

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Artificial Intelligence and Data Science as a Bachelor's with 1 major with the degree "Bachelor of Science" (180 ECTS credits)

Responsible: Faculty of Mathematics and Computer Science
Responsible: Institute of Computer Science

Examination regulations version: 2024
Examination regulations version: 2024

Abbreviations used: Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V** = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions for the modules in this SFB: Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Information on assessment procedures: Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with the general regulations governing the degree subject described in this module catalogue:

ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

31-Jan-2024 (2024-7)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

Every module will be described using the following form:

| | | | | | | | |
|--------------|---------------------------------------|--|--|----------------|-------------------|--|--------------|
| Abbreviation | Module title | | | | | | |
| | ECTS | | Duration | (in semesters) | Method of grading | | Module level |
| | Courses | | To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y | | | | |
| | Method of assessment | | | | | | |
| | Only after successful completion of | | if applicable | | | | |
| | Other prerequisites | | if applicable | | | | |
| | Participants and allocation of places | | if applicable | | | | |
| | Additional information | | if applicable | | | | |
| | Referred to in LPO I | | if applicable (examination regulations for teaching-degree programmes) | | | | |

| Compulsory Courses (115 ECTS credits) | | | | | | | | |
|--|--|----|--|------------|-------------------|------------------------------|-------------|---------------|
| Artificial Intelligence and Data Science (70 ECTS credits) | | | | | | | | |
| 10-I-AKIDS1-222-m01 | Algorithms, AI and Data Science 1 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |
| 10-I-AKIDS2-222-m01 | Algorithms, AI and Data Science 2 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |
| 10-I-PP-KIDS-222-m01 | Practical Course in Programming for Artificial Intelligence and Data Science | | | | | | | |
| | ECTS | 10 | Duration | | Method of grading | (not) successfully completed | Modul level | undergraduate |
| | Courses | | P (6) | | | | | |
| | Method of assessment | | practical examination (programming exercises, approx. 240 hours) and written examination (approx. 60 to 120 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English | | | | | |
| | other prerequisites | | Intended learning outcomes of the following module are required: 10-I-GdP. It is therefore strongly recommended to complete this before. | | | | | |
| 10-I-KIDS-Lab1-232-m01 | Artificial Intelligence and Data Science Lab 1 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | R (6) Module taught in: German or English | | | | | |
| | Method of assessment | | presentation of project results (30 to 45 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |

| | | | | | | | | |
|----------------------------|---|----|---|------------|-------------------|-----------------|-------------|---------------|
| 10-I-KIDS- Lab2-232-m01 | Artificial Intelligence and Data Science Lab 2 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | R (6) Module taught in: German and/or English | | | | | |
| | Method of assessment | | presentation of project results (30 to 45 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-I-KIDS- Lab3-232-m01 | Artificial Intelligence and Data Science Lab 3 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | R (6) Module taught in: German or English | | | | | |
| | Method of assessment | | presentation of project results (30 to 45 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-I-DSML-222- m01 | Data Science & Machine Learning | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |
| 10-I-DL-222-m01 | Deep Learning | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |

| Computer Science (20 ECTS credits) | | | | | | | | |
|------------------------------------|--|---|--|------------|-------------------|-----------------|-------------|---------------|
| 10-I-GdP-172-m01 | Fundamentals of Programming | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |
| | Referred to in LPO I | | § 49 I Nr. 1 b) § 69 I Nr. 1 b) | | | | | |
| 10-I-MCS-242-m01 | Introduction into Human-Computer Interaction | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (3) + Ü (1) | | | | | |
| | Method of assessment | | a) written examination (approx. 120 minutes) or b) presentation (30 to 60 minutes) or c) oral examination of one candidate each (30 to 60 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| 10-I-DB-152-m01 | Databases | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 49 I Nr. 1 b) § 69 I Nr. 1 b) | | | | | |
| 10-I-ST-KIDS-222-m01 | Software Technology for Artificial Intelligence and Data Science | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |

| Mathematics (25 ECTS credits) | | | | | | | | |
|-------------------------------|--|----|--|------------|-------------------|-----------------|-------------|---------------|
| 10-M-KIDS1-222-m01 | Mathematics for Artificial Intelligence and Data Science 1 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (5) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-M-KIDS2-222-m01 | Mathematics for Artificial Intelligence and Data Science 2 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (5) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-M-KIDS3-222-m01 | Mathematics for Artificial Intelligence and Data Science 3 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (1) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |

| Compulsory Electives (35 ECTS credits) | | | | | | | | |
|--|-----------------------------|---|--|------------|-------------------|-----------------|-------------|---------------|
| Artificial Intelligence and Data Science (15 ECTS credits) | | | | | | | | |
| 10-I-CV-222-m01 | Computer Vision | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| 10-I-NLP-222-m01 | Natural Language Processing | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| 10-I-TML-222-m01 | Theory of Machine Learning | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |

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| 10-I-AG-KIDS1-222-mo1 | Selected Fundamentals of Artificial Intelligence and Data Science 1 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-I-AG-KIDS2-222-mo1 | Selected Fundamentals of Artificial Intelligence and Data Science 2 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| Computer Science (10 ECTS credits) | | | | | | | | |
| 10-I-RAL-152-mo1 | Digital computer systems | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |
| 10-I-RIÜ-191-mo1 | Computer Networks and Information Transmission | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b), § 69 I Nr. 1 c) | | | | | |

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| 10-I-TI-242-m01 | Theory of Computation | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus | | | | | |
| | Referred to in LPO I | | § 49 I Nr. 1 a) § 69 I Nr. 1 a) | | | | | |
| 10-I-SEC-191-m01 | IT Security | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
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| 10-I-ICG-232-m01 | Interactive Computer Graphics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): HCI. | | | | | |
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| 10-I-WBS-152-m01 | Knowledge-based Systems | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
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|------------------|---------------------------------------|---|---|------------|-------------------|-----------------|-------------|---------------|
| 10-I-APR-172-m01 | Advanced Programming | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| 10-I-KT-191-m01 | Computational Complexity | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| 10-I-KD-191-m01 | Cryptography and Data Security | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |

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|------------------|---|---|--|------------|-------------------|-----------------|-------------|---------------|
| 10-I-3D-152-m01 | 3D Point Cloud Processing | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| 10-I-BS-191-m01 | Operating Systems | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) Module taught in: English | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| 10-I-RAK-152-m01 | Computer Architecture | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) § 69 I Nr. 1 c): Rechnerarchitektur | | | | | |
| 10-I-SKS-242-m01 | Control Principles of Modern Communication Systems | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |

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| 10-I-BPI-242-m01 | Practice/Job-oriented Internship Computer Science | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | undergraduate |
| | Courses | | P (1) | | | | | |
| | Method of assessment | | placement report (5 to 10 pages) Language of assessment: German and/or English | | | | | |
| | Additional Information | | block placement, duration 4 to 6 weeks | | | | | |
| 10-I-AGT-152-m01 | Algorithmic Graph Theory | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| 10-I-GI-152-m01 | Selected Basics of Computer Science | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus | | | | | |
| subsidiary subject | | | | | | | | |
| Mathematics | | | | | | | | |
| 10-M-DI-Maf-152-m01 | Introduction to Discrete Mathematics for students of other subjects | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| Method of assessment | | a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus | | | | | | |

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|----------------------|--|----|--|------------|-------------------|-----------------|-------------|---------------|
| 10-M-NUM1af-152-mo1 | Numerical Mathematics 1 for students of other subjects | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-M-STO-1af-152-mo1 | Stochastics 1 for students of other subjects | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-M-ZT-Haf-152-mo1 | Introduction Into Number Theory for students of other subjects | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-M-DGLaf-152-mo1 | Ordinary Differential Equations for students of other subjects | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + Ü (2) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus | | | | | |

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|-------------------|---|--|----------|------------|-------------------|------------------------------|-------------|---------------|
| 10-M-OML-222-mo1 | Optimization for Machine Learning | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus | | | | | | |
| 10-M-LOGP-232-mo1 | Introduction to Mathematical Logic | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus | | | | | | |
| Physics | | | | | | | | |
| 11-EFNF-152-mo1 | Introduction to Physics for Students of other Disciplines | | | | | | | |
| | ECTS | 7 | Duration | 2 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (4) + V (3) | | | | | | |
| | Method of assessment | written examination (60 to 120 minutes) | | | | | | |
| | Additional Information | according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter d) and No. I 1st letter d) of annex 1 to the APOLmCh and No. 4 of annex 2 to the APOLmCh | | | | | | |
| 11-PFNF-152-mo1 | Laboratory Course Physics for Students of other Disciplines | | | | | | | |
| | ECTS | 3 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | undergraduate |
| | Courses | P (4) | | | | | | |
| | Method of assessment | a) practical assignment with oral test (approx. 15 minutes, during experiments) and b) written examination (approx. 90 minutes). Each experiment comprises preparation, performance and evaluation. Test as well as performance of experiments can each be repeated once. | | | | | | |
| | Participants and allocation of places | Only as part of pool of general transferable skills (ASQ): 10 places (lottery) | | | | | | |
| | Additional Information | according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter d) and No. I 1st letter d) of annex 1 to the APOLmCh and No. 4 of annex 2 to the APOLmCh | | | | | | |

| Economics | | | | | | | | |
|--------------------|--|---|----------|------------|-------------------|-----------------|-------------|---------------|
| 12-EBWL-G-212-m01 | Organization | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (2) + T (2) | | | | | | |
| | Method of assessment | written examination (approx. 60 minutes) Language of assessment: German and/or English | | | | | | |
| 12-Ebus-F-212-m01 | E-Business | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (2) + T (2) | | | | | | |
| | Method of assessment | a) written examination (approx. 60 minutes) or b) term paper (approx. 15 pages) or c) term paper (approx. 10 pages) and presentation (approx. 10 minutes); (weighted 2:1) or d) oral examination in groups of up to 3 candidates (approx. 10 minutes per candidate) Language of assessment: German and/or English | | | | | | |
| 12-MDT-232-m01 | Management & Digital Transformation | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (2) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 60 minutes) or b) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus | | | | | | |
| 12-ExtUR-G-212-m01 | Accounting | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (2) + T (2) | | | | | | |
| | Method of assessment | written examination (approx. 60 minutes) Language of assessment: German and/or English | | | | | | |
| 12-IntUR-G-212-m01 | Managerial Accounting | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (2) + T (2) | | | | | | |
| | Method of assessment | written examination (approx. 60 minutes) Language of assessment: German and/or English | | | | | | |
| 12-BPL-G-212-m01 | Supply, Production and Operations Management | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (2) + T (2) | | | | | | |
| | Method of assessment | written examination (approx. 60 minutes) Language of assessment: German and/or English | | | | | | |

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|--------------------------|--|---|--|------------|-------------------|-----------------|-------------|---------------|
| 12-I&F-G-212-m01 | Investment and Finance | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + T (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 minutes) Language of assessment: German and/or English | | | | | |
| 12-Mark-G-212-m01 | Marketing | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + T (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 minutes) Language of assessment: German and/or English | | | | | |
| 12-WiPo-G-212-m01 | Public Policy | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + T (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 minutes) or b) portfolio (approx. 20 pages) Language of assessment: German and/or English | | | | | |
| 12-Mik2-G-212-m01 | Microeconomics 2 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + T (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 minutes) Language of assessment: German and/or English | | | | | |
| Linguistics | | | | | | | | |
| 04-DtLABA-BM-SW-241-m01 | Level One Module German Linguistics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + S (2) | | | | | |
| | Method of assessment | | written examination (approx. 75 minutes) | | | | | |
| | Referred to in LPO I | | § 43 I Nr. 2 b) § 63 I Nr. 2 b) | | | | | |
| 04-DtLABA-AM-SW1-241-m01 | Level Two Module Grammatical Structures of German | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (1) + S (2) | | | | | |
| | Method of assessment | | written examination (approx. 75 minutes) | | | | | |
| | Referred to in LPO I | | § 43 I Nr. 2 b) § 63 I Nr. 2 b) | | | | | |

| Biology | | | | | | | | |
|---------------------|--|---|--|------------|-------------------|-----------------|-------------|---------------|
| 07-1A1TI-152-m01 | Evolution and the Animal Kingdom | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (3) | | | | | |
| | Method of assessment | | written examination (approx. 60 minutes) creditable for bonus | | | | | |
| | other prerequisites | | Admission prerequisite to assessment: exercises. Regular attendance (minimum 80%) and successful completion of exercises (approx. 25 to 30 hours) are prerequisites for admission to assessment. | | | | | |
| | Referred to in LPO I | | § 41 I Nr. 1 (4 ECTS credits) and § 41 I Nr. 4 (1 ECTS credits) § 61 I Nr. 1 (4 ECTS credits) and § 61 I Nr. 4 (1 ECTS credits) | | | | | |
| 07-2A2GEN-V-152-m01 | Genetics, Neurobiology, Behaviour | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (3) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 90 minutes) creditable for bonus | | | | | |
| | other prerequisites | | Admission prerequisite to assessment: exercises. Regular attendance (minimum 80%) and successful completion of exercises (approx. 25 to 30 hours) are prerequisites for admission to assessment. | | | | | |
| | Referred to in LPO I | | § 61 I Nr. 2 (2 ECTS credits) § 61 I Nr. 3 (1 ECTS credits) § 61 I Nr. 4 (1 ECTS credits) | | | | | |
| 07-M-BST-152-m01 | Mathematical Biology and Biostatistics | | | | | | | |
| | ECTS | 4 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 60 minutes) creditable for bonus | | | | | |
| 07-3A3OE-KO-152-m01 | Plant and Animal Ecology | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 90 minutes) creditable for bonus | | | | | |
| | Referred to in LPO I | | § 61 I Nr. 4 | | | | | |
| 07-3A3GEM-T-152-m01 | Genes, Molecules, Technologies | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) | | | | | |
| | Method of assessment | | written examination (approx. 90 minutes) creditable for bonus | | | | | |

| Law | | | | | | | | |
|-----------------------|--|---|--|------------|-------------------|------------------------------|-------------|---------------|
| 02-J1-171-m01 | Introduction to the German Legal System | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) | | | | | |
| | Method of assessment | | written examination (approx. 120 minutes) | | | | | |
| | Participants and allocation of places | | max. 80 places. Students applying after not having successfully completed assessment in the past two semesters will be given preferential consideration. The remaining places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available. Places on all courses of the module with a restricted number of places will be allocated in the same procedure. | | | | | |
| 02-G&Hre-G-212-m01 | Commercial and Business Law for Economics and Management | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (3) + Ü (2) | | | | | |
| | Method of assessment | | written examination (approx. 120 minutes) Assessment offered: Usually once a year, summer semester | | | | | |
| Geography | | | | | | | | |
| 04-Geo-FER-NE-152-m01 | Introduction to Geographical Remote Sensing | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + T (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | written examination (approx. 45 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| | Referred to in LPO I | | § 66 I Nr. 2 | | | | | |
| 04-Geo-FER-NA-152-m01 | Applications of Remote Sensing in Geography | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (2) + T (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | written examination (approx. 45 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| Medicine | | | | | | | | |
| 03-M-MT-152-m01 | Practical Course in medical terminology | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | unknown |
| | Courses | | P (0) | | | | | |
| | Method of assessment | | written examination (approx. 60 to 90 minutes) | | | | | |

| Key Skills Area (20 ECTS credits) | | | | | | | | | |
|--|---|---|---|------------|-------------------|------------------------------|-------------|---------------|--|
| General Key Skills (5 ECTS credits) | | | | | | | | | |
| In addition to the modules listed below, students may also take modules offered by JMU as part of the pool of general transferable skills (ASQ). | | | | | | | | | |
| General Key Skills (subject-specific) | | | | | | | | | |
| 10-I-TUT1-152-m01 | Tutor activity 1 | | | | | | | | |
| | ECTS | 2 | Duration | | Method of grading | (not) successfully completed | Modul level | undergraduate | |
| | Courses | | T (2) | | | | | | |
| | Method of assessment | | Wrap-up report on tutoring activities (5 to 10 pages) | | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 2 f) § 22 II Nr. 3 f) | | | | | | |
| 10-I-TUT2-152-m01 | Tutor activity 2 | | | | | | | | |
| | ECTS | 2 | Duration | | Method of grading | (not) successfully completed | Modul level | undergraduate | |
| | Courses | | T (2) | | | | | | |
| | Method of assessment | | Wrap-up report on tutoring activities (5 to 10 pages) | | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 2 f) § 22 II Nr. 3 f) | | | | | | |
| 10-I-TUT3-152-m01 | Tutor activity 3 | | | | | | | | |
| | ECTS | 2 | Duration | | Method of grading | (not) successfully completed | Modul level | undergraduate | |
| | Courses | | T (2) | | | | | | |
| | Method of assessment | | Wrap-up report on tutoring activities (5 to 10 pages) | | | | | | |
| Subject-specific Key Skills (15 ECTS credits) | | | | | | | | | |
| 10-I-SEM-KIDS-222-m01 | Seminar - Selected Topics in Artificial Intelligence and Data Science | | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate | |
| | Courses | | S (2) | | | | | | |
| | Method of assessment | | term paper (10 to 15 pages) and presentation (30 to 45 minutes) with subsequent discussion Language of assessment: German and/or English | | | | | | |
| 10-I-KIDS-PW-232-m01 | Artificial Intelligence and Data Science Project Workshop | | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate | |
| | Courses | | R (3) Module taught in: German or English | | | | | | |
| | Method of assessment | | presentation of project results (30 to 45 minutes) Language of assessment: German and/or English creditable for bonus | | | | | | |

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|--------------------------|--|----|--|------------|-------------------|-----------------|-------------|---------------|
| 10-I-PV-152-m01 | Project Presentation | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | S (5) | | | | | |
| | Method of assessment | | presentation of a project developed by the candidate analogous to a presentation for laypersons with a knowledge of computer science at a trade fair as well as discussion (approx. 10 to 15 minutes total) Language of assessment: German and/or English | | | | | |
| | Referred to in LPO I | | § 22 II Nr. 3 b) | | | | | |
| Thesis (10 ECTS credits) | | | | | | | | |
| 10-I-KIDS-BA-222-m01 | Bachelor-Thesis Artificial Intelligence and Data Science | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | No courses assigned to module | | | | | |
| | Method of assessment | | Bachelor's thesis (approx. 50 to 100 pages) Language of assessment: German and/or English | | | | | |
| | Additional Information | | Time to complete: 10 weeks. | | | | | |