

Examination Regulations for the Computer Science and Applied Computer Science Master Programs at the Technical University of Kaiserslautern

**From 9 September 2009,
last amended on 15 October 2012
(merged version)**

In accordance with §7 Section 2, No. 2 and Section 3, Clause 1 and §86 Section 2, No. 3 of the University Act as amended on 19 November 2010 (GVBl. P.463), BS 223-41 the Computer Science Department of Kaiserslautern University (TU Kaiserslautern) concluded in the faculty council meeting of 25 November 2009 the following combined examination regulations for the Computer Science and Applied Computer Science master's degree programs and European Master in Software Engineering. On 23 May 2012 the last amendment was concluded. This amendment was approved by the President of the TU Kaiserslautern in writing on 25 September 2012.

The following is a translation of the regulations to help non-German speakers, however the German version is legally binding.

§1 Scope of Regulations, Responsibilities

(1) These regulations specify the examination requirements and the examination procedure for the master's programs in Computer Science and Applied Computer Science at the TU Kaiserslautern. Interdisciplinary examination rules for these master's degree programs were adopted in the general master's examination regulations of the TU Kaiserslautern (AMPO) on December 22, 2005; the AMPO includes further specific requirements on the following points:

- Credit point system, course achievements (§5 AMPO)
- Examination board and examination office (§6 AMPO)
- Examiners and observers (§7 AMPO)
- Approval of study periods, coursework and examinations (§8 AMPO)
- Oral and written exams (§9 and §10 AMPO)
- Passing and failing the master's (§20 AMPO)
- Certificate, diploma supplement, master's certificate (§§21&22 AMPO)
- Invalidation of the master's examination (§24 AMPO)
- Students' rights to information (§25 AMPO)

(2) The master's examination board of the Computer Science Department is responsible for making decisions on examination matters concerning the master's programs.

§2 Nature and Objectives of the Programs

(1) By doing a master degree students can gain a further vocational and research qualifying degree. It is based on the bachelor degree course with the same name.

(2) During the master's programs, knowledge and skills gained at bachelor's degree level are broadened to state-of-the-art research. Students are prepared for doing independent research and demanding tasks in Computer Science and versed in the use of scientific methods and knowledge to solve various Computer Science problems.

(3) On the Applied Computer Science master's program, students gain competence particularly in one of their application-oriented research areas, whereas in the Computer Science master's program they specialize in one of the areas of basic research. On the master's program "European Master in Software Engineering", students gain extended competence in the development of correct software systems under time and cost constraints regarding the project development and implementation.

(4) Graduating with a master's degree shows that students have acquired well-grounded scientific knowledge in Computer Science and are in a position to do basic and application-oriented research.

§3 International Scope

(1) Courses and examinations for the master's program may be done in German or English.

(2) The department guarantees that foreign students have a sufficient choice in English courses so that their studies can be done predominantly in English.

§4 Admission to the Master's Programs

(1) Applicants who fulfill the general admission requirements of the TU Kaiserslautern and who qualify after being assessed by the criteria described in Appendix A are accepted onto the master's program. Admission may include additional requirements (see 2 and 3).

(2) With regard to the assessment procedure, the examination board may limit the choices of an applicant by binding admission to particular restrictions when compiling the examination schedule (see §7).

(3) If the applicant's bachelor's degree is not equivalent to a bachelor's degree of the TU Kaiserslautern, courses of up to a maximum of 60 additional ECTS performance points (CPs for short) from bachelor courses can be required to be done. These additional CPs are to ensure equivalence to the bachelor's degree of the TU Kaiserslautern during the first 2 semesters. They are not part of the master's program and therefore are not included in the calculation of the overall grade of the master's program. The completion of any additional courses is subject to the respective bachelor examination regulations.

(4) In exceptional well-founded cases students can be admitted to master degree courses with the approval of the examination board if they are registered for the corresponding bachelor degree course in the Department of Computer Science at the TU Kaiserslautern and only have to achieve a maximum of 25 further credits to successfully achieve their bachelor degree. They must also fulfill all other requirements mentioned in Section 1.

The enrolment is no longer valid if proof of the successful completion of the bachelor degree isn't given by the end of the first semester.

§5 Degree structure and prescribed period of study

(1) The master's programs in Computer Science, Applied Computer Science and European Master in Software Engineering are divided into blocks that are again subdivided into modules and modules are allocated to courses. Courses consist of lectures (with or without exercise classes), seminars and projects and practical labs.

(2) Modules carry a certain weight, which corresponds to the expected time and effort students put into them. One ECTS credit point (CP) corresponds to about 30 hours of work.

(3) In the appendix to these examination regulations it can be seen which blocks belong to which degree course and which compulsory modules and elective modules have to be taken. .

(4) The way the courses are allocated to the modules is specified in the module handbook of the Computer Science Department. The faculty council of the Computer Science Department determines the module handbook. For every module, in addition to the respective lectures, choice possibilities within the module are also indicated (where applicable). Furthermore it is also possible to indicate which examination admission requirements need to be conformed to for that particular module (see §6 Section 5) and which kind of examination is applicable to the module (see §6 Section 3).

(5) The standard period of study up to the completion of the master's exam is 4 semesters for all three programs.

§6 Course achievements and Examinations

(1) Coursework is made up of tutorials, seminars, projects and practical labs; in order to succeed the following has to be achieved:

- In exercise classes: solving exercises and/or taking semester examinations.
- In seminars: written solutions on prearranged subjects and an oral presentation is expected, as well as joining in discussions about topics presented by other seminar participants.
- For practical labs and projects, the evaluation of the solutions worked on and their presentation is important.

The lecturer or professor responsible should have certified the coursework within four weeks of the end of the course. Coursework can be marked according to §16 AMPO; however these grades do not count towards the overall grade (see §11 Section 3).

(2) For exercise classes, seminars, practical labs and projects, regular attendance can be important for successful completion. Full details of the criteria for coursework have to be announced by the lecturer or professor responsible for the course by the first meeting at the latest.

(3) Graduating with a master's degree requires writing and handing in a master's thesis and passing the appropriate module exams. The student has the choice of doing exams in German or English. The following requirements must be fulfilled:

- The master's thesis has to be completed and handed in before the given deadline. It is marked on its content and its presentation in its final written.
- Module examinations are either written or oral. Module exams should not be split up into separate parts. Exams are done for modules, which are allocated to the appropriate lectures. Written exams should last for 10-20 minutes per CP, but should be at least one hour and at most 4 hours long. Oral exams should last for 3-8 minutes per CP, but should be at least 15 minutes and at most one hour long.

The examiner responsible marks all examinations according to §16 in the AMPO stipulations. The assessment of written exams and of the master's thesis should all be completed within 4 weeks of the exam, or of handing in the master's thesis.

(4) The module handbook can specify whether an exam will be oral or written. In any other case the form of the exam has to be announced by the first lecture at the latest.

(5) It may be necessary to satisfy requirements laid down in the module handbook before admittance to a modular exam is granted. Detailed information on fulfillment of admission prerequisites has to be announced by the first lecture of the module at the latest.

(6) Concerning the authorized study period laid down in §9 and to determine the date of the graduation certificate the dates for the examinations in Section 3 are defined as follows:

- For the master's thesis, the date when the final version is handed in at the examination office is applicable.
- For modular exams, the date of the respective exam applies.

For other coursework, the date they are assessed applies.

(7) A period of study abroad or an external practical activity which complements the master's is good reason to be granted academic leave of absence. Approval of study and examination requirements in these cases is regulated by §8 of the AMPO.

§7 Examination Planning and Mentoring System

(1) Students have to present an examination schedule to the examination office by the end of their first semester at the latest, which lists the courses for study achievements and examinations they plan to accomplish to pass their master's. When putting the examination schedule together, the requirements from §4 Section 2 and 3 have to be incorporated. For the master's program in Computer Science, the specialization and also the minor subject should be stated, as stipulated in the study plan. For the Applied Computer Science master's program, the field of application should be stated. For the European Master in Software Engineering, course achievements and examinations that were earned at a partner university and are approved for the master program have to be listed.

(2) The examination schedule can be updated in later semesters. However, changes in the examination schedule can only apply to modules, which haven't been examined yet.

(3) The examination office checks whether the examination schedule adheres to the corresponding appendices study plans, as well as to the legal examination requirements in the module handbook. The examination schedules are not allowed to contain any modules that were already placed in a previously completed bachelor's degree course. The examination board decides which additional previous study achievements are accepted as equivalent.

(4) The examination board allocates each student to a professor who acts as mentor for compiling and refining the examination schedule. The mentor is able to access information on the student's study and examination progress from the examination office. He or she should advise the student and should supervise the progress of his or her studies. The examination board has the final say over any differences of opinion between students and mentors, or if a mentor is changed.

(5) The mentor authorizes examination schedules, which are no different or differ only marginally from the ones in the study plans. In cases of larger differences, approval from the examination board is necessary. Differences are counted as marginal when they refer to modules of a maximum of 12 CP.

§8 Examination Procedure

(1) Application for admission to the master's examination must be done in writing at the latest before registering for the first modular exam at the Computer Science examination office. The application has to include explanations in keeping with §14 Section 2 of the AMPO. The examination board decides on admission as per §13 Section 2 of the AMPO.

(2) Students must register every exam at the examination office, especially in the case of retakes. Registration for an exam, which is relevant to passing the master's program, can only be done if the module is on the examination schedule. Registration for written exams has to be done within the time period specified by the examination office. Registration for oral examinations has to be done at least 2 weeks before the examination, but at the earliest 12 weeks before the examination. Registering a master's thesis is regulated by §10 Section 3.

(3) Students can withdraw from a modular exam without stating a reason if they keep to the deadlines under the terms of §9 Section 4 and 5. Notice of withdrawal from a modular exam has to be done at the examination office, either in person or in writing at least one week before the examination date.

(4) The examination board sets the date of the modular examinations in coordination with the examiners responsible. Written examination dates are posted on the website of the examination office at least four weeks before the exam. In the case of oral examinations, students may make suggestions for examination dates.

(5) If a student does not turn up to an examination he or she is registered for, then this exam counts as failed. Further regulations about unexcused absence, withdrawal, deception and breach of regulations are stipulated in §19 AMPO.

(6) Every module examination that has been attempted must be passed eventually. (cf. also §9, Section 1).

(7) Examinations of modules from other faculties are done according to the guidelines of the respective faculty. Specifically, the faculty concerned can regulate the admission requirements for the exam, the form of the exam (written/oral), the examination date, the duration of the exam, the execution of the exam, the notification of the results, all of which may differ from these regulations. Furthermore, the external faculty can require that a student must do an additional oral exam. Coursework and examinations have to be verified by the respective computer science examination office in conjunction with the student.

§9 Retaking Examinations, Deadlines, Failing the Master's

(1) Students are allowed to resit failed module examinations twice. If students fail the second resit they lose their right to take this exam again for good. Retaking an exam that has already been passed (i.e. to improve the grade) is not allowed. Supplementary oral exams in terms of AMPO are not offered (however, see §8 Section 7). (2) When retaking written exams, the remaining two repeat exams have to be taken from the next three exam dates offered; failure to meet the deadline as stated in Clause 1 means the retake counts as failed. For each written module exam at least two examination dates should be offered per year.

(3) Retaking an oral exam has to be done between at least one month and at most six months after the failed attempt.

(4) The examination period of a semester lasts until the first day of lectures in the following semester. Registration for the master's thesis has to be done by the end of the examina-

tion period of the fifth semester. For certain master programs there are the following stipulations:

- For the master's in Computer Science exams for the complete theory block have to be registered by the third semester.
- For the Applied Computer Science program exams for the complete modeling block have to be registered by the third semester.

First time examinations, which have not been taken by the deadlines above, are considered failed (§19 Section 2 AMPO), which means Sections 2 and 3 apply when retaking the exams. §4 Section 4 AMPO regulates the observance of deadlines for the overall length of study.

(5) All the necessary coursework and examinations apart from the master's thesis have to be completed by the end of the examination period of the sixth semester of the program. The master's thesis has to be handed in by the end of the examination period of the seventh semester of the program. If not the student completely loses the right to take exams. The right to take exams is also void if the additional requirements are not completed by the end of the first two semesters of the master in accordance with the relevant bachelor's examination regulations.

(6) If the right to take the exam is completely lost, the chairperson of the examination board will issue a written notification with legal instructions.

(7) In cases where additional courses were stipulated, the examination board may grant an extension to the above deadlines.

§10 Master's Thesis

(1) A master's thesis should show that the student can solve a computer science problem using scientific methods with the assistance of a supervisor within a specific time period and also present it and defend it orally.

(2) The subject of the master's thesis is defined and supervised by a lecturer of the Computer Science department and should be equal to 30 CP. This lecturer and a second examiner mark the master's thesis. The second examiner can be anyone from §7 Section 2 AMPO and specifically a research assistant from the Department of Computer Science. For external master's theses the examination board can name external examiners to be second reviewers.

(3) Students must register their master's thesis at the appropriate examination office before beginning the thesis, specifying the subject, the name of the main examiner and the commencement date. The examination office informs the main examiner about the registration of the thesis. A prerequisite for registering a thesis is that the student should already have at least 60 CP for the master's program at the time of registration.

(4) The maximum time period for a master's thesis is six months. Three copies of the written work have to be handed in at the relevant examination office before the end of that period. In addition, in accordance with the Computer Science Department an electronic version of the work should be handed in to check for plagiarism. If the thesis is not handed in before the deadline, it counts as failed. The chairperson of the examination board can give extensions of up to a maximum of three months upon written substantiated request. Applications for extensions must be made to the examination office at least one month before the end of the processing time.

(5) In order to check that the work done for a master's thesis was done independently a colloquium takes place where the examiners of the thesis have to be present. The colloquium should take place four weeks after handing in the thesis at most.

(6) The examiners must write reviews on the master's thesis for their final assessment, which should be handed into the examination office. The reviews should in particular include information about the independent preparation of the thesis, the results achieved, the didactical layout of the final work as well as the talk given. If both examiners agree on their rating of the thesis, then only one joint review is necessary.

(7) Should there be misgivings about the independence of the work in the thesis, then the examination board rules on the matter after giving the student and examiner a hearing on whether the thesis can be accepted and reviewed, or if the case of §19 Section 5 Clause 1 AMPO applies.

(8) Further regulations, especially regarding returning, assessment and retaking can be found in §11 AMPO.

§11 Degree Title and Certificate

(1) On successful completion of the master's degree the title "Master of Science" or "M.Sc." for short, is awarded.

(2) Apart from the final grade the certificate also contains the grades and credit points of all the module exams taken, as well as the grade and subject of the master's thesis. In addition the certificate contains the titles of the seminars, projects and practical labs done, without the grades, but with the respective credit points. For the Computer Science program the subject majored in and the minor subject are also noted on the certificate; for the Applied Computer Science program the chosen field of application is also noted on the certificate. Furthermore, particulars from §21 Section 1 AMPO are listed. If additional courses were made during the admission process, see §4 Section 3, then these can also be included in the certificate, at the student's request.

(3) The total grade given in the certificate is made up of a weighted arithmetic mean from the master's thesis and the grades of the module exams. Additional courses as in §4 Section 3 are not counted. The weighting here are the credit points of the appropriate examinations. When assigning the weighted averages only the first decimal place after the point counts, all other decimals are discarded and not rounded up.

(4) The total grade is supplemented by a relative ECTS-grade, which is included in the Diploma-Supplement. The ECTS-scale takes statistical considerations into account in which the group of graduates who have passed the master's is graded and divided up as follows:

- Grade A goes to the best 10 % of the graduates
- Grade B goes to the next 25% of the graduates.
- Grade C goes to the next 30% of the graduates.
- Grade D goes to the next 25% of the graduates.
- Grade E goes to the last 10% of graduates.

. Calculations are carried out by the examination office based on the statistical analysis of the examination results. The evaluation is based on a period of three years. As long as the relevant databases are still being developed, the responsible examination board decides on an appropriate system in order to determine the relative total grades.

§12 Date of Effect

These examination regulations come into effect on xx.xx.xxxx and are also applicable to students who are already enrolled onto a program and for their current examinations. Students who are already enrolled have the possibility of applying, stating reasons, to be examined under the old regulations.

A Assessment

(1) The assessment procedure described here evaluates the personal aptitude and expertise of an applicant to be admitted to the consecutive master programs in Computer Science and Applied Computer Science, as well as for the European Master in Software Engineering. Admittance on the European Master in Software Engineering program is carried out jointly with the partner universities.

(2) After receiving applications from students who are interested in the master's courses in Computer Science, assessment is organized by the examination board of the department. The application procedure is announced on the department webpage, which also advises on application deadlines.

(3) The aptitude of a candidate is assessed using the following documents in German or English, which need to be included in the application:

1. A graduate certificate from the previous program and further documents which show the final grade, length of study and courses taken (e.g. in the form of an academic transcript, transcript of records or corresponding performance records),
2. a description of the contents of the courses as listed under 1),
3. a statement including motive for the proposed admittance to the program and an explanation of study goals,
4. a career and personal background description (CV) with explanations about practical knowledge and experience where necessary,
5. letters of recommendation from at least 2 university lecturers; the letters of recommendation should include evidence on how well the applicant did in relation to other graduates on the same course,
6. proof of adequate German and English language skills

Graduate candidates from the TU Kaiserslautern only need to provide the documents described in No. 1, 3, 4 and 6.

(4) The assessment procedure for the consecutive master's program "Computer Science" and "Applied Computer Science" is done in 2 steps; for the non-consecutive master's program "European Master in Software Engineering", only the second step applies:

- When verifying the equivalence of the level of the previous degree its range, content and orientation is compared to the respective bachelor program of Computer Science or Applied Computer Science of the TU Kaiserslautern. If the degree is deemed equivalent, then the verification of equivalence counts as passed. In other cases the examination board can make the candidate do up to a maximum of 60 CP which have to be done as additional courses as required by §4 Section 3. If the level of study cannot be achieved in such a way through additional courses, then the candidate is deemed not eligible for the program.
- Technical and personal assessment is done using the following criteria:
 - Knowledge of German and English
 - Achievements during the previous degree
 - Practical knowledge and experience which is beneficial to the master's
 - Sufficient motivation to study
 - Ability to study quickly and effectively

(5) Assessment of a candidate concludes in an evaluation and is recorded as “suitable” or “not suitable”. Should the aptitude of the candidate not be easy to ascertain, the examination office may ask for further documentation or invite the candidate to give an introductory talk to the examination board members.

(6) Should the assessment result in “not suitable” the candidate must wait at least one year before reapplying.

(7) The outcome of the assessment is sent to the candidate in writing with instructions on the right to appeal. A record is made of the assessment procedure. §25 Section 2 AMPO regulates granting access to the records.