



Wintersemester 24/25

Module Guide

for the study of

Mathematics Optional for Teacher Training

valid in connection with the examination regulations BPO 2011/2013

Gemäß Prüfungsordnung zum Studienfach Mathematik im Zwei-Fächer-Bachelorstudium mit Lehramtsoption vom 06. Juli 2011 inklusive Änderungen und Berichtigungen.

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Musterstudienplan - Studienfach Mathematik im Bachelor

Lehramt an Gymnasien/Oberschulen Mathematik*

Die Bachelorarbeit wird hier im Studienverlaufsplan exemplarisch ausgewiesen. Studierende können jedoch wählen, ob sie die Bachelorarbeit in diesem oder in ihrem zweiten Fach schreiben wollen.

	Mathematik		Didaktik	Bachelorarbeit
1. Sem.	Lineare Algebra 1/2 18 CP			
2. Sem.		Geometrie 6 CP		
3. Sem.	Analysis 1/2 21 CP		Grundzüge der Mathematikdidaktik 6 CP	
4. Sem.				
5. Sem	Angewandte Mathematik 6 CP		Diagnostizieren und Fördern mit Praxisanteilen 6 CP	
6. Sem.	Stochastik 6 CP			Bachelorarbeit 12 CP

Credit Points (kurz: CP) geben den durchschnittlichen Arbeitsaufwand für eine Veranstaltung bzw. ein Modul an, wobei 1 CP = 30 Std.

* Gemäß geltender Prüfungsordnung genehmigt am 21.07.2011 (inkl. etwaiger Änderungsordnungen bzw. Berichtigungen)

Index by areas of study

1) Subject-Specific Didactics (12 CP)

Pflichtbereich im Umfang von 12 CP. Reihenfolge gemäß Studienverlaufsplan.

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2) Specialist Mathematics (72 CP)

Pflichtbereich im Umfang von 72 CP. Reihenfolge gemäß Studienverlaufsplan.

Bemerkung: Die Bachelorarbeit wird hier ausgewiesen. Studierende können jedoch wählen, ob sie die Bachelorarbeit in diesem oder in ihrem zweiten Fach schreiben wollen. Der Umfang der CP erhöht/reduziert sich dann jeweils um 12 CP.

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Module 03-MAT-BA-D1: Grundzüge der Mathematikdidaktik

Fundamentals of Mathematics Education

Assignment to areas of study:

- Subject-Specific Didactics

Content-related prior knowledge or skills:

none

Learning content:

Basic didactic mathematical knowledge of

- General education concepts for learning mathematics
- Basic learning theory and psychological approaches and their implications for subject-related diagnostics
- Didactically relevant results of empirical educational and teaching research within the subject
- Subject areas and standards of mathematics teaching
- Fundamental ideas and basic concepts of central mathematics didactic concepts
- Findings and concepts of didactic mathematics as well as concrete approaches to important learning situations (forming concepts, discovering and justifying connections, practicing, modeling, reflection and systematizing, checking performance, developing mathematical terminology, ...)
- Mathematics affiliated teaching/learning research (e.g. motivation, individual ideas and mistakes of students, dispositions, typical processes and hurdles in learning processes, structure and effects of learning environments)
- Social aspects of and influences on the design of mathematics lessons
- Dimensions of diversity in mathematics lessons (e.g. disabilities as defined by the Convention on the Rights of Persons with Disabilities, augmentative and alternative conditions such as language, social living conditions, cultural and religious orientations, gender as well as special gifts and talents)

Manifestation of basic knowledge using the example of a mathematical subject area

(e.g. the didactic of functions):

- Basic concepts, fundamental ideas of the subject area
- Characteristic subject specific argumentation methods, problem-solving strategies and patterns of mathematical interpretation
- Paradigmatic examples
- Typical learner perspectives in the subject area (ideas, error patterns, barriers to understanding, starting points)
- Central didactic concepts and materials for teaching the subject area

Learning outcomes / competencies / targeted competencies:

Broad foundation of didactic mathematics skills as a basis for development in the area of knowledge acquisition, i.e. students

- Have structured and interlinked basic knowledge of subject-specific didactic concepts and can use this to analyze tasks, materials and concepts
- Are able to adequately present mathematical facts in both oral and written form, structure mathematical areas by stating driving questions, create and understand connections between them and establish references to school mathematics and its development
- Are able to check other people's arguments and build their own chains of reasoning when conjecturing and proving mathematical statements, apply mathematical thought patterns to internal mathematical and practical problems (mathematize) and create, reflect on and communicate solutions to problems using suitable media
- Have initial experience in planning and designing learning activities, also taking into account the heterogeneity of learners, the possibilities of new media and a variety of methods
- Develop subject-related diagnostic skills
- Analyze their own productions against the background of theoretical knowledge about typical learner perspectives, different argumentation bases, ideas to be developed, etc.
- Design, realize, present and evaluate initial explorations on the basis of their own questions founded on acquired subject-specific didactic principles
- Engage academically with subject-specific didactic literature

Calculation of student workload:

72 h Preparation / follow-up work

24 h Exam preparation

84 h SWS / presence time / working hours

Are there optional courses in the modules?

no

Language(s) of instruction: German	Responsible for the module: Prof. Dr. Christine Knipping
Frequency: winter semester, yearly	Duration: 2 semester[s]
The module is valid since / The module is valid until: SoSe 24 / -	Credit points / Workload: 6 / 180 hours

Module examinations

Module examination: Kombinationsprüfung zu Grundzüge der Mathematikdidaktik

Type of examination: combination exam

Form of examination:

Announcement at the beginning of the semester

The examination is ungraded?

no

Number of graded components / ungraded components / prerequisites of the examination:

1 / 1 / -

Language(s) of instruction:

Deutsch

Description:

Type of Examination: Oral or Written Exam.

The Coursework requirements will be decided upon by the Lecturer at the beginning of the course (Weekly Worksheets, Midterm Exam, etc.).

Module courses**Course:** Vorlesung mit Übung zu Grundzüge der Mathematikdidaktik**Frequency:**

winter semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

4,00

University teacher:

Dr. Fiene Bredow

Teaching method(s):**Associated module examination:**

Kombinationsprüfung zu Grundzüge der Mathematikdidaktik

Associated module courses**Grundzüge der Mathematikdidaktik - Teil 1 (Lecture)****Course:** Seminar zu Grundzüge der Mathematikdidaktik**Frequency:**

winter semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

2,00

University teacher:

Dr. Fiene Bredow

Teaching method(s):

Seminar

Associated module examination:

Kombinationsprüfung zu Grundzüge der Mathematikdidaktik

Module 03-MAT-BA-D2: Diagnostizieren und Fördern mit Praxisanteilen

Diagnosis and Support with School Practice

Assignment to areas of study:

- Subject-Specific Didactics

Content-related prior knowledge or skills:

none

Learning content:

The module introduces students to the analysis and diagnosis of varying mathematical learning processes, including theory-based preparation and evaluation of supportive learning arrangements. To this end, basic didactic knowledge of the subject matter is expanded, and reference is made to previously covered fundamental content-related concepts of subject teaching, subject-didactic diagnostic approaches; and support concepts based on these, including empirical findings.

The practical component of the course is primarily concerned with testing, expanding and reflecting on theoretical knowledge of diagnosis and support with regard to targeted practical diagnosis and support of subject-related learning processes. The specific content consists of a selection of the following topics, for example:

- Learning difficulties/talents/interests/skills/... in an area of school mathematics in connection with related didactic knowledge (arithmetic, elementary algebra, real numbers, ...)
- Knowledge of quantitative and qualitative methods for analyzing and diagnosing subject-related learning processes for pupils with learning difficulties in everyday lessons
- Theories, strategies, tools, learning materials and models for designing mathematically supportive learning environments
- Didactic-methodical analysis of tasks with regard to their support potential
- Planning, implementation and reflection of a supportive learning sequence
- Dealing with errors, learning hurdles, ideas, ...

There is a selection of possibilities for diagnosing and supporting dyscalculia, geometric imagination, learning delays in algebra, analytical learning hurdles, mathematical giftedness and interested pupils. These are discussed in the situations of inclusive classes, heterogeneous groups, skills in everyday lessons, using results from comparative tests, ...

Learning outcomes / competencies / targeted competencies:

Theory-based subject-didactic diagnostics, support, action and reflection, including subject-didactic knowledge: Students

- Develop and activate the knowledge needed to analyze tasks, materials and concepts with regard to the didactically justified design of supportive learning arrangements
- Are able to use subject-specific didactic concepts and empirical findings from mathematics-related teaching and learning research in order to analyze individual situations - the heterogeneous ideas, ways of thinking and error patterns of pupils. They can assess the learning status and potential of individuals, motivate them to learn mathematics and accompany them on their individual learning paths as well as promote and evaluate individual learning progress
- Deepen their subject-related diagnostic competence by planning and carrying out a diagnostically focused exploratory project to analyze typical learner perspectives, competencies, argumentation bases, ideas, learning difficulties, ...
- Understand and use typical literature for the development of diagnostic exploratory designs
- Present their support-diagnostic concept and explain it in a discourse
- Practice learner-adaptive support
- Expand their ability to analyze and critically reflect on their own actions
- Document diagnostic data for the purpose of preparing a written diagnosis and formulate a support recommendation (addressed to potential teachers)
- Take into account various dimensions of diversity in mathematics lessons. This includes disabilities as defined by the Convention on the Rights of Persons with Disabilities as well as special augmentative and alternative learning conditions, e.g. language, social living conditions, cultural and religious orientations, gender as well as special gifts and talents

Calculation of student workload:

45 h Preparation / follow-up work

86 h SWS / presence time / working hours

49 h Exam preparation

Are there optional courses in the modules?

no

Language(s) of instruction: German	Responsible for the module: Prof. Dr. Christine Knipping
Frequency: winter semester, yearly	Duration: 1 semester[s]
The module is valid since / The module is valid until: SoSe 24 / -	Credit points / Workload: 6 / 180 hours

Module examinations

Module examination: Modulprüfung	
Type of examination: module exam	
Form of examination: Portfolio (AT § 8 Abs. 8)	The examination is ungraded? no

Number of graded components / ungraded components / prerequisites of the examination:

- / 1 / -

Language(s) of instruction:

Deutsch

Description:

The coursework includes the diagnosis and support of pupils; portfolio with diagnostic descriptions, support planning and documentation, as well as a recommendation for the required level and type of support.

Module courses

Course: Seminar

Frequency:

winter semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

2,00

University teacher:

Teaching method(s):

Seminar

Associated module examination:

Modulprüfung

Associated module courses

Diagnostizieren und Fördern mit Praxisanteilen (Didaktik der Arithmetik) (Seminar)

Course: Praktikum

Frequency:

winter semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

-

University teacher:

Teaching method(s):

Laboratory class

Associated module examination:

Modulprüfung

Associated module courses

Diagnostizieren und Fördern mit Praxisanteilen (Didaktik der Arithmetik) (Seminar)

Module 03-MAT-BA-MGY1: Lineare Algebra

Linear Algebra

Assignment to areas of study:

- Specialist Mathematics

Content-related prior knowledge or skills:

None

Learning content:

- Linear systems of equations: solvability criteria, Gaussian elimination
- Vector spaces: axiomatics, linear (in)dependence, basis, dimension. Complex numbers
- Linear mappings: Kernel, image, dimension theorem, matrix calculus, change of basis
- Scalar products: Orthonormal bases, Gram-Schmidt method
- Determinants: axiomatic and explicit description, properties
- Eigenvalues: characteristic polynomial, multiplicities, diagonalizability, Jordan normal form (without proof), minimal polynomial, spectral theorems
- Symmetric bilinear forms over the real numbers: Classification, orthogonal complements.

Learning outcomes / competencies / targeted competencies:

- Students master basic mathematical skills
- Students can independently develop mathematical concepts and facts
- Students have active knowledge of proof strategies and techniques
- Students solve linear algebra problems independently
- Students know how linear algebra relates to school mathematics, theoretical mathematics and real world situations

Calculation of student workload:

168 h SWS / presence time / working hours

70 h Exam preparation

302 h Preparation / follow-up work

Are there optional courses in the modules?

no

Language(s) of instruction:

German

Responsible for the module:

Prof. Dr. Eva Maria Feichtner

Frequency:

winter semester, yearly

Duration:

2 semester[s]

The module is valid since / The module is valid until:

SoSe 24 / -

Credit points / Workload:

18 / 540 hours

Module examinations

Module examination: Kombinationsprüfung zur Linearen Algebra

Type of examination: combination exam

Form of examination:

Announcement at the beginning of the semester

The examination is ungraded?

no

Number of graded components / ungraded components / prerequisites of the examination:

1 / 1 / -

Language(s) of instruction:

Deutsch

Description:

Type of Examination: Oral or Written Exam.

The Coursework requirements will be decided upon by the Lecturer at the beginning of the course (Weekly Worksheets, Midterm Exam, Presentation etc.).

Module courses

Course: Vorlesung mit Übung zur Linearen Algebra 1

Frequency:

winter semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

6,00

University teacher:

Teaching method(s):

Associated module examination:

Kombinationsprüfung zur Linearen Algebra

Associated module courses

Lineare Algebra 1 (Lecture)

Course: Plenum zur Linearen Algebra 1

Frequency:

winter semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

2,00

University teacher:

Teaching method(s):

Associated module examination:

Kombinationsprüfung zur Linearen Algebra

Associated module courses

Vertiefung zur Linearen Algebra 1 für Lehramt ()

Course: Vorlesung mit Übung zur Linearen Algebra 2

Frequency:

summer semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

4,00

University teacher:

Teaching method(s):

Associated module examination:

Kombinationsprüfung zur Linearen Algebra

Module 03-MAT-BA-MGY2: Geometrie

Geometry

Assignment to areas of study:

- Specialist Mathematics

Content-related prior knowledge or skills:

none

Learning content:

- Axiomatic structure of Euclidean geometry
- Geometry in space (volumes and surface areas of solids and their lateral surfaces)
- Extracts from analytical geometry
- Conic sections
- Non-Euclidean geometries

Learning outcomes / competencies / targeted competencies:

The students

- Understand concepts of the axiomatic structure of geometry
- Derive basic theorems of geometry by logical reasoning from the given axioms
- Master fundamental concepts and factual relationships within plane geometry
- Sensibly use dynamic geometry software (e.g. GeoGebra, Cinderella) to understand problems and generate knowledge
- Can independently solve problems in the field of geometry and prove central theorems
- Deepen and further develop skills in spatial imagination
- Can name and present examples of non-Euclidean geometries

Calculation of student workload:

84 h Preparation / follow-up work

26 h Exam preparation

70 h SWS / presence time / working hours

Are there optional courses in the modules?

no

Language(s) of instruction:

German

Responsible for the module:

Dr. Arsen Narimanyan

Frequency:

summer semester, yearly

Duration:

1 semester[s]

The module is valid since / The module is valid until:

SoSe 24 / -

Credit points / Workload:

6 / 180 hours

This module is ungraded!

Module examinations

Module examination: Kombinationsprüfung zur Geometrie

Type of examination: combination exam

Form of examination: Announcement at the beginning of the semester	The examination is ungraded? no
Number of graded components / ungraded components / prerequisites of the examination: 1 / 1 / -	
Language(s) of instruction: Deutsch	
Description: Type of Examination: Oral or Written Exam. The Coursework requirements will be decided upon by the Lecturer at the beginning of the course (Weekly Worksheets, Midterm Exam, etc.).	

Module courses

Course: Vorlesung mit Übung zur Geometrie	
Frequency: summer semester, yearly	Language(s) of instruction: Deutsch
Contact hours: 6,00	University teacher: Dr. Arsen Narimanyan
Teaching method(s):	Associated module examination: Kombinationsprüfung zur Geometrie

Module 03-MAT-BA-MGY3: Analysis 1/2

Analysis 1/2

Assignment to areas of study:

- Specialist Mathematics

Content-related prior knowledge or skills:

None

Learning content:

Basic properties of natural, rational, real and complex numbers, sequences, series, elementary functions and continuity of real and complex-valued functions, differential calculus in one variable (mean value theorems, power series). Integral calculus (main theorem, mean value theorems of integral calculus), functions of several variables; differential calculus of several variables: derivation and linearization, integral calculus of several variables. Taylor series; linear differential equations of 1st and 2nd order (const. coefficient), deepening and extension of selected topics.

Learning outcomes / competencies / targeted competencies:

Confident and in-depth understanding of mathematical concepts and facts of analysis, active knowledge of proof strategies and techniques, ability to solve problems independently. Sound knowledge of one dimensional and higher dimensional analysis, including how this relates to school mathematics, theoretical mathematics and real world situations.

Calculation of student workload:

196 h SWS / presence time / working hours

354 h Preparation / follow-up work

80 h Exam preparation

Are there optional courses in the modules?

no

Language(s) of instruction:

German

Responsible for the module:

Prof. Dr. Anke Dorothea Pohl

Frequency:

winter semester, yearly

Duration:

2 semester[s]

The module is valid since / The module is valid until:

SoSe 24 / -

Credit points / Workload:

21 / 630 hours

Module examinations**Module examination:** Kombinationsprüfung zur Analysis 1 und Analysis 2**Type of examination:** combination exam**Form of examination:**

Announcement at the beginning of the semester

The examination is ungraded?

no

Number of graded components / ungraded components / prerequisites of the examination:

1 / 1 / -

Language(s) of instruction:

Deutsch

Description: Type of Examination: Oral or Written Exam. The Coursework requirements will be decided upon by the Lecturer at the beginning of the course (Weekly Worksheets, Midterm Exam, Presentation etc.).

Module examination: Studienleistung	
Type of examination: combination exam	
Form of examination: Announcement at the beginning of the semester	The examination is ungraded? no
Number of graded components / ungraded components / prerequisites of the examination: 1 / 1 / -	
Language(s) of instruction: Deutsch	

Module courses

Course: Vorlesung mit Übung zur Analysis 1	
Frequency: winter semester, yearly	Language(s) of instruction: Deutsch
Contact hours: 6,00	University teacher:
Teaching method(s):	Associated module examination: Kombinationsprüfung zur Analysis 1 und Analysis 2
Associated module courses	
Analysis 1 (Lecture)	

Course: Plenum zur Analysis 1	
Frequency: winter semester, yearly	Language(s) of instruction: Deutsch
Contact hours: 2,00	University teacher:
Teaching method(s):	Associated module examination: Kombinationsprüfung zur Analysis 1 und Analysis 2
Associated module courses	
Vertiefung zur Analysis 1 für Lehramt ()	

Course: Vorlesung mit Übung zur Analysis 2	
Frequency: summer semester, yearly	Language(s) of instruction: Deutsch
Contact hours: 6,00	University teacher:
Teaching method(s):	Associated module examination: Kombinationsprüfung zur Analysis 1 und Analysis 2

Module 03-MAT-BA-MGY5: Angewandte Mathematik

Applied Mathematics

Assignment to areas of study:

- Specialist Mathematics

Content-related prior knowledge or skills:

Knowledge from the modules 03-MAT-BA-MGY1 and 03-MAT-BA-MGY3

Learning content:

In this module, exemplary processes from nature, technology or society are investigated mathematically. This includes mathematical modeling, mathematical analysis and numerical evaluation/simulation.

The practical background is formed by questions from physics, biology, chemistry, environmental technology, electrical engineering, economics or other fields in which specific situations are, as a starting point, mathematically modeled. The mathematical topics covered include, for example, Dynamical systems (ordinary differential equations or sequences), discrete or linear optimization, stochastics, image and signal processing.

The mathematical treatment also includes, when implementing the models, the use of software that is most relevant to a school environment.

Learning outcomes / competencies / targeted competencies:

Students develop basic knowledge of and skills in mathematical modeling, mathematical analysis and the use of suitable software based on selected situations and problems from practice. They should be able to solve analog problems independently.

Calculation of student workload:

56 h SWS / presence time / working hours

40 h Exam preparation

84 h Preparation / follow-up work

Are there optional courses in the modules?

no

Language(s) of instruction:

German

Responsible for the module:

Dr. Arsen Narimanyan

Frequency:

winter semester, yearly

Duration:

1 semester[s]

The module is valid since / The module is valid until:

SoSe 24 / -

Credit points / Workload:

6 / 180 hours

Module examinations

Module examination: Kombinationsprüfung zur Angewandten Mathematik

Type of examination: combination exam

Form of examination:

Announcement at the beginning of the semester

The examination is ungraded?

no

Number of graded components / ungraded components / prerequisites of the examination:

1 / 1 / -

Language(s) of instruction:

Deutsch

Description:

Type of Examination: Oral or Written Exam.

The Coursework requirements will be decided upon by the Lecturer at the beginning of the course (Weekly Worksheets, Midterm Exam, etc.).

Module courses

Course: Vorlesung mit Übung zur Angewandten Mathematik

Frequency:

winter semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

4,00

University teacher:

Teaching method(s):

Associated module examination:

Kombinationsprüfung zur Angewandten Mathematik

Associated module courses

Angewandte Mathematik (Lecture)

Module 03-MAT-BA-MGY7: Stochastik Stochastics

Assignment to areas of study:

- Specialist Mathematics

Content-related prior knowledge or skills:

Knowledge from the modules 03-MAT-BA-MGY1 and 03-MAT-BA-MGY3.

Learning content:

Probability measures and distributions (on discrete sets, the real numbers \mathbb{R} and on \mathbb{R}^n), random variables, density functions and distribution functions, stochastic independence and convolutions, expected value, variance, covariance, correlation, law of large numbers. Further topics may include, for example, convergence of random variables and distributions, the central limit theorem, statistical estimation methods and hypothesis testing.

Learning outcomes / competencies / targeted competencies:

Students should be familiar with the mathematical modeling of chance and probability, know basic stochastic models and analytical concepts and be able to apply these to concrete situations (e.g. games of chance, election forecasts, clinical studies). Students should be able to use stochastic modeling in applications and be able to apply advanced basic concepts (such as statistical estimation methods, Markoff chains, stochastic processes) in elementary models.

Calculation of student workload:

84 h SWS / presence time / working hours

46 h Exam preparation

140 h Preparation / follow-up work

Are there optional courses in the modules?

no

Language(s) of instruction:

German

Responsible for the module:

Prof. Dr. Thorsten-Ingo Dickhaus

Frequency:

Duration:

The module is valid since / The module is valid until:

SoSe 24 / -

Credit points / Workload:

9 / 270 hours

This module is ungraded!

Module examinations

Module examination: Kombinationsprüfung zur Stochastik

Type of examination: combination exam

Form of examination:

Announcement at the beginning of the semester

The examination is ungraded?

no

Number of graded components / ungraded components / prerequisites of the examination:

1 / 1 / -

Language(s) of instruction:

Deutsch

Description:

Type of Examination: Oral or Written Exam.

The Coursework requirements will be decided upon by the Lecturer at the beginning of the course (Weekly Worksheets, Midterm Exam, etc.).

Module courses

Course: Vorlesung mit Übung zur Stochastik

Frequency:

summer semester, yearly

Language(s) of instruction:

Deutsch

Contact hours:

6,00

University teacher:

Teaching method(s):

Associated module examination:
Kombinationsprüfung zur Stochastik

Module 03-MAT-BA-MGY6: Modul Bachelorarbeit**Module Bachelor Thesis****Assignment to areas of study:**

- Specialist Mathematics

Content-related prior knowledge or skills:

Knowledge from the modules 03-MAT-BA-MGY1, 03-MAT-BA-MGY2 and 03-MAT-BA-MGY3.

Learning content:

Dependent on the topic of the thesis.

Learning outcomes / competencies / targeted competencies:

Students gain a much deeper understanding of a more specialized mathematical topic. Students expand their technical language skills in mathematics.

In addition to the usual word processing programs, students also use a formula editor and other programs commonly used to present mathematical facts (spreadsheets, dynamic geometry software, computer algebra system, ...) for written presentations.

Students are able to produce an appropriate, larger scale written presentation of mathematical facts.

Calculation of student workload:**Are there optional courses in the modules?**

no

Language(s) of instruction:

German

Responsible for the module:

Dr. Arsen Narimanyan

Frequency:

each semester

Duration:

1 semester[s]

The module is valid since / The module is valid until:

SoSe 24 / -

Credit points / Workload:

12 / 360 hours

Module examinations

Module examination: Bachelorarbeit

Type of examination: module exam

Form of examination:

Bachelor Thesis

The examination is ungraded?

no

Number of graded components / ungraded components / prerequisites of the examination:

1 / - / -

Language(s) of instruction:

Deutsch