

**Study Regulations for the courses of study  
Bachelor and Master of Science/Computer Science**

**As of June 8th, 2006**

**Preamble**

Pursuant to §66 of Act No. 1433 on Saarland University (University Act – UG) about the reform of institutions of higher education and the changes to other university legal regulations (2<sup>nd</sup> university legal changes law) from June 23<sup>rd</sup>, 1999 (Official Gazette p. 982), the University of Saarland Faculty of Natural Sciences and Technology I has issued the following Study Regulations, which are hereby promulgated:

**I. General Provisions**

**§1 Aims of the courses of studies**

- (1) These study regulations specify the contents and structure of the Bachelor and Master of Science courses of studies in Computer Science, on the basis of the Examination Regulations for these courses of studies.
- (2) The courses of studies consist of courses belonging to the (compulsory and elective) categories: lectures, introductory seminars, seminars, lectures with tutorials, or practical trainings. In either of the courses of studies a final thesis is obligatory ( Bachelor's resp. Master's thesis). Furthermore, the Bachelor course of study contains courses of a minor subject which is arbitrary. Credits ("Credit Points") are assigned to each course, representing the course's scope, whereby one credit equals 30 hours of study (in course or self-study). At the end of each course there is a – mostly graded – exam. Each passed exam during the course of study is part of the final Bachelor's or Master's exam (studienbegleitende Prüfungsleistungen). Information as to structure, course excerpts and contents as well as form and length of the exams for every course can be taken from the course of study handbook. The complete Bachelor course of study comprises 180 credits. In the case of the recommended six semesters as a student, 30 credits are to be earned each semester. The complete Master course of study comprises 120 credits. In the case of the recommended four semesters as a student, 30 credits are to be earned each semester.
- (3) The Bachelor compulsory courses are held in German. The optional and elective courses in the final Bachelor year are generally held in English.
- (4) All Master courses are generally held in English.

**II. Bachelor Course of Study**

**§2 Courses**

- (1) The Bachelor course of study contains courses covering 168 credits, as well as the Bachelor's thesis, covering 12 credits. The courses offered include the following:
  1. In the category of basic mathematics either (all required):
    - a) Mathematics for computer scientists 1.9 credits and
    - b) Mathematics for computer scientists 2.9 credits and
    - c) Mathematics for computer scientists 3.9 creditsor alternatively (only for mathematics minors, including the necessary credits for the minor, all required)
    - d) Analysis 1.9 credits and
    - e) Linear algebra 1.9 credits
    - f) Analysis 2.9 credits
    - g) Linear algebra 2.9 creditsas well as
    - h) Mathematics for computer scientists 3.9 creditsor
    - i) Another mathematics course-event with 9 credits.

Each of the course combinations is offered at least once a year.

2. In the category of basic computer science (all required):
  - a) Programming 1.9 credits
  - b) Programming 2.9 credits
  - c) System architecture, 9 credits
  - d) Essentials of computer science theory, 9 credits
  - e) Information systems, 6 credits
  - f) Essentials of algorithms and data structures, 6 credits
  - g) programming, 6 credits

Each of these lectures is offered at least once a year.

3. In the category of practical training (required):

> Software practical training, 9 credits

This practical training is offered at least once a year.
4. In the category of introductory seminars (electives):

> Introductory seminars about computer science topics, 5 credits

Introductory seminars are offered every semester.

5. In the category of seminars (electives):

> Seminars about computer science topics, 7 credits

Seminars are offered every semester.

6. In the category of lecture series (required):

> Lecture series about computer science perspectives, 2 credits

These are offered at least once a year.

7. In the category of Bachelor seminars (electives)

> Bachelor seminars about computer science topics, 9 credits

8. In the category of basic lectures (electives):

> Lectures according to §4.1.1

9. In the category of in-depth lectures (optional):

> Lectures according to §4.1.2

10. In the Category of minor courses

> Lectures, tutorials, seminars or practical training of an elected subject covering 18 credits.

Additional credits can be acquired by passing additional courses or by supervising a tutorial as a tutor. For supervising a tutorial, 4 credits are awarded for each tutorial.

- (2) The range of courses offered in the different course categories may be extended by additional courses for one or more semesters, which requires the approval of the examination board. These courses, as well as their weight in credits and their allocation to one or more of the course categories shall be announced before the start of each semester.

### §3 Plan of Study

- (1) Based on these conditions of studies, the Dean of the Faculty of Natural Science and Technology I issues a plan of study containing further information about form and extent of the courses, as well as recommendations concerning the advisable organization of the studies. This plan shall be published in appropriate form. The current range of courses available at a time in the different course categories shall be announced in the timetable of courses of each semester.

- (2) Attachment A contains examples of study plans for the Bachelor course of study with different minors.

### III. Master Course of Study

#### §4 Courses

- (1) The Master Course of study contains courses covering 90 credits, as well as a scientific thesis, the Master's thesis, covering 30 credits. The courses offered for the Master course of studies shall cover at least the following courses:

1. In the category of basic lectures (electives):

- a) Algorithms and data structures, 9 credits
- b) Artificial intelligence, 9 credits
- c) Automated reasoning, 9 credits
- d) Operating systems, 9 credits
- e) Compiler construction, 9 credits
- f) Complexity theory, 9 credits
- g) Computer algebra, 9 credits
- h) Computer architecture, 9 credits
- i) Computer graphics, 9 credits
- j) Cryptography, 9 credits
- k) Data base systems, 9 credits
- l) Data networks, 9 credits
- m) Geometric modeling, 9 credits
- n) Image processing and computer vision, 9 credits
- o) Information retrieval and data mining, 9 credits
- p) Introduction to computational logic, 9 credits
- q) Optimization, 9 credits
- r) Security, 9 credits
- s) Semantics, 9 credits
- t) Software engineering, 9 credits
- u) Verification, 9 credits

Each of these lectures is offered at least once every two years.

2. In the category of in-depth lectures (optional):

> In-depth lectures, each generally covering 9.6 or 4 credits

In-depth lectures are offered every semester.

3. In the category of Master's practical trainings (optional):

> Master's practical trainings, each typically covering 6 credits

Master's practical trainings are not offered on a regular basis.

4. In the category of Seminars (electives):

> Seminars on changing computer science topics, 7 credits

Seminars are offered every semester.

5. In the category of Master's seminars (electives):

Master seminars on changing computer science topics, 12 credits

Additional credits can be acquired by passing additional courses or by supervising a tutorial as a tutor. For supervising a tutorial, 4 credits are awarded for each tutorial.

- (2) The range of courses offered in the different course categories may be extended by additional courses for one or more semesters, which requires the approval of the examination board. These courses, as well as their weight in credits and their allocation to one or more of the course categories shall be announced before the start of each semester.

#### **§5 Plan of Study**

- (1) Based on these conditions of studies, the dean of the Faculty of Natural Science and Technology I issues a plan of study containing further information about form and extent of the courses, as well as recommendations concerning the advisable organization of the studies. This plan shall be published in appropriate form. The current range of courses available at a time in the different course categories shall be announced in the timetable of courses of each semester.
- (2) Attachment B contains examples of study plans for the Master course of study.

#### **IV. Concluding and Interim Regulations**

#### **§6 Becoming effective**

These study regulations for the courses of study Bachelor and Master of Science will become effective on the day after their publication in the official gazette of Saarland University.

Saarbrücken, \_\_\_\_\_, 200\_\_

The President of Saarland University  
Univ.-Prof. Dr. Margret Wintermantel

#### **Attachment A. Sample plan of study for the Bachelor's course of study**

1	Programming 1 (9)	Perspectives (2)	Mathematics 1 (9)	Minor (6)	26
2	Programming 2 (9)	System Architecture (9)	Mathematics 2 (9)	Minor (6)	33
3	Practical Training Software (9)*	Computer Science Theory (9)	Mathematics 3 (9)	Algorithms (6)	33
4	Introductory seminar (5)	Information systems (6)	Concurrent Programming (6)	Minor (6) Language Course (3)	26
5	Seminar (7)	Basic Lecture (9)	Basis Lecture (9)	Tutor (4)	29
6	Bachelor Seminar (9)	Final Thesis (12)	In-Depth Lecture (6)	In-Depth Lecture (6)	33
	Credits Total				180

(\* ) to be completed during the semester break

First semester:

- Lecture Programming 1.9 credits
- Lecture Series Perspectives of Computer Science, 2 credits
- Lecture Mathematics for Computer Scientists, 1.9 credits
- Course(s) in Minor, 6 credits

Second semester:

- Lecture Programming 2.9 credits
- Lecture System Architecture, 9 credits
- Lecture Mathematics for Computer Scientists, 2.9 credits
- Course(s) in Minor, 6 credits

Third semester:

- Practical Training on Software, 9 credits
- Lecture Essentials of Computer Science Theory, 9 credits
- Lecture Mathematics for Computer Scientists 3.9 credits
- Lecture Essentials of Algorithms and Data Structures, 6 credits

Fourth semester:

- Introductory Seminar, 5 credits
- Lecture Information Systems, 6 credits
- Lecture Concurrent Programming, 6 credits
- Course(s) in Minor, 6 credits
- Language Course, 3 credits

Fifth semester:

- Seminar, 7 credits
- Basic Lecture, 9 credits
- Basic Lecture, 9 credits
- Work as a Tutor or Special Lecturer, 4 credits

Sixth semester:

- Bachelor Seminar, 9 credits
- Final Thesis, 12 credits
- In-Depth Lecture 6 credits
- In-Depth Lecture 6 credits

## §2 Bachelor with a Minor in Mathematics

A sample study schedule designed for six semesters with mathematics as minor subject is built up as follows:

1	Programming 1 (9)	Perspectives (2)	Linear Algebra (9)	Analysis 1 (9)	29
2	Programming 2 (9)	System Architecture (9)	Linear Algebra (9)	Analysis 2 (9)	36
3	Practical Training Software (9)*	Computer Science Theory (9)	Algorithms (6)	Mathematics 3 (9)	33
4	Introductory seminar (5)	Information systems (6)	Concurrent Programming (6)	Basic Lecture (9) Language Course (3)	29
5	Seminar (7)	Basic Lecture (9)	Basic Lecture (9)	Tutor (4)	29
6	Bachelor Seminar (9)	Final Thesis (12)		Language class (3)	24
	Credits Total				180

(\* ) to be completed during the semester break

First semester:

- Lecture Programming 1.9 credits
- Lecture Series Perspectives of Computer Science and its Application, 2 credits
- Lecture Linear Algebra, 1.9 credits
- Lecture Analysis 1.9 credits

Second semester:

- Lecture Programming 2.9 credits
- Lecture System Architecture, 9 credits

- Lecture Linear Algebra, 2.9 credits
- Lecture Analysis 2.9 credits

Third semester:

- Practical Training on Software, 9 credits
- Lecture Essentials of Computer Science Theory, 9 credits
- Lecture Mathematics for Computer Scientists 3.9 credits
- Lecture Essentials of Algorithms and Data Structures, 6 credits

Fourth semester:

- Introductory Seminar, 5 credits
- Lecture Information Systems, 6 credits
- Lecture Concurrent Programming, 6 credits
- Basic Lecture, 9 credits
- Language Course, 3 credits

Fifth semester:

- Seminar, 7 credits
- Basic Lecture, 9 credits
- Basic Lecture, 9 credits
- Work as a Tutor or Special Lecturer, 4 credits

Sixth semester:

- Bachelor Seminar, 9 credits
- Final Thesis, 12 credits
- Language Course, 3 credits

A sample Master study schedule designed for four semesters is built up as follows:

7	Basic Lecture (9)	Basic Lecture (9)	Seminar (7)	Tutor (4)	29
8	Basic Lecture (9)	Basic/In-Depth (9)	In-Depth (6)	In-Depth (6)	30
9	Master Seminar (12)	Seminar (7)	In-Depth (6)	In-Depth (6)	31
10	Final Thesis (30)				30
	Credits Total				120

Seventh semester:

- Basic Lecture, 9 credits
- Basic Lecture, 9 credits
- Seminar, seven credits
- Work as a Tutor or Special Lecturer (4)

Eighth semester:

- Basic Lecture, 9 credits
- Basic or In-Depth Lecture, 9 credits
- In-Depth Lecture, 6 credits
- In-Depth Lecture, 6 points

Ninth semester:

- Master Seminar, 12 credits
- Seminar, 7 credits
- In-Depth Lecture, 6 credits
- In-Depth Lecture, 6 credits

Tenth semester:

- Final Thesis (Master's Thesis), 30 credits

