lists all individual modules, including the Bachelor's thesis, and the respective grades and associated credits, as well as the overall grade. The diploma is dated with the day of the last examination component. It must be signed by the chairperson of the examinations board. All components are listed if subjects are studied at 50%.

(2) A Diploma Supplement in German and English is included, containing additional information about the course content and period of studies. The content complies with the European Diploma Supplement Model.

§ 20 Bachelor's certificate

(1) A Bachelor's certificate is issued with the diploma, bearing the same date. It certifies the conferment of the academic degree.

(2) The Bachelor's certificate is signed by the Dean and the chairperson of the examinations board. It bears the faculty seal.

(3) If the candidate fails the Bachelor's examination, a certificate will be issued on request and on presentation of relevant proof, listing passed examination components and the corresponding grades as well as the missing examination components. It is signed by the chairperson of the examinations board and includes a note that the Bachelor's examination was failed. The same applies for the Bachelor's examination if failed on the final attempt.

Section III: Final provisions

§ 21 Invalidity of examinations

(1) If a candidate cheats in an examination and is only discovered after the diploma has been issued, the examination committee may correct the examination results affected by the deception accordingly, and may declare the examination partially or completely failed.

(2) If the requirements for admission to the examination were not fulfilled without any intent to deceive on the candidate's part, and this is only discovered after the diploma has been issued, the passed examination is considered a compensation for this shortcoming. If the candidate intentionally gained admission to the examination through deceit, the examinations board will make a decision on the matter.

(3) Before the decision is made, candidates will be given the right to provide an

explanation.

(4) Fraudulent examination diplomas will be confiscated and, if necessary, a new diploma will be issued. The Bachelor's certificate will be confiscated along with the fraudulent examination diploma if the examination was graded as "failed" due to deception. In accordance with Section 1 and Section 2, Sentence 2, a decision may not be made more than five years after the date indicated on the examination diploma.

§ 22 Access to examination documents

The candidate may request access to written examination documents, examiner reviews and the examination minutes within a period of one year after completion of the examination. The chairperson of the examinations board, in consultation with the applicant decides when and where access will be given.

§ 23 Coming into force

(1) These examination rules and regulations come into force on the first day of the month following publication in the President’s bulletin (Mitteilungsblatt des Rektors). At the same time, the examination rules and regulations of 03 July 2012 (President’s bulletin of 23 July 2012, p. 603), last modified on 7 February 2013 (President’s bulletin of 28 February 2013, p. 59) are suspended.

(2) Students who were already enrolled in the Bachelor’s degree programme in Mathematics at Heidelberg University prior to these examination rules and regulations coming into force refer to the examination rules and regulations of 23 July 2013 for a period of 6 semesters. Students who were already enrolled in the Bachelor’s degree programme in Mathematics at Heidelberg University prior to the winter semester 2012/13 refer to the examination rules and regulations of 05 August 2008 (President’s bulletin of 19 August 2008, p. 657) in the version dated 22 July 2010 (President’s bulletin of 30 August 2010, p. 1199). Upon application, students may request to switch to these examination rules and regulations. The informal application must be submitted to the Secretaries’ office for examination issues.

Heidelberg, 25 June 2015

Professor Dr. rer. nat. Bernhard Eitel,
President

Attachment 1

Programme structure BA degree Mathematics (at 100 %)

1st Year		
Analysis I-II		16 CPs
Linear Algebra I-II		16 CPs
Introduction to practical computer science		8 CPs
Introduction to numerical mathematics or probability theory and statistics (1)		8 CPs
preparatory seminar		6 CPs
FK I-II		6 CPs
		60 CPs
2. Year		
Higher Analysis		8 CPs
Introduction to probability theory and statistics or numerical mathematics		8 CPs
Compulsory elective Mathematics I-II		16 CPs
Application area I-II		16 CPs
Seminar		6 CPs
FK III		6 CPs
		60 CPs
3rd Year		
Compulsory elective Mathematics III-IV		16 CPs
Elective Mathematics I-II		16 CPs
Application area III		8 CPs
BA seminar		8 CPs
Bachelor's thesis		12 CPs
		60 CPs
	=====	180 CPs

Additional information:

(1) The modules are interchangeable in terms of which semester they are selected as long as this does not disrupt the sequence of the lectures. For example, it may be useful to select the area of specialisation instead of numerical mathematics or statistics in the second semester.

(2) The compulsory elective modules Mathematics I - IV must be selected in the compulsory electives 1, 2 and 3 in accordance with Attachment 2. One in-depth lecture marked with II (or a lecture from the Master's degree programme) must be included in at least one compulsory elective.

(3) Model syllabi for the approved application areas listed in Attachment 4 can be found in the module handbook.

(4) Interdisciplinary skills FK I - IV can be structured according to the information in Attachment 3 C. In accordance with §17 Section 3, the respective grades are not included in the calculation of the overall grade.

Attachment 2

Subject modules (for subjects at 100 %)

A. Compulsory modules:

Analysis I	8 CPs
Analysis II	8 CPs
Higher Analysis	8 CPs
Linear Algebra I	8 CPs
Linear Algebra II	8 CPs
Introduction to practical computer science	8 CPs
Introduction to numerical mathematics	8 CPs
Introduction to probability theory and statistics	8 CPs
Preparatory seminar	6 CPs
Seminar	6 CPs
BA seminar	8 CPs

B. Compulsory Electives 1:

Algebra I	8 CPs
Algebra II	8 CPs
Complex Analysis I	8 CPs
Complex Analysis II	8 CPs
Algebraic topology I	8 CPs
Algebraic topology II	8 CPs
Differential geometry I	8 CPs
Differential geometry II	8 CPs

C. Compulsory Electives 2:

Ordinary differential equations	8 CPs
Partial differential equations	8 CPs
Functional analysis	8 CPs
Probability theory	8 CPs

D. Compulsory Electives 3:

Numerical mathematics	8 CPs
Statistics	8 CPs
Linear optimisation	8 CPs
Non-linear optimisation	8 CPs
Computational statistics	8 CPs

E. Electives:

Additional lectures from the range of courses offered in the Bachelor's degree programme and (in exceptional cases) from the range of courses offered in the Master's degree programme (see module handbook Bachelor and Master Mathematics), as well as the lecture "Introduction to Theoretical Computer Science".

Additional information:

(1) In accordance with §18 Section 4, a module failed at the final attempt can only be compensated for with a module from the Compulsory Electives 1 to 3; a course associated with a different compulsory elective may not be selected for compensation.
(2) The course "Introduction to Theoretical Computer Science" can only be recognised in Elective E if the application subject is not Computer Science.

Attachment 3

Interdisciplinary skills (for subjects at 100 %)

Interdisciplinary skills are divided into two parts: electives and skills integrated in the compulsory courses. The following skills are integrated into the compulsory courses:

- 3 credits for programming in “Introduction to practical computer science”
- 3 credits for interdisciplinary collaboration in the application area courses
- 2 credits for specialised didactics in preparatory seminars and seminars

The electives for interdisciplinary skills are comprised of the following categories:
:

- Modules listed in the chapter “Interdisciplinary Skills” in the module handbook. More detailed information can be found in the handbook.
- Up to 10 credits for interdisciplinary skills in the programmes offered by the university according to the respective subject.
- Up to 10 credits for specialised didactics and education studies courses offered by the university or by Heidelberg University of Education.
- Max. two semesters abroad for 3 credits each

Additional information:

(1) It is highly recommended that students who wish to continue their studies in the Master’s degree programme “Scientific Computing” complete an internship within a company during the Bachelor’s degree programme.

(2) It is further recommended that students who wish to enrol in a Master’s degree programme other than Mathematics or Scientific Computing at Heidelberg University after their Bachelor’s degree programme verify the compatibility of the interdisciplinary skills with the admission requirements of the chosen Master’s degree programme.

(3) In the case of courses that constitute a combination of mathematics and interdisciplinary skills, all credits will be included in the calculation of the overall grade in accordance with §17 Section 3.

Attachment 4

3 credits of the 24 credits allocated to the application area are assigned to interdisciplinary skills which means that a total of 21 credits will be applied in the application area.

Permissible application areas:

A. Computer Science
B. Physics
C. Astronomy
D. Biology
E. Chemistry
F. Economics
G. Philosophy

Further information can be found in the module handbook.

Upon request, additional application areas may be approved by the examinations board in accordance with § 3 Section 4.

Attachment 5
Programme structure BA degree Mathematics (at 50 %)

1st Year	
Analysis I-II	16 CPs
Linear Algebra I-II	16 CPs
	32 CPs
2. Year	
Compulsory elective Mathematics I-II	16 CPs
Preparatory seminar	6 CPs
	22 CPs
3rd Year	
Compulsory elective Mathematics III	8 CPs
Elective Mathematics	8 CPs
Seminar	6 CPs
Bachelor's thesis	12 CPs (1)
	22 CPs
	===== 76 CPs

Additional information:

(1) The programme structure encompasses studies in mathematics exclusively; these must be supplemented by a second subject as well as the interdisciplinary skills modules.
(2) The credits obtained for the Bachelor's thesis in the main major are not included in the sum for the third year at university or for the subject component.
(3) The sum of 76 credits includes a subject component of 74 credits and 2 credits from interdisciplinary skills gained in the seminar and preparatory seminar.
(4) The sum of 76 credits does not qualify the candidate for a Master's degree programme in Mathematics at Heidelberg University.

Attachment 6
Subject modules (for subjects at 50 %)

A. Compulsory modules Mathematics
   1. Analysis I-II
   2. Linear Algebra I-II
   3. Preparatory seminar
   4. Seminar

B. Compulsory Electives Mathematics
   1. Algebra I
   2. Complex Analysis I
   3. Introduction to numerical mathematics
   4. Introduction to probability calculations and statistics

C. Electives Mathematics
   1. A course from the Compulsory Electives Mathematics that has not been previously selected.
   2. Additional courses from the range of courses offered in the Bachelor's degree programme Mathematics.
   3. An additional seminar.

Additional information:

(1) At least three modules from the Compulsory Electives Mathematics must be successfully completed.
(2) In accordance with §18 Section 4, the possibility of compensation of a course failed at the final attempt here means that, as three compulsory elective courses are mandatory, only the course that has not yet been completed can be added to the list.
(3) If mathematics is the main major, the Bachelor's thesis supervisor can require the candidate to register for a preparatory seminar.
(4) Students who wish to enrol in the Master of Education degree programme in Heidelberg and only complete three modules in Compulsory Electives B, must successfully complete the fourth module during the Master's degree programme.

Attachment 7

Interdisciplinary skills (for subjects at 50 %)

In the case of the subject at 50%, these examination rules and regulations only cover 10 credits for interdisciplinary skills; the remaining 10 credits are managed by the other major.

2 credits for specialised didactics are integrated in the preparatory seminar and seminar as a compulsory share. The remaining 8 credits can be selected from the electives for the subject at 100% as stated in Attachment 3. The upper limits will not be halved.

Additional information:

(1) It is recommended that students who wish to enrol in a Master's degree programme, in particular in the case of the degree programme "Master of Education", after their Bachelor's degree programme verify the compatibility of the interdisciplinary skills with the admission requirements of the chosen Master's degree programme. Specific details are listed in the university's framework conditions for the teaching degree option.

(2) In the case of courses that constitute a combination of mathematics and interdisciplinary skills, all credits will be included in the calculation of the overall grade in accordance with §17 Section 3.

Attachment 8

Entitlement to a Bachelor's thesis in mathematics, in the case of a subject at 50%, can only be granted if the second subject is one of the following:

- Computer Science
- Physics
- Chemistry
- Biology
- Economics

Upon application, other subjects may be approved in accordance with § 3 Section 2.

Attachment 9

Grading in accordance with ECTS

Relative grading in accordance with ECTS occurs according to the following scale:

A	the top 10 %
B	the subsequent 25%
C	the subsequent 30%
D	the subsequent 25%
E	the subsequent 10%

The grades are calculated based on the examination results of the entire graduating class, as well as the graduating classes from two or more previous years, depending on the number of students in the current graduating class. For degree grades, the ECTS grade must be included. For individual modules, the ECTS grade may be listed when possible and necessary.