HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Study Programme: Applied Computer Science (Master of Science)

Study Regulations

Schmalkalden University of Applied Sciences, Faculty of Computer Science

March 18, 2025

Preamble This is not an official document

Contents

§ 1 Fundamentals

1) These study regulations, in conjunction with the actual examination regulations, govern the aim, content and structure of the *Applied Computer Science (Master of Science) degree programme* at Schmalkalden University of Applied Sciences.
2) Status and function designations according to these regulations always apply to all genders.
3) The standard period of study for this course is four semesters.
4) Should provisions of these study regulations jeopardise the use of statutory maternity leave or periods of parental leave or unreasonably impair the care of close relatives or the interests of students with disabilities or chronic illnesses, the Faculty Council must take remedial action.

§ 2 Admission requirements and start of study in the programme

1) Admission to the Master's degree programme is granted to those who fulfil the following requirements:
    a) Passed final examination (Bachelor of Science, Bachelor of Engineering or Diplom at a university within the scope of the Basic Law hereby: German Grundgesetz or at a state or state-recognised vocational academy) in a degree programme with a minimum proportion of Computer Science or Business Informatics modules of 50% with an overall grade of at least 2.5. For applicants with foreign degrees, §16 paragraph 1 of the examination regulations applies accordingly.
    b) Proof of an English language qualification at least at level B 2.2 of the Common European Framework of Reference for Languages. This level corresponds to the TOEFL IBT (internet based) certificate with 80 points or British Council (IELTS) with 6.5 points. Graduates of a university degree programme taught predominantly in English (MOI, medium of instruction) must also provide proof of the language qualification mentioned in sentence 2. This does not apply to native speakers.
    c) A positive admission decision by the examination board, which is made on the basis of an assessment of the application documents, in particular the obligatory letter of motivation. The assessment should in particular take into account proven practical skills in software development, advanced knowledge of an object-oriented programming language (e.g. Java) and a comprehensible interest in current issues of modern software development. The examination board may delegate this assessment to authorised representatives of the faculty. In this case, the application documents must be made available to the examination board for review of the decisions upon request.

2) If there are more study places than applicants who fulfil the requirements in paragraph 1, applicants who have passed the degree specified in paragraph 1 with an overall grade of less than 2.5 may also be admitted by decision of the Faculty Council.

§ 3 Commencement

The degree programme can be commenced only in the first semester at the beginning of the winter semester.

§ 4 Study Goal

The degree programme aims to deepen the specialist and methodological skills already acquired in a university degree methodological skills in computer science and to broaden practical professional competences. In addition teamwork, social competence and communication skills are taught as well. The programme focuses on the following subject areas:

- Knowledge engineering and data science; theory of computer-based learning as well as concepts and technologies of technologies of computer-based intelligence and knowledge representation and processing
- Software engineering; principles, methods and tools for the development of complex software systems
- Communication technologies and security; concepts and technologies for service-orientated and secure communication.

The aim of the *Applied Computer Science (Master of Science) degree programme* is to train specialists who can design, develop and operate distributed and intelligent systems. The programme focuses on principles, methods and tools as well as application concepts. Furthermore, students should be introduced to current research topics in the aforementioned subject areas so that they are qualified to work in applied research and for a doctorate in practical and applied computer science.

§ 5 Structure of Study Programme

1) The *Applied Computer Science (Master of Science) degree programme* comprises a compulsory area and a compulsory elective area.

2) Students must complete all modules in the compulsory area and the selected modules in the compulsory elective area by passing an examination in accordance with the examination regulations.

§ 6 Modules

1) In the *Applied Computer Science (Master of Science) degree programme*, modules consist of one or more courses, which can take the following form:

   i) **Lecture** Coherent presentation and teaching of basic and specialised knowledge as well as methodological skills.

   ii) **Seminar-type lecture** Teaching content is developed here through close links between the lecture and its exemplary consolidation. The lecturer conveys and develops the subject matter with the participation of the students.

   iii) **Seminar** Development of scientific findings or assessment of predominantly new problems using scientific methods. Contributions prepared by students are part of this teaching form.

   iv) **Exercise** Working through course material; imparting basic knowledge and skills; deepening methodological knowledge by solving exemplary tasks that are solved in individual or group work.

   v) **Computer-aided practical training** Promotes the development of experience in the use of software tools and groups of tools through the practical application of methodological knowledge in the analysis, design, implementation and maintenance of software systems.

   vi) **Project** Independent solution of a related complex task that requires the application of knowledge of an entire specialised complex; a whole spectrum of methods and tools is used. The tasks set are solved within the framework of project groups.

2) The type of the respective course is regulated in the module descriptions.

3) All modules are held in English. Exceptions to this require the approval of the Faculty Council.

4) Students are trained to work independently, autonomously, methodically, scientifically and problem-orientated and are individually challenged in their chosen areas of specialisation. With the development of new didactic methods, work in small groups is to be particularly encouraged. The faculty can set a limit on the number of places to be offered per course, taking into account the personnel, technical and spatial conditions.

5) Individual courses in the compulsory elective area that are attended by fewer than five students may be cancelled by resolution of the Faculty Council before the start of the lecture period.

§ 7 Standard Curriculum

1) The standard curriculum is structured as follows table 1. The allocation of credit points (CP), teaching load (SWS) and examination form is listed in Annex 1 table **??**.

Table 1: Compulsory area of the *Applied Computer Science programme (Master of Science)*

	semester			
	1	2	3	4
Compulsory				
Seminar			5CP	
Project			5CP	
Compulsory elective	30CP	30CP	20CP	
Master thesis				27CP
Master defense				3CP
sum compulsory	0CP	0CP	10CP	30CP
sum per semester	30CP	30CP	30CP	30CP
Overall				**120CP**

2) The compulsory elective area comprises of the following modules:

Compulsory Elective Part Students must acquire at least 80 CP from this area. The allocation of credit points (CP), teaching load (SWS) and form of examination is regulated in *Annex 1* of the exam regulations.

Table 2: compulsory elective modules

module name	credits (ECTS)
Distributed Systems	5
Signals and Systems	5
IT-Security	5
Computer Graphics	5
Mobile Systems	5
Computational Intelligence	5
Agile Software Development	5
Web Applications	5
IT-Security Advanced Chapters	5
Text Analysis and Data Search	5
Selected Chapters Functional Programming	5
Knowledge Discovery in Databases	5
3D Content Creation	5
Interactive Systems	5
Image Processing I	5
Image Processing II	5
Media Production	5
Virtual and Augmented Environments	5
Service-oriented Networks	5
Human Machine Interaction	5
Metamodeling Platforms for Application Development	5

Additional courses can be offered in the compulsory elective area by decision of the Faculty Council.

3) Within the framework of the European Credit Transfer System (ECTS), each student is credited with credit points for the successfully completed modules within the curriculum in accordance with paragraph 1, which document the relative effort for each module regardless of its assessment. On the basis of the credit points awarded, the aim is to simplify the transferability and recognition of achievements, particularly those completed at universities outside the scope of the Basic Law. The transferability and recognition of the grades obtained therein is governed by §16 of the examination regulations (ger. Prüfungsordnung) for the *Applied Computer Science (Master of Science) degree programme*.

§ 8 Restriction of Participation in Courses

1) In principle, students at Schmalkalden University of Applied Sciences have the right to free access to all courses, provided that there are no restrictions due to the number of workstations available.
2) In tutorials and seminars, the number of participants should not exceed 20 persons. For computer-based practicals or projects, the maximum number of participants is determined by the number of workstations available.
3) If more students register for a course with restricted attendance than there are available workstations and they must provide proof of successful attendance in accordance with the study regulations, i.e. the course in question is a compulsory subject, parallel courses must be set up.
4) If more students register for a course with restricted attendance than there are places available and if this course is part of a compulsory elective module, organisational measures must be taken to enable some of the students to attend another compulsory elective module. Students are not entitled to attend a specific course of a compulsory elective module.
5) For computer-based practical courses or projects, the maximum number of participants may be limited by resolution of the Faculty Council.

§ 9 Commencement

1) These study regulations come into force on the first day of the month following their publication in the Schmalkalden University of Applied Sciences' official proclamation publication.
2) These study regulations apply for the first time to students commencing the Master's degree programme in Applied Computer Science (Master of Science) at Schmalkalden University of Applied Sciences in the winter semester 2024/25.

Schmalkalden, the December 12th, 2024

President of the University, Prof. Dr. Gundolf Baier