Study and Examination Regulations for the

Master Program Applied Research in Computer Science

at the Hof University of Applied Sciences

From 10th January 2019

Only the German version of this document is legally binding. This English translation is for your convenience only.

Based on Art. 13 Para. 1 Clause 2 and Art. 43 Para. 5 Clause 2 of the Bavarian Higher Education Act - BayHSchG - (BayRS 2210-1-1-WFK), Hof University of Applied Sciences enacts the following statutes:

Preliminary Note

These statutes have been formulated in a gender-neutral manner wherever possible. Even where this is not the case for linguistic reasons, references to persons in the following provisions refer to members of either gender.

§1

Purpose of the Study and Examination Regulations

¹These regulations govern access to the Master's program Applied Research in Computer Science as well as the content and structure of the program. ²In addition, it makes the necessary specifications for the examinations in this study program to fulfill the framework examination regulations for the universities of applied sciences - RaPO - (BayRS 2210-4-1-4-1-WFK) and the general examination regulations of the Hof University of Applied Sciences (APO).

§ 2

Degree Program Objective

¹The goal of the Master's program is to enable students to conduct independent research. ²In addition to computer science in the strict sense, the focus is also on related interdisciplinary fields of science (e.g. cyber-physical systems). ³The graduates are able to achieve high-quality results in the execution of complex application-oriented research and development projects.

§ 3

Standard period of study

The standard course length is three semesters.

§ 4

Admission requirements

¹Admission requirements are

- a successfully completed first professional degree at a German or foreign university with at least 180 credits (credit points according to the European Credit Transfer and Accumulation System -ECTS) in a computer science degree program or an equivalent degree and
- 2. proof of suitability for the specific course of study in accordance with § 5.

²A computer science degree program within the scope of sentence 1 no. 1 also exists if the study program was related to an interdisciplinary scientific field bordering on computer science in the strict sense, provided that competencies in the areas of object-oriented programming, software engineering, databases and computer networks were the subject of study and examination at least in the same breadth and depth as is the case in the Bachelor's degree programs in media informatics (Medieninformatik) and business information systems (Wirtschaftsinformatik) at Hof University of Applied Sciences. ³The examination board decides whether this requirement is fulfilled; in doing so, it is guided by the standard of Art. 63 Para. 1 Clause 1 BayHSchG (no significant differences).

§ 5

Proof of suitability for the specific course of study

(1) ¹In order to be able to achieve the study objective within the standard period of study, students are integrated into the research groups of the Institute for Information Systems at Hof University of Applied Sciences (iisys) from the very beginning. ²The Master's program therefore requires a research-related competence profile, which is not necessarily possessed even by graduates with above-average overall qualifications from a first-degree program leading to a professional qualification. ³There is therefore a separate procedure with examination character to prove the suitability for the specific course of study.

(2) ¹The procedure consists of a part A and a part B. ²Only those who have achieved a grade of at least 2.3 in each of the two parts are suitable for the Master's program. ³The grade for Part A consists of the arithmetic mean of all equally weighted individual grades for the elements of this part.

(3) ¹In so far as nothing to the contrary results from the provisions of this section, the APO and the RaPO shall apply accordingly to the procedure. ²The examination board shall be replaced by a selection board. ³This shall be appointed by the examination board and shall consist of one member as chairperson and at least one further member; the members must be heads of a research group in the Institute for Information Systems.

(4) ¹A student is admitted to Part A if he/she has applied for enrollment in the Master's program in due form and time, has proven within the application period that he/she fulfills the prerequisite mentioned in Paragraph 6, and has submitted the documents mentioned in Paragraph 7, Sentence 1 as well as the essay mentioned in Paragraph 7, Sentence 2. ²This shall not apply if the relevant enrollment application is to be rejected or may and will be rejected even if the program-specific aptitude is met; if this does not happen, admission shall be deemed granted if the prerequisites specified in sentence 1 are met.

(5) ¹Admission to Part B shall be by means of issuing the case study and invitation to the oral examination in accordance with Para. 8. ²It shall require that at least the grade 2.3 has been achieved in Part A.

(6) ¹Only those who have achieved an average grade of at least 2.5 or an equivalent result in the examinations taken to obtain the degree in accordance with § 4 sentence 1 no. 1 in the areas of object-

oriented programming, software engineering, databases and computer networks on a grading system corresponding to the grading system of the Hof University of Applied Sciences shall be admitted to part A. ²It is equivalent if the applicant proves that he belongs to the best 50 % of the graduates of his final year in the respective course of studies.

(7) ¹For Part A, the following documents must be submitted:

1. a self-written scientific paper in German or English, e.g. a Bachelor's thesis or a student research project, from the field of computer science or related interdisciplinary scientific fields,

2. a relevant certificate in German or English (e.g. from an internship report accepted by a university or an internship or work certificate) on the performance of practical activities in one or more IT projects.

²In addition, Part A includes the preparation of a short scientific essay in English in text form (approx. two pages A4). ³This has to give an overview of the current technologies in one of the areas (Research Topics), which are published on the website of the Department of Computer Science for information about the admission requirements.

(8) ¹Part B consists of working on a case study from the research activities of iisys and taking an oral examination of 30 minutes in English, in which the results of working on the case study are to be presented and related and other examination questions are to be answered. ²The case study is issued together with the invitation to the oral examination by e-mail.

(9) On the basis of the documents to be submitted and the examination results to be achieved, the selection committee shall determine the extent to which the applicants possess the competences specified in the table below.

ongoing.	Competences	Subject of examination yes/no			
no.		(crossed = yes,			
		not crossed = no)			
		Research work (Para. 7 Clause 1 No. 1)	Practical certificate (Para. 7 Clause 1 No. 2)	Paper (par. 7 clause 2 and 3)	Part B (par. 8)
1.	Ability to analyze and understand technical problems and to translate them into software solutions.	х			
2.	Overview of the current technologies in one of the areas according to para. 7 sentence 3			х	Х
3.	Methodological competence:				
3.1	Ability to perform technology selection via a criterion-supported comparison	х			х
3.2	Fundamental competencies in IT project management such as code management in teams, testing tools and task management		Х		
4.	Aptitude for scientific activity:				
4.1	Ability to work and write scientifically	х			
4.2	Ability to use relevant databases to research thematically relevant technical papers and to evaluate their quality	х		х	
5.	Self-competence, i.e. a critical attitude and the ability to question facts (e.g. analyzing statistics for possible systematic weaknesses).				х
6.	Social competence:				
6.1	Communication skills, in particular the ability to express problems adequately and to present technical concepts clearly and precisely			x	х
6.2	Ability to work in a team, especially the aptitude to work in heterogeneous and interdisciplinary teams		Х		
7.	Intercultural competence, in particular the awareness of cultural differences and the ability to take them into account.				х

§ 6

Modules

(1) The modules required to pass the Master's examination, the type and scope of the courses, the form of the examinations including the processing times for the preparation of the scheduled supervisory work as well as the assessment according to the ECTS are specified in the Annex.

(2) ¹The curriculum of the Master's degree program is based on an undergraduate degree (Bachelor's degree) with a scope of 210 credits or equivalent, which has included academic study phases with a scope of 180 credits and practical study phases with a scope of 30 credits or equivalent. ²In the case of applicants who have only completed a first course of study leading to a professional qualification with a scope of 180 credits or with an equivalent scope, it is a prerequisite for passing the Master's examination that they acquire an additional 30 credits. ³If they have not yet completed any practical study phases of the scope specified in sentence 1, they must complete an internship in a company that is dedicated to an activity of 900 hours that corresponds to the degree pursuant to § 4 sentence 1 no. 1 in terms of its professional orientation as well as significance and difficulty. ⁴In addition, they shall acquire 30 credits in accordance with the study and examination regulations for the Bachelor's degree programs of the Department of Computer Science in modules of their choice, with the exception of those from the basic area and the practical semester. ⁵The fulfillment of the requirements according to sentence 3 must be proven by a certificate from the company describing the object of the practical activity in the manner required for this purpose. ⁶Prior to the provision of the aforementioned proof, access to the modules of the Master's degree program is not yet open to the students concerned.

(3) ¹Crediting of study and examination achievements from the first professionally qualifying degree course towards the achievements to be provided in accordance with Para. 2 Sentences 2 to 4 can only take place, irrespective of the other crediting requirements, insofar as these achievements did not relate to any of the modules required for the completion of this degree course. ²The performance in the internship pursuant to Para. 2 Sentence 3 as well as the final grades of the additional modules required pursuant to Para. 2 Sentence 4 shall not be taken into account when determining the overall grade of the Master's examination.

§ 7

Module Catalogue, program curriculum

(1) ¹The Department of Computer Science shall prepare a module catalogue. ²The module catalogue specifies the teaching content and learning objectives of the modules in detail. ³In addition, it contains, in particular, more detailed provisions on the examinations listed in the appendix as well as the professional supervision during the preparation of the final thesis.

(2) ¹In addition, the Department of Computer Science shall draw up a program curriculum. ²The program curriculum informs in detail about the courses offered by the Department and the recommended course of study.

(3) ¹The module catalogue and the program curriculum are adopted by the Departmental Council in agreement with the Examination Committee and are to be made public at the university. ²The announcement of new regulations must be made at the latest at the beginning of the lecture period of the semester in which the regulations are to be applied for the first time.

(4) ¹In addition to the compulsory elective modules listed in the appendix, modules from other Master's degree programs may also be selected as compulsory elective modules. ²The details are regulated by the program curriculum.

(5) ¹There is no claim that all elective modules listed in the appendix will be offered. ²The relevant offer is determined in the program curriculum, taking into account the demand.

§ 8

Master's thesis

(1) ¹The topic of the Master's thesis is assigned at the beginning of the third semester of study. ²In the Master's thesis, the students shall prove that they have achieved the study objective according to § 2. ³The time from the issue of the topic of the Master's thesis to its submission is five months.

(2) For Master's theses, only professors may be appointed as examiners who have several years of experience in conducting research and development projects in the field of computer science or related interdisciplinary scientific fields and whose reputation is proven by at least one peer-reviewed scientific publication in the last three years.

§ 9

Language of teaching and examination

¹Courses and examinations shall be conducted in English. ²In the case of elective modules that can be selected from the range of other degree programs, the language of instruction and examination shall be governed by the regulations of the corresponding study and examination regulations.

§ 10

Academic Degree

Upon successful completion of the Master's examination, Hof University of Applied Sciences awards the student the degree of Master of Science (M.Sc.).

§ 11

Examination Board

¹In the Department of Computer Science an examination board for the Master's program Applied Research in Computer Science is established. ²The examination board consists of the chairperson and two other members. ³The members are elected by the Departmental Council.

§ 12

Effective date

This statute shall come into effect on the day following their publication.

Issued on the basis of the resolution of the Senate of Hof University of Applied Sciences of December 19, 2018, and the approval of the President of the University of Applied Sciences of January 10, 2019.

Hof, January 10, 2019

signed

Prof. Dr. Dr. h. c. Jürgen Lehmann

President

These bylaws were deposited at the university on January 10, 2019. The laying down was announced by notice in the university on January 10, 2019. The day of announcement is therefore January 10, 2019.

Annex (to § 6 para. 1)

Nr.	Module name	SWS	type	Type of examination	Credits
I. Pflichtbereich (Mandatory section)					
1 Grundlagenvorlesungen (Fundamental Courses)					
1.1	Konstruktionswissenschaftliche For- schungsmethoden (Construction science research methods)	2	SU	StA	3
1.2	Behavioristische Forschungsmethoden (Behaviouristic research methods)	2	SU	StA	3
2 Kernveranstaltungen (Core Courses)					
2.1	Projektseminar I (Project Seminar I)		S	Ref	6
2.2	Projektseminar II (Project Seminar II)		S	Ref	6
2.3	Forschungsprojekt I (Research project I)		Pr	PrA	12
2.4	Forschungsprojekt II (Research project II)		Pr	PrA	12
3 Weiterführende Veranstaltungen (Advanced Courses)					
3.1	Neue Technologien in der Informatik (New technologies in computer science)	2	S	Ref with SA	3
3.2	Geschäftsmodelle entwickeln und gestalten (Digitalisierung/ Gründung) (Developing and shaping business models (digitization/foundation))	2	SU	StA	3
Summe Credits Pflichtbereich (Total credits Mandatory section)			1	48	

II. Wa	hlbereich (Elective section)				
4.1	Ausgewählte Grundlagenvorlesung gemäß der Studien- und Prüfungsordnung für den Masterstudiengang Informatik ¹	4	SU, Ü	P ²	6
	(Selected foundation lecture according to the study and examination regulations for the Master's program in computer science ¹)				
4.2	Fachbezogenes Wahlmodul gemäß der Studien- und Prüfungsordnung für den Masterstudiengang Informatik ¹	4	SU or S	P ²	6
	(Subject-related elective module according to the study and examination regulations for the :aster's degree program in computer science ¹)				
Summe Credits Wahlbereich (Total credits elective)		12			
III. Ma	aster Thesis				
5. Master Thesis				AA	30
Total	Credits Overall				90

¹ Subject-related elective modules comprise 4 SWS and 6 credits. Exceptions to this, e.g. in the area of the offerings of the Virtual University of Bavaria (vhb), are possible. Subject-related elective modules from which students can choose are Mixed Media; Usability Testing; IoT Architectures; Mobile Access to Web Applications; Security Research Seminar; Current Topics in IT Security; Data Mining and Machine Learning; Information Structuring and Visualization. The specific courses offered will depend on available teaching capacity and student demand. In order to be able to teach current topics from research, industry and business as subject-specific elective modules, it is possible to offer additional modules that are not included in the above subject catalogue. These will be published in the curriculum at the beginning of each semester.

 $^{\rm 2}$ StA, schrP or mdIP. The form of the examination is specified in the module catalogue.

Explanation of abbreviations:

AA	final thesis	SA	Seminar paper (regular workload 25 hours)
mdlP	oral exam (examination time 20 minutes)	schrP	written exam (processing time 90 minutes)
Ρ	Exam	StA	Student research project (regular workload 50 hours) with presentation (duration 15 to 25 minutes)
Pr	Project	SU	Seminar teaching
PrA	Project work in the form of a scientific article (regular workload 100 hours)	SWS	hours per week
Ref	report (duration 20 to 30 minutes)		
S	Seminar	Ü	Exercise