Examination Regulations (Rules) of the Faculty of Engineering at Kiel University for students of the Bachelor’s and Master’s degree programmes in Computer Science and Business Information Technology, as well as parts of degree programmes in Computer Science within the scope of the double-subject Bachelor’s and Master’s degrees leading to a Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), Master of Arts (M.A.), Master of Science (M.Sc.) and Master of Education (M.Ed.) - 2021

(Computer Science and Business Information Technology Degree-Specific Examination Regulations - 2021)
of 15 July 2021

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Based on § 52 (1) Sentence 1 of the Schleswig-Holstein Higher Education Act (HSG) of 5 February 2016 (GVOBl. Schl.-H. p. 39), most recently amended of the Act 13 December 2020 (GVOBl. Schl.-H., p. 2), after a resolution was passed by the Faculty Convention of the Faculty of Engineering of 24 June 2021, the following Rules were issued:

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Section 1 General regulations

§ 1 Scope of application

(1) In conjunction with the Examination Procedure Regulations of Kiel University for students of Bachelor’s and Master’s Degree Programmes (PVO), these degree-specific examination regulations apply to the 1-subject Bachelor’s and Master’s degree programmes in Computer Science and Business Information Technology. In addition, and in conjunction with the Examination Procedure Regulations (PVO) and Kiel University's Joint Examination Regulations for students of 2-subject Bachelor's and Master's degree programmes (2-Subject Examination Regulations), they also regulate studies in partial degree programmes in Computer Science within the scope of 2-subject Bachelor's and Master's degree programmes as well as for export modules of the Institute of Computer Science to other courses of study at Kiel University.

(2) They apply to each module that is part of one of the degree programmes regulated in these examination regulations and for which no other degree-specific examination regulations apply as well as export modules of the Institute of Computer Science.

§ 2 Examination Boards

Two Examination Boards are formed in accordance with the provisions in the Examination Procedure Regulations (PVO) in order to organise the examinations and the allocated tasks:

(1) The Examination Board for Computer Science is responsible for the 1-subject Bachelor’s and Master’s degree programmes in Computer Science, as well as for examinations for modules from the Department of Computer Science which are part of these Computer Science degree programmes or purely exported modules. These are the modules in accordance with Annexes 1.1, 1.3 and 1.4.

(2) The Examination Board for Business Information Technology is responsible for the Bachelor’s and Master’s degree programmes in Business Information Technology, as well as for examinations for modules from the Department of Computer Science which are part of these Business Information Technology degree programmes in accordance with Annex 1.2, but are not part of Computer Science degree programmes. One member of the Examination Board for Business Information Technology should be a member of the Faculty of Business, Economics and Social Sciences.

The Examination Office for Computer Science and Business Information Technology manages the day-to-day business of both Examination Boards.

§ 3 Modules

(1) A (partial) degree programme consists of compulsory modules and individual compulsory elective sections which have certain compulsory elective modules allocated to them. Each compulsory elective section has a minimum and possibly also a maximum number of ECTS credit points. The compulsory and compulsory elective modules for the degree programmes regulated in these examination regulations are set out in Annex 1. The compulsory elective modules of an area that can be completed in a semester are announced by the Institute of Computer Science in an appropriate manner at least six weeks before the start of the course.

(2) For every (partial) degree programme, examinations must be passed
   1. for all compulsory modules,
   2. in every compulsory elective section, for modules worth at least the minimum number of ECTS credit points and
   3. with an overall number of ECTS credit points to be obtained in the (partial) degree programmes.
(3) Compulsory elective sections can be combined. In this case, an additional minimum and/or maximum number of ECTS credit points is specified and modules from the combined section must be passed which are worth at least the respective minimum number of ECTS credit points.

(4) The responsible Examination Board makes updates to compulsory elective sections; the lecturer who will teach the module and the degree programme coordinator will be consulted before a new module is introduced.

(5) Compulsory elective modules that have already been used for a Bachelor’s degree cannot be used again for the completion of a Master’s degree.

§ 4 Examinations and examination prerequisites

(1) The examinations to be completed for the compulsory and compulsory elective modules regulated in these examination regulations are listed in Annex 1. Detailed information on examinations will be suitably announced at the start of each module.

(2) The student may select an oral examination for each last possible examination attempt in a compulsory module for which a written examination is the type of examination.

(3) Additional academic achievements gained during a module can have a positive impact on the result of a written examination. This is only permitted if it is possible to pass the examination without the additional academic achievements and if the best grade can also only be obtained without the additional academic achievements. Individual details will be announced at the start of each module.

(4) In seminars, students are to demonstrate that they are able to work independently in a field of computer science or business information technology, present it in a written format and convey it within the framework of a presentation.

(5) Admission to examinations can also be made dependent on the performance of other prerequisites. Possible preliminary examinations are the completion of homework (also programming tasks), showing calculations in exercise hours, small presentations, tests also as online quiz, preparation of homework or portfolios. The preliminary examinations to be taken in each case are listed in Annex 1.

(6) Evidence of examination prerequisites in accordance with (5) does not need to be provided again for resits. Positive academic achievements in accordance with (3) may only be taken into account for the two examinations offered directly after the module is completed.

(7) For seminars, the software projects, the data science project, project modules, Master’s projects, project groups and research projects, there is no opportunity to resit while completing the module at that time. These modules will be offered every semester, so that it is possible to resit in the following semester.

(8) The practical exercises of the project modules marked as compulsory attendance in the appendix require regular participation for admission to the examination. Regular attendance in this sense is to be assumed if all course dates have been attended in full. If course dates were missed in whole or in part for reasons of § 52 (4) HSG, the person responsible for the module can, upon application of the student, in justified exceptional cases, determine a substitute performance for the missed course dates or the missed parts thereof, provided that no more than 20% of the duration of the respective attendance course was missed. The reasons for missing the course must be proven immediately, in the case of illness by means of a medical certificate.

(9) The concluding project is not a module and may only be repeated once if failed.

§ 5 Teaching and examination languages

(1) For each module, one of the two languages German or English is determined as the teaching and examination language.
Compulsory modules in Bachelor’s degree programmes are predominantly offered in German. Individual modules are also offered in English. These especially include the following modules:

1. Computer Networks
2. Operating Systems
3. Database Systems
4. Data Science

These modules are designed to give students an introduction to English language modules. Therefore, homework as well as answers in the oral and written module examinations may also be submitted in German.

In the Master’s degree programme in Computer Science, an English-language offer is made in accordance with these examination regulations; German-language modules may be offered in addition.

§ 6

Mobility windows

A semester abroad is recommended during the fifth semester for students on Bachelor’s degree programmes. A semester abroad is recommended during the second or third semester for students on Master’s degree programmes. As a support measure, students carrying out a stay abroad in the suggested semester will be offered further examination options for the respective following semester, in addition to the compulsory modules to be completed during the semester abroad. For students of the 2-subject programmes, the recommendation applies in each case only to the part of the subject computer science and not for the part of the other subject and the profile.

A learning agreement with the Examination Board should be made before the start of the stay abroad regarding recognition of examinations which are planned during a stay abroad.

§ 7

Missing examinations and admission to modules in the 1-subject Bachelor’s degree programmes

(4) A student is missing a module in a semester if he or she has not yet passed it and the module is intended for a programme schedule that is earlier than his/her current semester (see the respective annex for the subject). Minor subject modules and compulsory elective modules are excluded from this.

(5) If a student of the 1-subject Bachelor’s degree programme Computer Science or Business Information Technology is missing modules, he or she must attend these as a priority, insofar as they are offered in the current semester. In this case, he or she may attend modules worth a maximum of 35 ECTS credit points and complete examinations for them. Here, priority must be given to modules (especially missing modules) from an earlier semester according to the curriculum in the respective annex to the subject. Participation in examinations for modules that were taken and not missing is only permitted if the registrations for all missing modules in the same examination period are present or the missing modules have been passed in the meantime.

(6) The Examination Board may approve exceptions to the rules in (2) in justified exceptional cases at the student’s request.

§ 8

Form of submission of theses

Bachelor’s and Master’s theses are to be submitted to the Examination Office on time in two written copies and in a digital form which complies with the regulations of the examination regulations.
The Bachelor's thesis, concluding project and final presentation in 1-subject Bachelor's degree programmes

(1) Only students who have achieved at least 130 ECTS credit points in their Bachelor's degree programmes will be admitted to a Bachelor's thesis.

(2) Bachelor's theses can be carried out in the form of an individual paper or a concluding project. The results are presented in a written paper and a final presentation in German or in English.

(3) In the concluding project, comprehensive issues are addressed by a group, whereby the supervisor must ensure that the issue is divided into parts in a transparent and balanced way. The student's individual share of the work should be worth at least seven ECTS credit points.

(4) The final presentation should present the results of the Bachelor's thesis and last approximately 30 minutes. This is followed by a brief discussion. Members of the Department of Computer Science can be part of the audience in the final presentation if the candidate does not object to this in the application for admission to the Bachelor's thesis.

(5) The Bachelor's thesis is completed in parallel to studies from the start of the lecture period until the end of the respective semester. The application for admission to the Bachelor's thesis must be made in writing to the Examination Office for Computer Science and Business Information Technology within the first two months of the semester, stating the name of the supervisor. The deadline for submitting the Bachelor's thesis and carrying out the final presentation is the last working day (Monday to Friday) of the semester. If a student participates in the concluding project, the individual topics are specified by the supervisor two months before the end of the semester at the latest. When carrying out an individual Bachelor’s thesis, the supervisor specifies the topic within the first two months of the semester. The specification of the topic is to be recorded on file at the Examination Office for both cases.

(6) The grade for the Bachelor's thesis takes into account the student's processing of the problem, the written paper and the final presentation including the subsequent discussion. In the case of a concluding project, the grading will also consider the involvement in the project phase. The assessment must be announced at the latest 4 weeks after submission of the Bachelor's thesis.

(7) Students of the 1-subject Bachelor's degree programmes may withdraw from a registered Bachelor's thesis once. This is possible within the first six weeks of the topic being issued for an individual Bachelor's thesis, and within the first six weeks of the project phase for a concluding project.

(8) If an individual Bachelor's thesis or the concluding project is graded 5.0, they may be repeated once, also in the other form. The repeated thesis must be completed during the semester following the failed attempt. If no application is received within this time, a topic will be issued by the examination board.

§ 10

Calculation of the overall grade in Bachelor's degree programmes

(1) The overall grade in 1-subject Bachelor's degree programmes is calculated from the arithmetic average of the module grades weighted with ECTS credit points and the grade for the Bachelor's thesis. The grades for the foundation modules of the respective degree programme (see § 16 or § 19, structure of curriculum) will only be counted as half of their ECTS credit points.

(2) If the Bachelor's degree is completed within the standard period of study of six semesters, the worst examination grades including the grade for the Bachelor's thesis amounting to 18 ECTS shall not be taken into account for the calculation of the overall grade. Here, all examinations must actually have been completed within the six semesters, i.e. by 30 September (or by 31 March in exceptional cases). If achievements are recognised that were obtained before the start of the degree programme, the student makes an agreement
with the Examination Board at the start of his/her studies which regulates the number of achievements he or she must complete by which time, so that the degree can be regarded as equivalent to a degree in the standard period of study. Here, an average of 30 ECTS credit points per semester are to be expected. For all deadlines, the regulations on compensation for disadvantages according to the Examination Procedure Regulations are applicable accordingly.

§ 10a
Calculating the subject grade in the 2-subject partial degree programmes

(1) The subject grade for the partial degree programmes in computer science is calculated as the arithmetic mean of all module grades, weighted according to the ECTS workload.

(2) If the Bachelor's degree is completed within the standard period of study of six semesters, the worst examination grades including the grade for the Bachelor's thesis amounting to seven ECTS shall not be taken into account for the calculation of the overall grade. Here, all examinations must actually have been completed within the six semesters, i.e. by 30 September (or by 31 March in exceptional cases). If achievements are recognised that were obtained before the start of the degree programme, the student makes an agreement with the Examination Board at the start of his/her Bachelor’s degree which regulates which achievements he or she must complete by which time, so that the degree can be regarded as equivalent to a degree in the standard period of study. Here, an average of 30 ECTS credit points per semester are to be expected. For all deadlines, the regulations on compensation for disadvantages according to the Examination Procedure Regulations are applicable accordingly.

§ 11
Master's thesis and final presentation in the 1-subject Master's degree programmes in Computer Science and Business Information Technology

(1) Only those who have achieved at least 80 credit points in the 1 -subject Master's programme are admitted to a Master's thesis.

(2) The topic of the Master's thesis is determined by the supervising university teacher. The choice of task must allow for the Master's thesis to be completed within six months. The topic is issued by the Chair of the Examination Board and must be recorded. The period for completing the Master's thesis is six months. Taking into account § 8, the earliest submission date is after months. An extension shall not be longer than half of the preparation period. § 11 (4) of the Examination Procedure Regulations (PVO) applies for all other purposes.

(3) Students convey the results of their Master's thesis in a presentation lasting 30 to 45 minutes. The presentation is to be conducted in the same language in which the Master's thesis was written. This is followed by a brief discussion. The presentation is to be held within the preparation period, but at the earliest two months before the end of this period. Members of the Department of Computer Science can be part of the audience in the final presentation if the candidate does not object to this in the application for admission to the Master's thesis or the public is not prohibited because of the special nature of the subject.

(4) The grade for the Master's thesis takes into account the written paper, the student's processing of the problem as well as the final presentation including the subsequent discussion.

(5) Students may return the topic of the Master's thesis once within the first two months of the preparation period.
(6) If a Master's thesis is graded 5.0, it may be repeated once. The registration for a repeat attempt at the Master's thesis must be done at the latest three months after the announcement that the first Master's thesis has not been passed. If registration is not done within this time, the Examination Board will issue a topic.

(7) If the repeated Master's thesis is graded 5.0, the student has irrevocably failed the Master's examination in Computer Science.

§ 12
Bachelor's and Master's thesis in the 2-subject degree programmes in Computer Science

According to the 2-subject examination regulations, Bachelor's and Master's theses can also be done in the subject Computer Science. In this case, the results are presented in a written paper and as part of a final presentation. With regard to the language, the same regulations apply as those specified in § 9 and § 11 for the 1-subject degree programmes.
Section 2 Special provisions for the 1-subject degree programme in Computer Science leading to a Bachelor of Science degree

§ 13
Aim of the degree programme, purpose of the examination

The aim of this degree programme is to convey sound knowledge and skills in computer science. This should initially prepare graduates for work in industry, administration or the service sector, as well as provide the foundations for scientific work in computer science. The Bachelor’s examination tests whether the targets of the degree programme have been achieved and determines whether the student has mastered the foundations and methods of the subject and its practical application.

§ 14
Academic title

The student is awarded the academic title of Bachelor of Science (B.Sc.) by the Faculty of Engineering if he or she has passed the Bachelor’s examination.

§ 15
Academic year

The degree programme can only be started in a winter semester. If creditable achievements are available, enrolment in a higher subject semester is possible, in the winter semester only in an odd subject semester and in the summer semester only in an even subject semester.

§ 16
Structure of curriculum

(1) The standard period of study is six semesters and encompasses 180 ECTS credit points and approximately 120 weekly 45-minute teaching units for the duration of one semester of about 12 weeks (Semesterwochenstunden - SWS).

(2) The Bachelor’s degree programme in Computer Science (see Annex 2 for the programme schedule, see Annex 1.1 for modules with examinations) is made up of the following sections:

1. Foundation modules (compulsory, BSc-Inf-G) worth 52 ECTS credit points:
   - InfElInf-01a: Introduction to computer science (8 ECTS)
   - Inf-CompSys: Computer systems (8 ECTS)
   - Inf-Math-A: Mathematics for computer science A (8 ECTS), in accordance with Annex 1.4
   - InfEAlg-01a: Introduction to algorithmics (7 ECTS)
   - InfProgOO-01a: Object-oriented programming (6 ECTS)
   - InfCN-01a: Computer networks (7 ECTS)
   - Inf-Math-B: Mathematics for computer science B (8 ECTS), in accordance with Annex 1.4

2. Advanced modules (compulsory, BSc-Inf-A) worth 63 ECTS credit points:
   - infDP-01a: Declarative programming (7 ECTS)
   - infOS-01a: Operating systems (7 ECTS)
   - infBL-01a: Calculations and logic (8 ECTS)
   - Inf-Math-C: Mathematics for computer science C (8 ECTS), in accordance with Annex 1.4
   - infDB-01a: Database systems (5 ECTS)
   - infST-01a: Software engineering (7 ECTS)
   - infDaSci-01a: Data science (5 LP)
   - Inf-SP: Software project (6 ECTS) or inf-DSProj-01a: data science project (6 ECTS)
   - infAAK-01a: Analysis of algorithms and complexity (8 ECTS)
   - infEthik-01a: Ethics in computer science (2 ECTS)

3. Compulsory elective modules in computer science (BSc-Inf-WP) worth 26 to 31 ECTS credit points:
Further information can be found in Annex 1.1. The modules are usually made up of a lecture course with an accompanying practical exercise. If the software project or the data science project was selected in the advanced modules, the other project can also be included as a compulsory elective module.

Up to 5 ECTS credit points can also be earned in this area through extracurricular modules. The modules of the Key Skills Centre are particularly suitable here. Within the scope of available capacities, other modules from the CAU's range can also be selected. Language courses that do not go beyond the level of the upper secondary school or concern the mother tongue as well as modules with informatics or business informatics content do not belong to this area.

4. Seminar module in computer science (BSc-Inf-Sem) worth 7 ECTS credit points, in accordance with Annex 1.1.

5. Bachelor’s thesis, individual or in a concluding project, worth 12 ECTS credit points in accordance with Section 9.

6. Minor subject worth 15 to 20 ECTS credit points:

Students select a minor subject in which they must complete modules worth 15 to 20 ECTS credit points. Annex 3 lists detailed descriptions of the minor subjects in Business, Electrical Engineering, Mathematics, Law and Economics. Other minor subjects may be agreed in consultation with the Examination Board of the chosen subject and the Examination Board for Computer Science.

The scope of the minor subject can vary between 15 and 20 ECTS credit points, depending on the department offering the course. The sum of the compulsory elective modules in computer science and the modules in the minor subject must be at least 43 in order to achieve the 180 ECTS credit points required for the Bachelor's degree.

If Mathematics is chosen as a minor subject, the modules Inf-Math-A: Mathematics for computer science A, Inf-Math-B: Mathematics for computer science B and Inf-Math-C: Mathematics for computer science C are omitted. Mathematics modules worth 46 ECTS credit points in accordance with Annex 3 must be completed. Accordingly, compulsory elective modules in computer science (BSc-Inf-WP) worth 29 ECTS credit points must be completed.

Section 3 Special provisions for the 1-subject degree programme in Business Information Technology leading to a Bachelor of Science degree

§ 17

Aim of the degree programme, purpose of the examination

The aim of this degree programme is to convey sound knowledge and skills in business information technology. This should initially prepare graduates for work in industry, administration or the service sector, as well as provide the foundations for scientific work in business information technology. The Bachelor’s examination tests the targets of the degree programme and determines whether the student has mastered the foundations and methods of the subject and its practical applications.

§ 18

Academic title

The student is awarded the academic title of Bachelor of Science (B.Sc.) by the Faculty of Engineering if he or she has passed the Bachelor’s examination.

§ 19

Academic year

The degree programme can only be started in a winter semester. If creditable achievements are available, enrolment in a higher subject semester is possible, in the winter semester only in an odd subject semester and in the summer semester only in an even subject semester.
§ 20
Structure of curriculum

(1) The standard period of study is three years and encompasses 180 ECTS credit points and approximately 120 weekly 45-minute teaching units for the duration of one semester of about 12 weeks (Semesterwochenstunden - SWS).

(2) The Bachelor's degree programme in Business Information Technology (see Annex 4 for the programme schedule, see Annexes 1.1 and 1.2 for modules with examinations) is made up of the following sections:

1. Foundation modules (compulsory, BSc-WInf-G) worth 46 ECTS credit points:
   - infEWInf-01a: Introduction to business information technology (7 ECTS)
   - infEInf-01a: Introduction to computer science (8 ECTS)
   - Inf-InfRecht: IT law (2 ECTS)
   - Inf-Math-A: Mathematics for computer science A (8 ECTS), in accordance with Annex 1.4
   - infEAlg-01a: Introduction to algorithmics (7 ECTS)
   - infProgOO-01a: Object-oriented programming (6 ECTS)
   - Inf-Math-B: Mathematics for computer science B (8 ECTS), in accordance with Annex 1.4

2. Advanced modules (compulsory, BSc-WInf-A) worth 49 ECTS credit points:
   - VWL-STATWX: Statistical methods (10 ECTS)
   - infST-01a: Software engineering (7 ECTS)
   - infEthik-01a: Ethics in computer science (2 ECTS)
   - Inf-SP: Software project (6 ECTS) or inf-DSProj-01a: data science project (6 ECTS)
   - infDB-01a: Database systems (5 ECTS)
   - Inf-DatSchutz: Data protection (2 ECTS)

3. Specialization modules (BSc-WInf-WP-WInf und BSc-WInf-WP-Inf) worth 37 ECTS credit points. Further information can be found in Annex 1.2. These modules usually consist of a lecture with an accompanying exercise.

   When choosing modules, students must select at least 23 ECTS credit points from the area of compulsory elective modules BSc-WInf-WP-WInf and at least 7 ECTS credit points from the area of compulsory elective modules BSc-WInf-WP-Inf.

   The advanced module Data Science Project can only be selected if the module infDaSci-01a: Data Science was previously passed as an elective module of the area BSc-WInf-WP-WInf.

   Up to 5 ECTS credit points can also be earned in this area through extracurricular modules. The modules of the Key Skills Centre are particularly suitable here. Within the scope of available capacities, other modules from the CAU's range can also be selected. Language courses that do not go beyond the level of the upper secondary school or concern the mother tongue as well as modules with informatics or business informatics content do not belong to this area.

4. one Business information technology project (BSc-WInf-Proj) worth 6 ECTS credit points

5. one Seminar module in business information technology (BSc-WInf-Sem) worth 7 ECTS credit points, in accordance with Annex 1.2.

6. Business or Economics offers worth 40 ECTS credit points:

   Business or Economics offers are alternatives. By selecting the first module that does not appear in both versions, the students define which version they choose. They can change to the other option at any time. For the Bachelor's degree, all modules from one of the two options must be successfully completed.

   a. Business offers, in accordance with Annex 6:
      - aa. BWL-EinfBWL: Introduction to business (5 ECTS)
      - bb. BWL-ERW: External accounting (5 ECTS)
      - cc. BWL-ER: Decision accounting (5 ECTS)
      - dd. VWL-EVWL: Introduction to economics (10 ECTS)
      - ee. BWL-InnoMProz: Innovation management: Processes and methods (5 ECTS)
ff. Two modules from the business compulsory elective section (10 ECTS together):
   - BWL-Ent: Decision Analysis I (5 ECTS)
   - BWL-RDM: Decision Analysis II (5 ECTS)
   - BWL-ProdLog: Production and logistics (5 ECTS)
   - BWL-Mark: Marketing (5 ECTS)
   - BWL-Ctrlg: Controlling (5 ECTS)
   - BWL-IntRL: International accounting
   - bwlGKapmarkttheo-01a: Fundamentals of capital market theory (5 ECTS)
   - BWL-Untbest: Business taxation (5 ECTS)
   - BWL-OR: Operations research (5 ECTS)
   - BWL-OrgGest: Organisational design (5 ECTS)
   - BWL-ProjMgmt: Project management (5 ECTS)
   - BWL-PersFhrg: Leadership in Organizations (5 ECTS)
   - bwlHRM-01a: Human Resource Management (5 ECTS)
   - BWL-ENTRE: Fundamentals of entrepreneurship (5 ECTS)

If a compulsory elective module has been successfully completed, it may not be replaced by another compulsory elective module (for example to improve grades).

b. Economics offers, in accordance with Annex 6:
   aa. BWL-EinfBWL: Introduction to business (5 ECTS)
   bb. VWL-EVWL: Introduction to economics (10 ECTS)
   cc. VWLvwlmikro1-01a: Basic principles in theory of microeconomics I (5 ECTS)
   dd. VWLvwlmikro2-01a: Basic principles in theory of microeconomics II (5 ECTS)
   ee. VWLvwlmakro1-01a: Basic principles in theory of macroeconomics I (5 ECTS)
   ff. VWLvwlmakro2-01a: Basic principles in theory of macroeconomics I (5 ECTS)
   gg. Compulsory elective module for economics (5 ECTS)

7. Bachelor's thesis, individual or in a concluding project, worth 12 ECTS credit points in accordance with § 9.

Section 4 Special provisions for the partial degree programme in Computer Science in the 2-subject Bachelor's degree programme leading to a Bachelor of Science or Bachelor of Arts degree

§ 21
Objective of the degree programme

Graduates have obtained a thorough understanding of the fundamental theories, principles, and methods in computer science as well as basic technological knowledge. They can successfully work in computer-related professional fields in which computer-based tasks or tasks which link computer science with another subject must be solved on a scientific basis. This includes understanding issues in context, generating suitable models, inferring short- and medium-term objectives, and producing and implementing solutions.

§ 22
Academic year

The degree programme can only be started in a winter semester. If creditable achievements are available, enrolment in a higher subject semester is possible, in the winter semester only in an odd subject semester and in the summer semester only in an even subject semester.

§ 23
Structure of curriculum
(1) The standard period of study is six semesters and encompasses 70 ECTS credit points and approximately 50 weekly 45-minute teaching units for the duration of one semester of about 12 weeks (Semesterwochenstunden - SWS).

(2) The partial degree programme in Computer Science is made up of the following compulsory modules (see Annex 5 for the programme schedule, see Annex 1 for modules with examinations) worth 70 ECTS credit points all together:

- infEInf-01a: Introduction to computer science (8 ECTS)
- Inf-CompSys: Computer systems (8 ECTS)
- infMathA2F-01a: Mathematics for computer science A (2-sub) (6 ECTS)
  For students who study mathematics as their second subject, this module is omitted. They replace it with the module infOS-01a: Operating Systems (7 ECTS) or elective modules of the 2-subject Master's programme (2F-MEd-Inf-WP beziehungsweise 2F-MA-Inf-WP, siehe Anlage 1.1) worth at least 6 ECTS.
- infEAlg-01a: Introduction to algorithmics (7 ECTS)
- infProgOO-01a: Object-oriented programming (6 ECTS)
- infBL2F-01a: Calculations and logic (2-sub) (8 ECTS)
- infEthik-01a: Ethics in computer science (2 ECTS)
- infST-01a: Software engineering (7 ECTS)
- infDB-01a: Database systems (5 ECTS)
- infSP2F-01a: Software project (2-sub) (6 ECTS)
- infCN-01a: Computer networks (7 ECTS)

Section 5 Special provisions for the 1-subject degree programme in Computer Science leading to a Master of Science degree

§ 24
Aim of the degree programme, purpose of the examination

The Master of Science (M.Sc.) degree programme in Computer Science is based on the preceding Bachelor's degree programme in Computer Science, comparable with Kiel's Bachelor's programme. It is designed to teach students advanced computer science skills and methods, expand and solidify their academic knowledge and lay the foundations for the development of young researchers. This includes enabling students to master the principles and methods of computer science for independent work and forming the basis of ongoing and critical discussion of developments in the subject. The selection of teaching content takes developments in the subject of computer science into account.

The Master's transcript and Master's certificate document a professional and academic qualification obtained on completion of the Computer Science degree programme. These documents prove that the holder grasps the contexts of the subject, is able to apply the academic methods and knowledge independently, and has thoroughly acquired the necessary in-depth specialist knowledge of the subject for the transition to professional practice.

§ 25
Academic title

The student is awarded the academic title of Master of Science (M.Sc.) by the Faculty of Engineering if he or she has passed the Master's examination.

§ 26
Admission to the Master's degree programme

Admission to the degree programme in Computer Science leading to a Master of Science degree requires that the applicant holds a recognised, qualified Bachelor of Science degree in Computer Science or a Bachelor’s degree in a related discipline. Admission can only be granted if
1. the same learning objectives are achieved with this degree as are achieved with the Bachelor of Science in Computer Science from Kiel University, or
2. aptitude has been determined according to the Rules to determine sufficient aptitude for the 1-subject Master's degree programme in Computer Science.

§ 27
Academic year
The degree programme can be started in a winter or summer semester.

§ 28
Structure of curriculum

(1) The standard period of study for the Master's degree programme is four semesters. The degree programme encompasses 120 ECTS credit points and covers around 80 weekly 45-minute teaching units for the duration of one semester of about 12 weeks (Semesterwochenstunden - SWS).

(2) The degree programme is made up of the following:

1. Compulsory elective modules computer science (MSc-Inf-WP) worth 60 to 65 ECTS credit points:
   Students must obtain at least 12 ECTS credit points in theoretical computer science (MSc-Inf-Theo). The Examination Board makes decisions on the allocation of modules of this area after consultation with the lecturers for the area, and makes them known in an appropriate manner.

2. Master's seminar in computer science (MSc-Inf-Sem) worth 5 ECTS credit points:
   The aim of a Master's seminar is to produce an independent analysis of the scientific themes of computer science, write scientific texts and present scientific findings.

3. Master's project in computer science (MSc-Inf-Proj) worth 10 ECTS credit points:
   The aim of a Master's project is to produce an intensive and practical analysis of a current computer science topic. Its content should focus, in particular, on the fields of problem analysis, specification and implementation. The Master's project should normally be a group project so that aspects of group and project work are learnt in addition to specialist content. The results of the Master's project will be conveyed within the framework of a presentation.

4. As an additional option in the compulsory elective section computer science (MSc-Inf-WP), students can choose one of the following modules to the extent of a maximum of 10 LP:
   Research project (involvement in a working group) worth up to 10 ECTS credit points
   Project group worth up to 20 ECTS credit points.
   a. another Master's seminar worth 5 ECTS,
   b. another Master's project worth 10 ECTS,
   c. an extension of one Master's project to a project group worth up to 20 ECTS,
   d. one research project (involvement in a working group) worth up to 10 ECTS.

5. Optional section from another field worth 10 to 15 ECTS credit points:
   In this section, students may select modules offered at Kiel University that are not also available in another area of this degree programme. Language courses that do not go above upper secondary school level or modules which concern the mother language and modules with computer science or business information technology content do not belong to this section.

6. In addition to a free choice of any module students may also select a coordinated minor subject in the optional section from another field. The minor subject may either be consecutive in character, continuing the same minor subject taken from the Bachelor's degree programme, or it may be a completely new minor subject. The Module Handbook lists possible minor subjects together with the modules to be completed.
Other minor subjects may be agreed in consultation with the Examination Board of the chosen subject and the Examination Board for Computer Science. The minor subject should be decided prior to allocation of the first module of the minor subject. The minor subject is stated on the certificate.

7. The total of 75 ECTS credit points must be obtained in the compulsory elective section of computer science and the optional section from another field.

8. Master's thesis worth 30 ECTS credit points:
   Students produce a Master's thesis to complete their Master's degree programme. Details are provided in § 13.

§ 29
Calculation of the final grade

The overall grade is calculated from the arithmetic average of the module grades weighted with ECTS credit points, excluding grades from optional subjects outside the field of computer science. Ungraded modules, such as the research project, are also not included in the final grade.
Section 6 Special provisions for the 1-subject degree programme in Business Information Technology leading to a Master of Science degree

§ 30
Aim of the degree programme, purpose of the examination

The Master of Science (M.Sc.) degree programme in Business Information Technology is based on the preceding Bachelor's degree programme in Business Information Technology. The aim of the consecutive degree programme is to convey sound knowledge and skills in business information technology. This prepares graduates for work in industry, administration or the service sector, as well as for scientific work in business information technology. This includes enabling students to master the principles and methods of business information technology for independent work and forming the basis of ongoing and critical discussion of developments in the subject. The selection of teaching content takes developments in the subject of business information technology into account.

The Master's transcript and Master's certificate document a professional and academic qualification obtained on completion of the Business Information Technology degree programme. These documents prove that the holder grasps the contexts of the subject, is able to apply the academic methods and knowledge independently, and has acquired the necessary in-depth specialist knowledge of the subject for the transition to professional practice.

§ 31
Academic title

The student is awarded the academic title of Master of Science (M.Sc.) by the Faculty of Engineering if he or she has passed the Master's examination.

§ 32
Admission to the Master’s degree programme

Admission to the Master of Science degree programme in Business Information Technology is only permitted if the candidate has a recognised, eligible Bachelor’s degree that is comparable to the Bachelor of Science in Business Information Technology offered at Kiel University. Related Bachelor’s degrees (such as Computer Science with Business as a minor subject or an Economics and Business degree with Computer Science as a minor subject) can entitle a student to admission, if the modules that need to be made up do not exceed 30 ECTS credit points, under consideration of the modules from the Bachelor's degree programme which are to be recognised for the Master’s degree. The Chairperson of the Examination Board decides whether admission requirements have been met, and especially whether a proper qualification exists, on the basis of an individual assessment.

§ 33
Academic year

The degree programme may be started in a winter or a summer semester.

§ 34
Structure of curriculum

(1) The standard period of study for the Master’s degree programme in Business Information Technology is four semesters. The degree programme encompasses 120 ECTS credit points and covers around 80 weekly 45-minute teaching units (Semesterwochenstunden - SWS).

(2) Compulsory elective modules worth 90 ECTS credit points in total must be successfully completed in the consecutive Master’s degree programme in Business Information Technology. Here, modules in accordance with Annex 1 must be completed in the following sections with the corresponding number of ECTS credit points:
   1. Compulsory elective modules in business information technology (MSc-WInf-WP-WInf) worth at least 28 ECTS
   2. Compulsory elective modules in information technology (MSc-WInf-WP-Inf) worth at least 20 ECTS
3. a Master's seminar in business information technology (MSc-WInf-Sem) worth at least 5 ECTS
4. a Master's project in business information technology (MSc-WInf-Proj) worth at least 10 ECTS (see Annex 1.2 for modules)
5. Economics and Business Studies worth
   a. exactly 20 ECTS in the Business Studies version.
   b. 18 to 24 ECTS in the Economic Studies version.
   These two study options are offered as alternatives and are described in Annex 6. Commitment to one of the two variants is not necessary. For the Master’s degree, one of the options must be successfully completed.
6. As an additional option in the compulsory elective area (MSc-WInf-WP-WInf), students additionally can choose a maximum of one of the following of modules:
   a. one research project (involvement in a working group) worth up to 10 ECTS,
   b. as an extension of a Master's project, a project group worth up to 20 ECTS,
   c. a second Master's seminar,
   d. a second Master’s project.
7. The written Master’s thesis marks the conclusion of the Master’s degree programme. It encompasses 30 ECTS credit points. Details are provided in § 13.

§ 35
Calculation of the overall grade
The overall grade is calculated from the arithmetic average of the module grades weighted with ECTS credit points. Ungraded modules, such as the research project, are not included in the final grade.

Section 7 Special provisions for the partial degree programme in Computer Science in the 2-subject Master’s degree programme leading to a Master of Education or Master of Science (Business Education) degree

§ 36
Objective of the degree programme
Graduates possess a solid knowledge of computer science itself and are familiar with its approaches to thinking and working. The contents of the degree programme are oriented towards the requirements for lessons at grammar schools, secondary schools and vocational schools, but also enable graduates to independently improve their skills continuously and to adapt to a changing work environment. Graduates are also skilled in comprehensive computer science lesson planning. They can use this specialist knowledge for planning, conducting and evaluating lessons in computer science.

§ 37
Academic year
The degree programme may be started in a winter or a summer semester.

§ 38
Structure of curriculum
(1) The standard period of study is four semesters and encompasses 33 ECTS credit points and approximately 25 weekly 45-minute teaching units for the duration of one semester of about 12 weeks (Semesterwochenstunden - SWS).
(2) The partial degree programme (see Annex 7 for the programme schedule, see Annex 1 for modules with examinations) is made up of the following modules:
   1. Inf-FD-IUG: Designing computer science lessons (3 ECTS),
   2. infMLSU-01a: Machine learning in school and teaching as a subject module with subject didactic preparation (6 ECTS),
   3. Inf-FD-LeLeV: Teaching and learning in computer science - consolidation (5 ECTS),
4. Compulsory elective modules computer science (2F-MEd-Inf-WP) worth at least 19 ECTS credit points, according to the module database of the Institute of Computer Science.

Section 8 Special provisions for the partial degree programme in Computer Science in the 2-subject Master's degree programme leading to a Master of Arts or Master of Science degree

§ 39
Objective of the degree programme

Graduates have acquired a critical, in-depth understanding of a specific area of computer science, encompassing its theories, principles, and methods, as well as the corresponding technological knowledge. They can successfully work in computer-related professional fields in which computer-based tasks or tasks which link computer science with another subject must be solved on a scientific basis. This includes understanding more complex issues in the corresponding subject area in context, generating suitable models, inferring short- and medium-term objectives, and producing and implementing solutions.

§ 40
Academic year

The degree programme may be started in a winter or a summer semester.

§ 41
Structure of curriculum

(1) The standard period of study is four semesters and encompasses 45 ECTS credit points and approximately 29 weekly 45-minute teaching units for the duration of one semester (Semesterwochenstunden - SWS).

(2) The partial degree programme (see Annex 8 for the programme schedule, see Annex 1 for modules with examinations) is made up of the following:

1. Modules of the compulsory elective area in computer science (2F-MA-Inf-WP) worth 28 LP, according to Annex 1.1. These modules usually consist of a lecture with an accompanying exercise,

2. a Master's seminar (2F-MA-Inf-Sem) in computer science worth 7 ECTS,

3. a Master's project in computer science (2F-MA-Proj) worth 10 ECTS credit points. The aim of the Master's project is to produce an intensive and practical analysis of a current computer science topic. Its content should focus, in particular, on the fields of problem analysis, specification and implementation. The Master's project should normally be a group project so that aspects of group and project work are learnt in addition to specialist content. The results of the Master's project shall be conveyed within the framework of a presentation.

Section 9 Final provisions

§ 42
Transitional provisions

(1) Students who began their studies before the winter semester 2021/22 can complete their studies according to the subject examination regulations valid for them at the time until the end of the winter semester 2024/25. Students who have not completed their studies by this time will automatically switch to the new subject examination regulations.

(2) Upon application, students studying according to the examination regulations that have ceased to be in force according to § 43 (2) may change to these examination regulations.
(3) Module examinations that have been completed and passed in full when these examination regulations come into force remain valid.

(4) If a student has completed and passed independent partial performances of a module examination, these examinations are credited. The examination board decides, taking into account the learning objectives of the module and the purpose of the examination, which further examinations must be taken to complete the respective module.

(5) Failed attempts made in examinations prior to the entry into force of these examination regulations shall be counted towards the number of attempts under the new examination regulations, unless credit is prohibited by the structure of the new module examination.

(6) The examination board shall decide on hardship cases for which the student is not responsible upon application.

§ 43  
Entry into force and expiry

(1) These Rules come into force on 1 October 2021. They apply to all students of Computer Science and Business Informatics who commence their studies from the winter semester 2021/22.

(2) At the same time, the Examination Regulations (rules) of the Faculty of Technology of Kiel University for students of the Bachelor's and Master's degree programmes in Computer Science and Business Information Systems as well as the partial degree programmes in Computer Science within the scope of the two-subject Bachelor's and Master's degree programmes with the degrees Bachelor of Arts (B. A.), Bachelor of Science (B.Sc.), Master of Arts (M.A.), Master of Science (M.Sc.) and Master of Education (M.Ed.) - 2019 (Fachprüfungsordnung Informatik und Wirtschaftsinformatik - 2019) of 12 July 2019 (NBl. HS MBWK Schl.- H. p. 48) shall cease to be in force.

The University Board at Kiel University granted its approval in accordance with § 52 (1) 1 of the Schleswig-Holstein Higher Education Act in its letter dated 14 July 2021.

Kiel, 15 July 2021

Prof. Dr. Lorenz Kienle  
Dean of the Faculty of Engineering  
at Kiel University

Article 2 of the amended Examination Regulations of 15 February 2023  
This rules enter into force on the day after their announcement.
Annexes

Annex 1: Modules from the degree programmes at the Department of Computer Science

The following list shows all the modules at the Department of Computer Science which are used in a degree programme at the department or exported to other degree programmes. The module lists are organised as follows:

Module code: Module title (list of the degree programmes the module is used in)¹
Number of ECTS, duration, types of course with number of hours
Type of examination, graded/not graded (prior examination requirements: if an examination requirement is needed, it will be specified here)

The following abbreviations are used in the list of degree programmes:
BSc-Inf = 1-subject Bachelor’s degree programme in Computer Science
BSc-WInf = 1-subject Bachelor’s degree programme in Business Information Technology
2F-BSc = 2-subject Bachelor’s degree programme in Computer Science
MSc-Inf = 1-subject Master’s degree programme in Computer Science
MSc-WInf = 1-subject Master’s degree programme in Business Information Technology
E-Technik = Bachelor’s degree programme in Electrical Engineering and Information Technology
WIng-ETIT = Bachelor’s degree programme in Electrical Engineering, Information Technology and Business Management
2F-MEd = 2-subject Master of Education
2F-MWPäd = 2-subject Master of Science Business Education
2F-MA/MSc = 2-subject Master of Arts/Science
Export = important exported modules for other departments at the university. More and other modules are also exported for the optional sections.

The following abbreviations are used for these types of course:
V = Vorlesung/Lecture, Ü= Übung/exercise, PÜ = Praktische Übung/practical exercise, S = Seminar

1.1 List of modules for Computer Science

infElInf-01a: Introduction to Computer Sciences (BSc-Inf, BSc-WInf, 2F-BSc)
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: homework, programming tasks)

infEAlg-01a: Introduction to algorithmics (BSc-Inf, BSc-WInf, 2F-BSc)
7 ECTS, 1 semester, V3 PÜ2
Written examination, graded (examination requirements: homework, programming tasks)

infProgOO-01a: Object-oriented programming (BSc-Inf, BSc-WInf, 2F-BSc)
6 ECTS, 1 semester, V2 PÜ2
Written examination, graded (examination requirements: homework, programming tasks)

infCN-01a: Computer Networks (BSc-Inf, BSc-WInf, 2F-BSc)
7 ECTS, 1 semester, V3 Ü2
Written examination, graded (examination requirements: homework, tests)

Inf-CompSys: Computer systems (BSc-Inf, BSc-WInf, 2F-BSc, Export (E-Technik, Wing-ETIT))
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: homework, tests)

infOS-01a: Operating Systems (BSc-Inf, BSc-WInf)
7 ECTS, 1 semester, V3 Ü2
Written examination, graded (examination requirements: possibly homework)

**infDP-01a: Declarative programming** (BSc-Inf)
7 ECTS, 1 semester, V3 Ü2
Written examination, graded (examination requirements: homework)

**infBL-01a: Calculations and logic** (BSc-Inf)
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: homework)

**infBL2F-01a: Calculations and logic** (2sub) (2FBSc)
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: homework)

**infAAK-01a: Analysis of algorithms and complexity** (BSc-Inf)
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: homework)

**infDaSci-01a: Data Science** (BSc-Inf)
5 ECTS, 1 semester, V3 U1
Written examination, graded (examination requirements: possibly homework)

**infDB-01a: Database Systems** (BSc-Inf, BSc-WInf, 2F-BSc, Export)
5 ECTS, 1 semester, V3 U1
Written examination, graded (examination requirements: possibly homework)

**Inf-SP: Software project** (BSc-Inf, BSc-WInf)
6 ECTS, 1 semester, PÜ3S1
Regular approval of the software development tasks as well as the pro-seminar presentation and a final presentation of the created software system, graded (preliminary examination: participation in the project).
Attendance is compulsory in this module, as the focus is on teamwork and the group is to develop software together.

**inf-DSProj-01a: Data Science Projekt** (BSc-Inf, BSc-WInf)
6 ECTS, 1 semester, PÜ4
Regular approval of the milestones and a final presentation of the created data science system, graded (preliminary examination: participation in the project).
Attendance is compulsory in this module, as the focus is on teamwork and the group is to develop software together.

**Inf-SP2F-01a: Softwareprojekt** (2sub) (2F-BSc)
5 ECTS, 1 semester, PÜ3
Regular approval of the software development tasks as well as the pro-seminar presentation and a final presentation of the created software system, graded (preliminary examination: participation in the project).
Attendance is compulsory in this module, as the focus is on teamwork and the group is to develop software together.

**Inf-ST-01a: Software engineering** (BSc-Inf, BSc-WInf, 2F-BSc)
7 ECTS, 1 semester, V3 Ü2
Written examination, graded (examination requirements: homework)

**infEthik-01a: Ethics in computer science** (BSc-Inf, BSc-WInf, 2F-BSc)
2 ECTS, 1 semester, V1 U1
Learning portfolio, graded (examination requirements: test)
Compulsory elective modules in computer science (BSc-Inf, MSc-Inf, 2F-MEd, 2F-MWPäd, 2F-MA/MSc)
5-10 ECTS, 1 semester, V2-4 Ü1-2 PÜ0-2 S0-2
Oral examination (also as a group examination), written examination or portfolio (also on a research task), graded (possibly examination requirements, possibly bonus points)
Constantly changing offer which can be found in the module database of the Institute of Computer Science. Examinations and required examination requirements are specified there. The modules are additionally divided into the areas BSc-Inf-WP, MSc-Inf-WP, MSc-Inf-Theo, MSc-Inf-Syssoft, 2F-MEd-WP and 2F-MA-WP. The exact division can be found in the module database for the respective degree programme.

Bachelor seminars in computer science (BSc-Inf)
7 ECTS, 2 semesters, V1 Ü1 S2
Seminar presentation (presentation or several short presentations) and preparation of a portfolio, graded (examination requirements: Homework in the context of the course Scientific Work)
Constantly changing offer of seminar topics which can be found in the module database of the Institute of Computer Science.

Master seminars in computer science (MSc-Inf)
5 ECTS, 1 semester, S2
Seminar presentation (presentation or several short presentations) and preparation of a portfolio, graded
Constantly changing offer of seminar topics which can be found in the module database of the Institute of Computer Science.

Master seminars in computer science (2sub) (2F-MA/MSc)
7 ECTS, 2 semesters, V1 Ü1 S2
Seminar presentation (presentation or several short presentations) and preparation of a portfolio, graded (examination requirements: Homework in the context of the course Scientific Work)
Constantly changing offer of seminar topics which can be found in the module database of the Institute of Computer Science.

Master projects in computer science (MSc-Inf, 2F-MA/MSc)
10 ECTS, 1 semester, PÜ4
Participation in the project and project presentation, graded
Constantly changing offer of project topics which can be found in the module database of the Institute of Computer Science.

Research project (MSc-Inf)
1-10 ECTS, 1-2 semesters, no courses
Research work and preparation of a project report and diary, ungraded.
Participation in a research group of the institute, no specific module, as the research work is agreed upon individually.

Project group (MSc-Inf)
15-20 ECTS, 2 semesters, PÜ6-8
Participation in the project and project presentation, graded
Variant of the Master's project which lasts two semesters. Constantly changing offer of project topics which can be found in the module database of the Institute of Computer Science.

Inf-I2-2F: Computer science I (INF) (Export)
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: homework)
Inf-InfNat: Computer science for the natural sciences (Export (Physics))
6 ECTS, 1 semester, V3 Ü2
Written examination, graded (examination requirements: homework)
Export module, especially for the BSc in Physics

Inf-ProgTech: Programming techniques (Export (Physics))
4 ECTS, 1 semester, V2 Ü1
Written examination, graded (examination requirements: homework)
Export module, especially for the BSc in Physics

infDaSciNat-01a: Data Science für die Naturwissenschaften (Export (Physik))
8 ECTS, 1 semester, V3 Ü2 PÜ2
Written examination and project presentation, graded (examination requirements: homework)
Export module, especially for the BSc in Physics

infInf1P-01a: Informatik für die Wirtschaftswissenschaften (Export (WiSo))
10 ECTS, 2 semester, V4 Ü2 PÜ2
Written examination, graded (examination requirements: homework), Testat

1.2 List of modules for Business Information Technology

infEWInf-01a: Introduction to Computer Science (BSc-WInf)
7 ECTS, 1 semester, V3 Ü2
Written examination, graded (examination requirements: homework)

Inf-InfRecht: IT law (BSc-WInf)
2 ECTS, 1 semester, V2
Written examination, graded

Inf-DatSchutz: Data protection (BSc-WInf)
2 ECTS, 1 semester, V2
Written examination, graded

Compulsory elective modules BSc-WInf-WP-WInf (BSc-WInf)
5-8 ECTS, 1 semester, V2-4 Ü0-2 PÜ0-3
Oral examination (also as a group examination) or written examination, graded (possibly examination requirements: homework)
Constantly changing offer which can be found in the module database of the Institute of Computer Science. Examinations and examination requirements are specified there.

Compulsory elective modules BSc-WInf-WP-Inf (BSc-WInf)
6-8 ECTS, 1 semester, V2-4 Ü1-2 PÜ0-2
Oral examination (also as a group examination) or written examination, graded (possibly examination requirements: homework)
Constantly changing offer which can be found in the module database of the Institute of Computer Science. Examinations and examination requirements are specified there.

Bachelor project in Business Information Technology (BSc-WInf)
6 ECTS, 1 semester, PÜ3 S1
Regular approval of the project work as well as final presentation and documentation of the project result, graded (preliminary examination: participation in the project).

Bachelor seminar in Business Information Technology (BSc-Inf)
7 ECTS, 2 semesters, V1 Ü1 S2
Seminar presentation (presentation or several short presentations) and preparation of a portfolio, graded (examination requirements: Homework in the context of the course Scientific Work)
Constantly changing offer of seminar topics which can be found in the module database of the Institute of Computer Science.

**Compulsory elective modules in Business Information Technology (MSc-WInf)**
6-8 ECTS, 1 semester, V2-4 Ü0-2 PÜ0-3
Oral examination (also as a group examination) or written examination, graded (possibly examination requirements: homework)
Constantly changing offer which can be found in the module database of the Institute of Computer Science. Examinations and examination requirements are specified there.

**Master seminars in Business Information Technology (MSc-WInf)**
5 ECTS, 1 semester, S2
Seminar presentation (presentation or several short presentations) and preparation of a portfolio, graded
Constantly changing offer of seminar topics which can be found in the module database of the Institute of Computer Science.

**Master projects in Business Information Technology (MSc-WInf)**
10 ECTS, 1 semester, Ü1 PÜ4
Participation in the project and project presentation, possibly written project report, graded
Constantly changing offer of project topics which can be found in the module database of the Institute of Computer Science.

**Research project (MSc-WInf)**
1-10 ECTS, 1-2 semesters, no courses
Research work and preparation of a project report and diary, ungraded.
Participation in a research group of the institute, no specific module, as the research work is agreed upon individually.

**Project group (MSc-WInf)**
15-20 ECTS, 2 semesters, PÜ6-8
Participation in the project and project presentation, graded
Variant of the Master's project which lasts two semesters. Constantly changing offer of project topics which can be found in the module database of the Institute of Computer Science.

### 1.3 List of modules on education for Studies in Secondary Education (Profil Lehramt) for the 2-subject Bachelor's degree programme in Computer Science:

**Inf-FD-LeLeG: Teaching and learning in the subject computer science – Basics (2F-BSc Profil Lehramt/Wirtschaftspädagogik)**
3 ECTS, 1 semester, V1 S1
Portfolio, graded

**Inf-FD-DiPro: Didactics of programming (2F-BSc Profil Lehramt/Wirtschaftspädagogik)**
2,5 ECTS, 1 semester, S2
Portfolio, graded
1.4 List of modules on education for the 2-subject Master’s degree programme leading to a Master of Education or Master of Science (Business Education) degree:

**infMLSU-01a: Machine learning in schools and classrooms (2F-MEd, 2F-MWPäd)**
6 ECTS, 1 semester, V2 Ü1 S1
Examination discussion on the subject-related contents, elaboration on the subject-didactic contents, graded (possibly examination requirements: homework)

**Inf-FD-LeLeV: Subject didactics: Teaching and learning in computer science – specialisation (2F-MEd, 2F-MWPäd)**
5 ECTS, 1 semester, V1S2
Portfolio, graded

**Inf-FD-IUG: Subject didactics: Designing computer science lessons (2F-MED, 2F-MSc-WP)**
3 ECTS, 1 semester, PÜ2
Portfolio, graded

1.5 Imported modules from Mathematics, which are used as compulsory modules in degree programmes at the Department of Computer Science:

**Inf-Math-A: Mathematics for computer science A (BSc-Inf, BSc-WInf)**
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: possibly homework)

**Inf-Math-B: Mathematics for computer science B (BSc-Inf, BSc-WInf)**
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: homework)

**Inf-Math-C: Mathematics for computer science C (BSc-Inf)**
8 ECTS, 1 semester, V4 Ü2
Written examination, graded (examination requirements: homework, possibly demonstrating calculations)

**infMathA2F-01a: Mathematics for computer science A (2F) (2F-BSc)**
6 ECTS, 1 semester, V3 Ü2
Written examination, graded (examination requirements: homework)

1.6 Imported modules from Economics and Business, which are used as compulsory modules in degree programmes at the Department of Computer Science:

**BWL-EinfBWL: Introduction to business (BSc-WInf)**
5 ECTS, 1 semester, V2Ü1
Written examination, graded

**VWL-EVWL: Introduction to economics (BSc-WInf)**
10 ECTS, 1 semester, V4Ü2
Written examination, graded

**BWL-ER: Decision accounting (BSc-WInf)**
5 ECTS, 1 semester, V2Ü1
Written examination, graded

**BWL-ERW: External accounting (BSc-WInf)**
5 ECTS, 1 semester, V2Ü1
Written examination, graded
For information purposes only, the German original is binding.

VWLwvwMikro1-01a: Fundamentals of microeconomic theory I (BSc-WInf)
5 ECTS, 1 semester, V2Ü1-2
Written examination, graded

VWLwvwMikro2-01a: Fundamentals of microeconomic theory II (BSc-WInf)
5 ECTS, 1 semester, V2Ü1-2
Written examination, graded

VWLwvwMakro1-01a: Fundamentals of macroeconomic theory I (BSc-WInf)
5 ECTS, 1 semester, V2Ü1-2
Written examination, graded

VWLwvwMakro2-01a: Fundamentals of macroeconomic theory II (BSc-WInf)
5 ECTS, 1 semester, V2Ü1-2
Written examination, graded

BWL-InnoMProz: Innovation management: Processes and methods (BSc-WInf)
5 ECTS, 1 semester, V2Ü1
Written examination, graded

VWL-STATWX: Statistical Methods (Preparatory Course Business Studies – Studienkolleg BWL) (BSc-WInf)
10 ECTS, 1 semester, V4Ü2PÜ1
Written examination, graded

2 Some of these modules are not compulsory modules because they only appear in one of the two economics and business versions or modules can only be selected in the versions.
### Annex 2: Programme schedule for the Bachelor's degree programme in Computer Science, minor subject not mathematics

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Module code</th>
<th>Module name</th>
<th>SWS</th>
<th>Type of examination</th>
<th>(C/CE)</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>infEInf-01a</td>
<td>Introduction to computer science</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>Inf-CompSys</td>
<td>Computer systems</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>Inf-MathA</td>
<td>Mathematics for computer science A</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>infEAAlg-01a</td>
<td>Introduction to algorithmics</td>
<td>V3PÜ2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>infCN-01a</td>
<td>Computer networks</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>infProgOO-01a</td>
<td>Object-oriented programming</td>
<td>V2PÜ2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Inf-MathB</td>
<td>Mathematics for computer science B</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
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<tr>
<td>3</td>
<td>infDP-01a</td>
<td>Declarative programming</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>infOS-01a</td>
<td>Operating systems</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>infBL-01a</td>
<td>Calculations and logic</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
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<td>Inf-MathC</td>
<td>Mathematics for computer science C</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Inf-ST</td>
<td>Software engineering</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>infDB-01a</td>
<td>Database systems</td>
<td>V3Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
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<tr>
<td>4</td>
<td>infAAK-01a</td>
<td>Analysis of algorithms and complexity</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Bachelor’s seminar (part: scientific work)</td>
<td>V1Ü1</td>
<td></td>
<td>Compulsory</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>infEthik-01a</td>
<td>Ethics in computer science</td>
<td>V1Ü1</td>
<td>Portfolio</td>
<td>Compulsory</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Software project or compulsory elective module</td>
<td>PÜ4 oder V3Ü1</td>
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<tr>
<td>5 ¹</td>
<td>infDaSci-01a</td>
<td>Date science</td>
<td>V3Ü1</td>
<td>Written examination</td>
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</tr>
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<td></td>
<td>Data science project or compulsory elective module</td>
<td>PÜ4 oder V3Ü1</td>
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<td>6</td>
</tr>
<tr>
<td>5 ¹</td>
<td></td>
<td>Bachelor’s seminar (2nd part)</td>
<td>S2</td>
<td>Term paper and presentation</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>5 ¹</td>
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<td>Compulsory elective module in computer science²</td>
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<td>1 - 6</td>
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<td>Minor subject module²</td>
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<td>Compulsory elective</td>
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<td>6</td>
<td></td>
<td>Bachelor’s thesis (individual or project)</td>
<td>Preparation, presentation</td>
<td></td>
<td>Compulsory</td>
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</table>

The following abbreviations are used for these types of course:
- **V** = Vorlesung/Lecture, **Ü** = Übung/exercise, **PÜ** = Praktische Übung/practical exercise, **S** = Seminar
- ¹The 5th semester can be used as a mobility window. For more details, see § 6.
- ²In order to achieve a total of 180 ECTS for the Bachelor's degree, 46 ECTS must be achieved in the compulsory elective area.
Programme schedule for the Bachelor's degree programme in Computer Science, minor subject mathematics

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Module code</th>
<th>Module name</th>
<th>SWS</th>
<th>Type of examination</th>
<th>(C/CE)</th>
<th>ECTS</th>
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<tbody>
<tr>
<td>1</td>
<td>infEInf-01a</td>
<td>Introduction to computer science</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
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<td>Inf-CompSys</td>
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<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
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<td>Linear Algebra I</td>
<td>V4Ü2</td>
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<td>Key skills Compulsory elective Computer science</td>
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<td>V3PÜ2</td>
<td>Written examination</td>
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<td>Computer Networks</td>
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<td>2</td>
<td>infProgOO-01a</td>
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<td>V2PÜ2</td>
<td>Written examination</td>
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<td>math-linalg2.1</td>
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<td></td>
<td>Bachelor's seminar (part: scientific work)</td>
<td>V1Ü1</td>
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<td>Compulsory</td>
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<td>3</td>
<td>infDP-01a</td>
<td>Declarative programming</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
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<tr>
<td>3</td>
<td>infOS-01a</td>
<td>Operating Systems</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
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<tr>
<td>3</td>
<td>infBL-01a</td>
<td>Calculations and logic</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
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<tr>
<td>3</td>
<td>math-an1.1</td>
<td>Analysis I</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
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<td></td>
<td>Data science project or compulsory elective module</td>
<td>PU3S1 or V3Ü1</td>
<td>Written examination</td>
<td>Compulsory elective</td>
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<td>4</td>
<td>infIST-01a</td>
<td>Software engineering</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
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<tr>
<td>4</td>
<td>infDB-01a</td>
<td>Database Systems</td>
<td>V3Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
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<tr>
<td>4</td>
<td></td>
<td>Bachelor's seminar (part 2)</td>
<td>S2</td>
<td>Term paper and presentation</td>
<td>Compulsory</td>
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<td>4</td>
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<td>Analysis II</td>
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<td>Written examination</td>
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<td>Written examination</td>
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<tr>
<td>5¹</td>
<td></td>
<td>Data science project or compulsory elective module computer science²</td>
<td>PÜ4 or V3Ü1</td>
<td>Written examination</td>
<td>Compulsory elective</td>
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<tr>
<td>5¹</td>
<td>infEthik-01a</td>
<td>Ethics in computer science</td>
<td>V1Ü1</td>
<td>Portfolio</td>
<td>Compulsory</td>
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<tr>
<td>5¹</td>
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<td>Compulsory elective module in computer science²</td>
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<td>Compulsory elective</td>
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<td>Compulsory elective module Minor sub Mathematics</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
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<tr>
<td>6</td>
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<td>Analysis of algorithms and complexity</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
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<tr>
<td>6</td>
<td></td>
<td>Compulsory elective module in computer science²</td>
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<td>Compulsory elective</td>
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<tr>
<td>6</td>
<td></td>
<td>Bachelor's thesis (individual or project)</td>
<td></td>
<td></td>
<td>Term paper and presentation</td>
<td>Compulsory</td>
</tr>
</tbody>
</table>

The following abbreviations are used for these types of course:
V = Vorlesung/Lecture, Ü= Übung/exercise, PÜ = Praktische Übung/practical exercise, S = Seminar
¹The 5th semester can be used as a mobility window. For more details, see § 6.
Annex 3: Study plans for selected minor subjects in the 1-subject Bachelor’s
degree programme in Computer Science

Business as a minor subject

The following 20 ECTS credit points must be obtained in Business as a minor subject:

1. BWL-EinfBWL: Introduction to business (5 ECTS)
2. BWL-ERW: External accounting (5 ECTS)
3. BWL-ER: Decision accounting (5 ECTS)
4. Compulsory elective section (5 ECTS) with one of the following modules:
   - BWL-Ent: Decision Analysis I (5 ECTS)
   - BWL-RDM: Decision Analysis II (5 ECTS)
   - BWL-ProdLog: Production and logistics (5 ECTS)
   - BWL-Mark: Marketing (5 ECTS)
   - bwlBusAnalytics-01a: Business Analytics (5 ECTS)
   - BWL-Ctrlg: Controlling (5 ECTS)
   - BWL-IntRL: International accounting
   - bwlGKapmarkttheo-01a: Fundamentals of capital market theory (5 ECTS)
   - BWL-Untbest: Business taxation
   - bwServiceScience-01a: Service Process Modeling (5 ECTS)
   - BWL-OR: Operations research (5 ECTS)
   - BWL-OrgGest: Organisational design (5 ECTS)
   - BWL-ProjMgmt: Project management (5 ECTS)
   - BWL-PersFhrg: Leadership in Organizations (5 ECTS)
   - bwlHRM-01a: Human Resource Management (5 ECTS)
   - BWL-ENTRE: Fundamentals of entrepreneurship (5 ECTS)
   - BWL-InnoMProz: Innovation management: Processes and methods (5 ECTS)

Electrical Engineering as a minor subject

The following 20 or 21 ECTS credit points must be obtained in Electrical Engineering as a
minor subject:

1. Fundamentals of electrical engineering I (7 ECTS)
2. Fundamentals of electrical engineering II (7 ECTS)
3. One of the following modules:
   - etit0008-01a: Theoretical basics of information technology (6 ECTS)
   - Electrical power technology (6 ECTS)
   - Signals and systems I (7 ECTS)
   - Fundamentals of circuit technology (7 ECTS)

If this results in more than 20 ECTS credit points, the extra credit point from the module with
the lowest mark will not be calculated towards the overall grade.

Mathematics as a minor subject

In Mathematics as a minor subject, the modules Mathematics for computer science A, B and
C are omitted. The following modules must be completed instead or as well:

- math-linalg1.1: Linear algebra I (8 ECTS)
- math-linalg2.1: Linear algebra II (8 ECTS)
- math-an1.1: Analysis I (8 ECTS)
- math-an2.1: Analysis II (8 ECTS)
- One additional module from the Bachelor’s degree programme in Mathematics worth 9 ECTS, such as math-num\_math: Introduction to numeric mathematics (9 ECTS)

**Law as a minor subject**

The following 18 ECTS credit points must be obtained in Law as a minor subject:

- BWL-JuOeff: Introduction to public law (5 ECTS)
- BWL-JuPriv: Private law (5 ECTS)
- Inf-InfRecht: IT law and data protection (4 ECTS)
- Inf-DatSchutz: Data protection (2 ECTS)
- Copyright law (4 ECTS)

The module Data Protection is omitted if an elective module is brought in to which the lecture Data Protection belongs. In this case, students only obtain 16 ECTS credit points for Law as a minor subject.

**Economics as a minor subject**

Students can choose between the following three versions with 20 ECTS credit points each in Economics as a minor subject:

**Version 1:**
1. VWL-EVWL: Introduction to economics (10 ECTS)
2. VWLwvlMikro1-01a: Basic principles of microeconomic theory I (5 ECTS)
3. and one module of
   a. VWLwvlMikro2-01a: Basic principles of microeconomic theory II (5 ECTS) or
   b. of the elective area "Microeconomics and Finance"

**Version 2:**
1. VWL-EVWL: Einführung in die Volkswirtschaftslehre (10 LP)
2. VWLwvlMakro1-01a: Grundzüge der makroökonomischen Theorie I (5 LP)
3. and one module of
   a. VWLwvlMikro2-01a: Basic principles of microeconomic theory II (5 ECTS) or
   b. of the elective area "Microeconomics and Labor Markets"

The modules of the respective elective areas can be found in the Module Handbook or the Degree Specific Examination Regulations of the Bachelor's degree Programme in Economics, Appendix, Section 5.

The Department of Computer Science lists additional minor subjects in the module database and websites.
Annex 4: Programme schedule for the 1-subject Bachelor’s degree programme in Business Information Technology without Business-/Economics modules

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Module code</th>
<th>Module name</th>
<th>SWS</th>
<th>Type of examination</th>
<th>C/CE</th>
<th>ECTS</th>
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<tbody>
<tr>
<td>1</td>
<td>infEWInf-01a</td>
<td>Introduction to business information technology</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>1</td>
<td>infEInf-01a</td>
<td>Introduction to computer science</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
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<tr>
<td>1</td>
<td>Inf-MathA</td>
<td>Mathematics for computer science A</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>Inf-InfRecht</td>
<td>IT law</td>
<td>V2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>infEAlg-01a</td>
<td>Introduction to algorithmics</td>
<td>V3PÜ2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>infProgOO-01a</td>
<td>Object-oriented programming</td>
<td>V2PÜ2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Inf-MathB</td>
<td>Mathematics for computer science B</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Elective module WInf/Inf</td>
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<td></td>
<td>Compulsory elective</td>
<td>5/10</td>
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<tr>
<td>3</td>
<td>VWL-STATWX</td>
<td>Preparatory Course Business Studies</td>
<td>V4Ü2PÜ1</td>
<td>Written examination</td>
<td>Compulsory</td>
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</tr>
<tr>
<td>3</td>
<td>Elective module WInf/Inf</td>
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<td>Compulsory elective</td>
<td>5/10</td>
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<td>4</td>
<td>Inf-ST</td>
<td>Software engineering</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>infDB-01a</td>
<td>Database systems</td>
<td>V3Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
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</tr>
<tr>
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<td>Elective modules WInf/Inf</td>
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<tr>
<td>5</td>
<td>infEthik-01a</td>
<td>Ethics in computer science</td>
<td>V1Ü1</td>
<td>Portfolio</td>
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<td>Project work, presentation</td>
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<td>Inf-SP or infDSProj-01a</td>
<td>Software project or Data</td>
<td>PÜ3S1/PÜ4²</td>
<td>Project work, presentation</td>
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<td>5²</td>
<td>Bachelor’s seminar (2nd part)</td>
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<td>Term paper and presentation</td>
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<td>Inf-DatSchutz</td>
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<td></td>
<td></td>
<td>Compulsory elective</td>
<td>10/11</td>
</tr>
<tr>
<td>6</td>
<td>Bachelor’s thesis (individual or project)</td>
<td>Preparation, presentation</td>
<td></td>
<td></td>
<td>Compulsory</td>
<td>12</td>
</tr>
</tbody>
</table>

The following abbreviations are used for these types of course:
V = Vorlesung/Lecture, Ü= Übung/exercise, PÜ = Praktische Übung/practical exercise, S = Seminar

¹ If students want to choose the data science project instead of the software project, they must have previously taken the data science module as a compulsory elective module in business information technology. In this case, the software project can be included as a second project in the compulsory elective section in computer science.
2 The 5th semester can be used as a mobility window. For more details, see § 6.

Additional modules in the programme schedule for the BSc in Business Information Technology in the business version:

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Module code</th>
<th>Module name</th>
<th>SWS</th>
<th>Type of examination</th>
<th>C/CE</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BWL-EinfBWL</td>
<td>Introduction to business</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Compulsory elective module in business</td>
<td>V2Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>VWL-EVWL</td>
<td>Introduction to economics</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>BWL-ERW</td>
<td>External accounting</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>BWL-ER</td>
<td>Decision accounting</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Compulsory elective module in business</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>BWL-InnoMProz</td>
<td>Innovation management: processes and methods</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
</tbody>
</table>

The following abbreviations are used for these types of course:
V = Vorlesung/Lecture, Ü= Übung/exercise, PÜ = Praktische Übung/practical exercise, S = Seminar

Additional modules in the programme schedule for the BSc in Business Information Technology in the economics version:

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Module code</th>
<th>Module name</th>
<th>SWS</th>
<th>Type of examination</th>
<th>C/CE</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BWL-EinfBWL</td>
<td>Introduction to business</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>VWL-EVWL</td>
<td>Introduction to economics</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>VWLvwlMikro 1-01a</td>
<td>Basic principles of microeconomic theory I</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>VWLvwlMakr 1-01a</td>
<td>Basic principles of macroeconomic theory I</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>VWLvwlMikro 2-01a</td>
<td>Basic principles of microeconomic theory II</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Compulsory elective module in economics</td>
<td>V2Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
</tbody>
</table>

The following abbreviations are used for these types of course:
V = Vorlesung/Lecture, Ü= Übung/exercise, PÜ = Praktische Übung/practical exercise, S = Seminar
### Annex 5: Programme schedule for the 2-subject Bachelor’s degree programme in Computer Science

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Module code</th>
<th>Module name</th>
<th>SWS</th>
<th>Type of examination</th>
<th>C/CE</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>infEInf-01a</td>
<td>Introduction to computer science</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>infMathA2F-01a</td>
<td>Mathematics for computer science A (2sub)¹</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>infEAlg-01a</td>
<td>Introduction to algorithmics</td>
<td>V3PÜ2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>infProgOO-01a</td>
<td>Object-oriented programming</td>
<td>V2PÜ2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>infBL-01a</td>
<td>Calculations and logic</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>InfEthik-01a</td>
<td>Ethics in computer science</td>
<td>V1Ü1</td>
<td>Portfolio</td>
<td>Compulsory</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Inf-ST</td>
<td>Software engineering</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>infDB-01a</td>
<td>Database systems</td>
<td>V3Ü1</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Inf-FD-LeLeG</td>
<td>Teaching and learning in the subject computer science – Basics (only profile LA/WiPäd)²</td>
<td>V1S1</td>
<td>Portfolio</td>
<td>Compulsory</td>
<td>3</td>
</tr>
<tr>
<td>5³</td>
<td>infSP2F-01a</td>
<td>Software project (2F)</td>
<td>PÜ3</td>
<td>Presentation</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>5³</td>
<td>Inf-CompSys</td>
<td>Computer systems</td>
<td>V4Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>8</td>
</tr>
<tr>
<td>5³</td>
<td>Inf-FD-DiPro</td>
<td>Didactics of programming (only profile LA/WiPäd)²</td>
<td>S2</td>
<td>Portfolio</td>
<td>Compulsory</td>
<td>2.5</td>
</tr>
<tr>
<td>6</td>
<td>infCN-01a</td>
<td>Computer networks</td>
<td>V3Ü2</td>
<td>Written examination</td>
<td>Compulsory</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Possibly Bachelor’s thesis in the subject computer science</td>
<td></td>
<td>Bachelor’s thesis, presentation</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

The following abbreviations are used for these types of course:

- V = Vorlesung/Lecture, Ü = Übung/exercise, PÜ = Praktische Übung/practical exercise, S = Seminar

¹ For students who study mathematics as their second subject, the module Mathematics for Computer Science A (2sub) (6 ECTS) is omitted. They can replace it with the module Operating Systems (7 ECTS) or an elective module of the 2-subject Master’s programme.

² These modules belong to the profile of Studies in Secondary Education (Gymnasium) (Lehramt) or vocational and business education (Wirtschaftspädagogik) and must be attended exclusively in this profile.

³ The 5th semester can be used as a mobility window. For more details, see § 6.
Annex 6: Economics and business versions in the 1-subject Master’s degree programme in Business Information Technology

Students can choose between the following two versions for the economics and business section:

1 Business offers
A total of 20 ECTS credit points must be completed. 15 ECTS credits must be completed from the special Business compulsory elective section (e.g. SBWL A). The selected SBWL is made up of 3 modules, whereby at least one lecture module (V+Ü) must be selected. Completing a research seminar is not absolutely necessary.

The remaining 5 ECTS credits in the compulsory elective section must be completed from a module which is not part of the selected SBWL A.

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Section</th>
<th>Module</th>
<th>SWS</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Special Business section A</td>
<td>SBWL A / 1</td>
<td>V2 + Ü1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SBWL A / 2</td>
<td>V2 + Ü1 or S2</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>SBWL A / 3</td>
<td>V2 + Ü1 or S2</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Compulsory elective section</td>
<td>Module from SBWL (not A)</td>
<td>V2 + Ü1 or S2</td>
<td>5</td>
</tr>
</tbody>
</table>

Explanations:
CE: compulsory elective, ECTS: ECTS credit points, V: Vorlesung / lecture, Ü: Übung / exercise, S: research seminar, SBWL: Spezielle Betriebswirtschaftslehre / special Business section

The following SBWL can be selected:
- Marketing
- Start-up and innovation management
- Technology management
- Supply chain management
- Organisation
- Staff and organisation
- Company taxation (only modules from the compulsory elective section)
- Service analytics

The associated modules can be found in Annex 2 from the FPO 2021 for the Master’s in Business.

The modules for the compulsory elective section may also only be chosen from this SBWL.
2 Economics offers

Economics as a minor subject that was already taken in the Bachelor's degree programme can be continued in the Master's degree programme. The students can choose between the following variants in this case:

1. variant, if Macro I was selected in the Bachelor's degree:
   a. VWLvwlMikro1-01a: Basic principles in theory of microeconomics I (5 ECTS)
   b. as well as two modules from:
      - VWLvwlMikro2-01a: Basic principles in theory of microeconomics II (5 ECTS)
      - or the optional section “Microeconomics and Public Finance”

2. variant, if Micro I was selected in the Bachelor's degree:
   a. VWLvwlMakro1-01a: Basic principles in theory of macroeconomics I (5 ECTS)
   b. as well as two modules from:
      - VWLvwlMakro2-01a: Basic principles in theory of macroeconomics II (5 ECTS)
      - or the optional section “Macroeconomics and Labour Markets”

3. variant:
   continuing the chosen section from the Bachelor's degree with a further two to three modules each from one of these optional sections:
   a. “Microeconomics and Public Finance”
   or
   b. “Macroeconomics and Labour Markets”

The modules from the optional sections can be found in the module handbook or the degree-specific examination regulations of the Bachelor's degree programme in Economics, Appendix, Part 5.
### Annex 7: Programme schedule for the 2-subject Master\'s degree programme (MEd and MSc in Business Education)

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Module code</th>
<th>Module name</th>
<th>SWS</th>
<th>Type of examination</th>
<th>C/CE</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Compulsory elective modules</td>
<td></td>
<td>Compulsory elective</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>2¹</td>
<td>infMLSU-01a</td>
<td>Machine learning in schools and classrooms</td>
<td>V2Ü1S1</td>
<td>Examination discussion/Term paper</td>
<td>Compulsory</td>
<td>6</td>
</tr>
<tr>
<td>2¹</td>
<td>Inf-FD-LeLeV</td>
<td>Subject didactics: Teaching and learning in computer science – specialisation</td>
<td>V1S2</td>
<td>Portfolio</td>
<td>Compulsory</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Inf-FD-IUG</td>
<td>Subject didactics: Designing computer science lessons</td>
<td>PÜ2</td>
<td>Portfolio</td>
<td>Compulsory</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Compulsory elective in computer science</td>
<td></td>
<td>Compulsory elective</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Possibly Master's thesis in the subject computer science</td>
<td></td>
<td>Paper, presentation</td>
<td></td>
<td>16/18²</td>
</tr>
</tbody>
</table>

The following abbreviations are used for these types of course:
V = Vorlesung/Lecture, Ü= Übung/exercise, PÜ = Praktische Übung/practical exercise, S = Seminar

¹ The second semester can be used as a mobility window. The requirements of the second subject, the profile and the comments from § 6 should be taken into account.
² In a degree programme leading to the Master of Education (secondary level teaching qualification), 18 ECTS and in the degree programme leading to the Master of Science (vocational and business education), 16 ECTS are awarded for the Master\'s thesis.

### Annex 8: Programme schedule for the 2-subject Master\'s degree programme Computer Science (MA and 2-subject MSc)

<table>
<thead>
<tr>
<th>Sem.</th>
<th>Module code</th>
<th>Module name</th>
<th>SWS</th>
<th>Type of examination</th>
<th>C/CE</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Compulsory elective modules in computer science</td>
<td></td>
<td>Compulsory elective</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Master's seminar (part: scientific work)</td>
<td>V1Ü1</td>
<td>Compulsory</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>2*</td>
<td>Master's seminar (part two)</td>
<td>S2</td>
<td>Term paper and presentation</td>
<td>Compulsory</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2*</td>
<td>Choice of module</td>
<td></td>
<td></td>
<td>Compulsory elective</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>3*</td>
<td>Choice of Master's project</td>
<td>PÜ4</td>
<td>Presentation incl. oral examination</td>
<td>Compulsory elective</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td>Choice of module</td>
<td></td>
<td></td>
<td>Compulsory elective</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Possibly Master's thesis in the subject computer science</td>
<td></td>
<td>Preparation, presentation</td>
<td></td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

The following abbreviations are used for these types of course:
V = Vorlesung/Lecture, Ü= Übung/exercise, PÜ = Praktische Übung/practical exercise, S = Seminar

* The second or third semester can be used as a mobility window. The requirements of the second subject and the comments from § 6 should be taken into account.