

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Computational Mathematics as a Master's with 1 major with the degree "Master of Science" (120 ECTS credits)

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

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 (2024-19)

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 Electives (90 ECTS credits) | | | | | | | | |
|--|---|----|---|------------|-------------------|-----------------|-------------|----------|
| Subfield Numerical Mathematics and Optimization (30-60 ECTS credits) | | | | | | | | |
| 10-M=AAAN-161-m01 | Applied Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VOP-T-161-m01 | Selected Topics in Optimization | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VMPH-161-m01 | Selected Topics in Mathematical Physics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=AOP-T-161-m01 | Basics in Optimization | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|--------------------|---|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=V-KOM-161-m01 | Mathematical Continuum Mechanics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + Ü (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=ANG-G-161-m01 | Numeric of Large Systems of Equations | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VN-PE-161-m01 | Numeric of Partial Differential Equations | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VOST-161-m01 | Optimal Control | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + Ü (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|---|--|---|----------|------------|-------------------|-----------------|-------------|---------------|
| 10-M=VI- PR-222-m01 | Inverse Problems 1 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (3) + Ü (1) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=VIP2-222- m01 | Inverse Problems 2 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | V (3) + Ü (1) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=V- NAM-192-m01 | Selected Topics in Numerical and Applied Mathematics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus | | | | | | |
| Subfield Mathematics (10-40 ECTS credits) | | | | | | | | |
| 10-M=AAL- G-161-m01 | Topics in Algebra | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |

| | | | | | | | | |
|--------------------|--------------------------------|----|---|------------|-------------------|-----------------|-------------|----------|
| 10-M=ADG-M-161-m01 | Differential Geometry | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=AFT-H-161-m01 | Complex Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=AGMS-161-m01 | Geometric Structures | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=AIST-161-m01 | Industrial Statistics 1 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|--------------------|---|---|----------|------------|-------------------|-----------------|-------------|----------|
| 10-M=ALTH-161-mo1 | Lie Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=ARTH-242-mo1 | Mathematical Control Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=ASM-R-161-mo1 | Stochastic Models of Risk Management | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=AST-P-161-mo1 | Stochastic Processes | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |

| | | | | | | | | |
|------------------------|--------------------------------|----|---|------------|-------------------|-----------------|-------------|----------|
| 10-M=A- TOP-161-m01 | Topology | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=AVS- M-161-m01 | Insurance Mathematics 1 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=AZ- RA-212-m01 | Time Series Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus | | | | | |
| 10-M=AZTH-161- m01 | Number Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|--------------------------|---|----|---|------------|-------------------|-----------------|-------------|----------|
| 10-M=AGP- Cin-152-m01 | Giovanni Prodi Lecture (Master) | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + Ü (1) Module taught in: English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus | | | | | |
| 10-M=VA- NA-161-m01 | Selected Topics in Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VFN- M-161-m01 | Selected Topics in Financial Mathematics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VGDS-161- m01 | Groups and their Representations | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|--------------------|-------------------------|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=VIST-161-mo1 | Industrial Statistics 2 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=V-STA-212-mo1 | Mathematical Statistics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VVS-M-161-mo1 | Insurance Mathematics 2 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VD-SY-161-mo1 | Dynamical Systems | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + Ü (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|------------------------|---|--|----------|------------|-------------------|-----------------|-------------|----------|
| 10-M=VMB- V-161-mo1 | Mathematical Imaging | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (3) + Ü (1) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=V- TRT-242-mo1 | Selected Topics in Mathematical Control Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=V- NAN-161-mo1 | Non-linear Analysis | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (3) + Ü (1) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=VV- SY-161-mo1 | Networked Systems | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (3) + Ü (1) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |

| | | | | | | | | |
|------------------------|---|----|---|------------|-------------------|-----------------|-------------|----------|
| 10-M=VK- GE-161-m01 | Complex Geometry | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VPD- P-161-m01 | Partial Differential Equations of Mathematical Physics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=V- PRG-161-m01 | Pseudo Riemannian and Riemannian Geometry | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=AF- AN-161-m01 | Functional Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|----------------------|--|----|---|------------|-------------------|-----------------|-------------|----------|
| 10-M=VAD-G-161-m01 | Applied Differential Geometry | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VG-PSin-152-m01 | Giovanni Prodi Lecture Selected Topics (Master) | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus | | | | | |
| 10-M=VG-PAin-152-m01 | Giovanni Prodi Lecture Advanced Topics (Master) | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus | | | | | |
| 10-M=VGPMIn-152-m01 | Giovanni Prodi Lecture Modern Topics (Master) | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English creditable for bonus | | | | | |

| | | | | | | | | |
|--------------------|----------------------------|----|--|------------|-------------------|------------------------------|-------------|----------|
| 10-M=EL-T1-192-m01 | Learning by Teaching 1 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | Ü (2) | | | | | |
| | Method of assessment | | Assessment of tutoring activities by supervising lecturers or exercise supervisors (1 to 2 teaching units) Language of assessment: German | | | | | |
| | Additional Information | | Application and selection with the teaching coordinator for mathematics | | | | | |
| 10-M=VGFT-192-m01 | Geometric Complex Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus | | | | | |
| | | | | | | | | |
| 10-M=V-KRY-192-m01 | Cryptography/Coding Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus | | | | | |
| | | | | | | | | |
| 10-M=V-CAL-192-m01 | Computer Algebra | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus | | | | | |
| | | | | | | | | |

| | | | | | | | | |
|--------------------|-------------------------------------|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=VAZ-T-192-m01 | Algorithmic Number Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus | | | | | |
| 10-M=VA-GE-192-m01 | Algebraic Geometry | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus | | | | | |
| 10-M=AAZ-T-222-m01 | Analytic Number Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=VAFT-222-m01 | Selected Topics in Complex Analysis | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + Ü (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|------------------------|-----------------------------|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=VAT- P-161-m01 | Algebraic Topology | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=V- KAR-161-m01 | Field Arithmetics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=V- DIM-161-m01 | Discrete Mathematics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + Ü (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |
| 10-M=V- GEO-161-m01 | Aspects of Geometry | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + Ü (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | |

| | | | | | | | | |
|--------------------|--|--|----------|------------|-------------------|-----------------|-------------|----------|
| 10-M=VMPH-161-mo1 | Selected Topics in Mathematical Physics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=VMT-H-161-mo1 | Module Theory | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (3) + Ü (1) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 90 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=MP1-161-mo1 | Analysis and Geometry of Classical Systems | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=MP2-161-mo1 | Algebra and Dynamics of Quantum Systems | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + Ü (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Language of assessment: German or English creditable for bonus | | | | | | |
| 10-M=E-PRK-161-mo1 | Internship Mathematics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | P (0) | | | | | | |
| | Method of assessment | a) report on practical course (15 to 30 pages) or b) talk (30 to 60 minutes) | | | | | | |
| | other prerequisites | In advance, please consult with a lecturer who agrees to be your supervisor. | | | | | | |

| | | | | | | | | |
|---|---|---|----------|------------|-------------------|-----------------|-------------|----------|
| 10-M=AAM-L-242-m01 | Selected Topics in Mathematical Logic | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | |
| | Courses | V (3) + Ü (1) Module taught in: German and/or English | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, 10 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English creditable for bonus | | | | | | |
| 10-M=A-HAN-242-m01 | Harmonic Analysis | | | | | | | |
| | 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. 60 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English creditable for bonus | | | | | | |
| Subfield Research in Groups and Seminars (10-40 ECTS credits) | | | | | | | | |
| Applied Mathematics (10-40 ECTS credits) | | | | | | | | |
| 10-M=GM-SC-161-m01 | Research in Groups - Mathematics in the Sciences | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (2) + S (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | | |
| 10-M=GN-MA-161-m01 | Research in Groups - Numerical Mathematics and Applied Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (2) + S (2) Module taught in: German and/or English | | | | | | |
| | Method of assessment | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | | |

| | | | | | | | | |
|----------------------|---|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=GROC-161-mo1 | Research in Groups - Robotics, Optimization and Control Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SGP-Cin-152-mo1 | Giovanni Prodi Seminar (Master) | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: English | | | | | |
| 10-M=SID-C-161-mo1 | Interdisciplinary Seminar | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SM-SC-161-mo1 | Seminar Mathematics in the Sciences | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SN-MA-161-mo1 | Seminar in Numerical Mathematics and Applied Analysis | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |

| | | | | | | | | |
|---------------------------------|---|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=SOP-T-161-m01 | Seminar in Optimization | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SA-MA-192-m01 | Seminar Applied Mathematics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (approx. 60 to 120 minutes) Language of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester | | | | | |
| 10-M=GIN-P-222-m01 | Research in Groups - Inverse Problems | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| Mathematics (0-30 ECTS credits) | | | | | | | | |
| 10-M=GAL-G-161-m01 | Research in Groups - Algebra | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=G-DIM-161-m01 | Research in Groups - Discrete Mathematics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |

| | | | | | | | | |
|--------------------|---|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=GD-SC-242-m01 | Research in Groups - Dynamical Systems and Control Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=G-COA-161-m01 | Research in Groups - Complex Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=GGM-T-161-m01 | Research in Groups - Geometry and Topology | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=GM-CX-161-m01 | Research in Groups - Mathematics in Context | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=G-MAI-161-m01 | Research in Groups - Measure and Integral | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |

| | | | | | | | | |
|--------------------|---|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=GT-SA-161-m01 | Research in Groups - Time Series Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=G-STA-161-m01 | Research in Groups - Statistics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=GNTH-161-m01 | Research in Groups - Number Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=GD-GE-161-m01 | Research in Groups - Differential Geometry | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=GDF-Q-161-m01 | Research in Groups - Deformation Quantization | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |

| | | | | | | | | |
|------------------------|---|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=GN- LA-161-m01 | Research in Groups - Non-linear Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=GO- PA-161-m01 | Research in Groups - Operator Algebras | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=GLIE-192- m01 | Research in Groups - Lie Theory | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (approx. 60 to 120 minutes) Language of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester | | | | | |
| 10-M=GAD- G-192-m01 | Research in Groups - Applied Differential Geometry | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (approx. 60 to 120 minutes) Language of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester | | | | | |
| 10-M=G- MAP-192-m01 | Research in Groups - Mathematical Physics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (approx. 60 to 120 minutes) Language of assessment: German or English Assessment offered: Only when announced in the semester in which the courses are offered and in the subsequent semester | | | | | |

| | | | | | | | | |
|--------------------|---|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=GHST-222-mo1 | Research in Groups - Higher Structures | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=G-FAN-222-mo1 | Research in Groups - Functional Analysis | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SAD-G-161-mo1 | Seminar in Applied Differential Geometry | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SAL-G-161-mo1 | Seminar in Algebra | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SD-SC-242-mo1 | Seminar in Dynamical Systems and Control Theory | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |

| | | | | | | | | |
|------------------------|---|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=S- COA-161-mo1 | Seminar in Complex Analysis | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=S- FIM-161-mo1 | Seminar in Financial and Insurance Mathematics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=S- GTO-161-mo1 | Seminar in Geometry and Topology | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=S- STA-161-mo1 | Seminar in Statistics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SN- LA-161-mo1 | Seminar in Non-linear Analysis | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |

| | | | | | | | | |
|---|--|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-M=GM- LO-242-m01 | Research in Groups - Mathematical Logic | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | |
| | Courses | | V (2) + S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| 10-M=SM- LO-242-m01 | Seminar Mathematical Logic | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | |
| | Courses | | S (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | talk (60 to 120 minutes) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German or English | | | | | |
| Subfield Application Subject (10-40 ECTS credits) | | | | | | | | |
| Application Subject Biology and Medicine | | | | | | | | |
| 07-MS2BI-152-m01 | Bioinformatics | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English | | | | | |
| 07-MS2BIF1-152-m01 | Bioinformatics F1 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | P (14) + S (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|--------------------|----------------------|----|--|------------|-------------------|------------------------------|-------------|----------|
| 07-MS2BIF2-152-m01 | Bioinformatics F2 | | | | | | | |
| | ECTS | 15 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | P (29) + S (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English | | | | | |
| 07-MBI-B-152-m01 | Bioinformatics B | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | V (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English | | | | | |
| 07-MS3S-152-m01 | Systems Biology | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + S (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English | | | | | |
| 07-MS3SYF1-152-m01 | Systems Biology F1 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | P (14) + S (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|--|---|----|--|------------|---|------------------------------|-------------|--------------|
| o7-MS3SYF2-152-m01 | Systems Biology F2 | | | | | | | |
| | ECTS | 15 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | P (29) + S (1) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (15 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: German and/or English | | | | | |
| o7-MS-B-152-m01 | Systems Biology B | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | V (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (30 to 60 minutes, including multiple choice questions) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (30 to 60 minutes) Language of assessment: German and/or English | | | | | |
| Application Subject Chemie | | | | | | | | |
| o8-PCM1a-161-m01 | Laser Spectroscopy | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (1) Module taught in: German or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) Language of assessment: German and/or English | | | | | |
| o8-PCM1b-161-m01 | Advanced Physical Chemistry (Lab) | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | P (4) Module taught in: German or English | | | | | |
| | Method of assessment | | Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English | | | | | |
| | Additional Information | | Additional information on module duration: block taught lab course with approx. 20 working days. | | | | | |
| o8-PCM2-161-m01 | Statistical Mechanics and Reaction Dynamics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (1) Module taught in: German or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (approx. 30 minutes) Language of assessment: German and/or English | | | | | |
| Master's with 1 major Computational Mathematics (2024) | | | | | JMU Würzburg • generated 19-Mär-2024 • exam. reg. data record 88 f24 - - H 2024 | | | page 28 / 57 |

| | | | | | | | | |
|-----------------|---|---|--|------------|-------------------|------------------------------|-------------|----------|
| o8-PCM3-161-mo1 | Nanoscale Materials | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (1) Module taught in: German or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| o8-PCM4-161-mo1 | Ultrafast spectroscopy and quantum-control | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (1) Module taught in: German or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (approx. 30 minutes) Language of assessment: German and/or English | | | | | |
| | other prerequisites | | Prior completion of modules o8-PCM1a and o8-PCM1b recommended. | | | | | |
| o8-PCM5-161-mo1 | Physical Chemistry of Supramolecular Assemblies | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (1) Module taught in: German or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) talk (approx. 30 minutes) Language of assessment: German and/or English | | | | | |
| o8-PCM6-161-mo1 | Physical Chemistry (Advanced Lab) | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | P (4) Module taught in: German or English | | | | | |
| | Method of assessment | | presentation (approx. 20 minutes) Language of assessment: German and/or English | | | | | |
| | Additional Information | | Additional information on module duration: block taught lab course with approx. 20 working days. | | | | | |
| o8-TCM2-161-mo1 | Basics and Applications of Quantum Chemistry | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (2) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|------------------|---|---|--|------------|-------------------|------------------------------|-------------|----------|
| o8-TCM3-161-m01 | Numerical Methods and Programming | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (2) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English | | | | | |
| o8-TCM4-161-m01 | Quantum Dynamics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (2) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English | | | | | |
| o8-TCM1-161-m01 | Selected Topics in Theoretical Chemistry | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | S (2) + Ü (2) | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English | | | | | |
| o8-TCAP1-161-m01 | Theoretical Chemistry - Project course quantum chemistry | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | P (5) | | | | | |
| | Method of assessment | | presentation (approx. 30 minutes) Language of assessment: German and/or English | | | | | |
| | Additional Information | | Additional information on module duration: block taught lab course with approx. 20 working days. | | | | | |
| o8-TCAP2-161-m01 | Theoretical Chemistry - Project course quantum dynamics | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | graduate |
| | Courses | | P (5) | | | | | |
| | Method of assessment | | presentation (approx. 30 minutes) Language of assessment: German and/or English | | | | | |
| | Additional Information | | Additional information on module duration: block taught lab course with approx. 20 working days. | | | | | |

| Application Subject Computer Science and Aerospace Computer Science | | | | | | | | |
|---|--|--|----------|------------|-------------------|-----------------|-------------|----------|
| 10-I=SEM3-232-m01 | Seminar 1 - Current Topics in Computer Science | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | S (2) Module taught in: German and English The course is offered in parallel in both German and English. | | | | | | |
| | Method of assessment | term paper (10 to 15 pages) and presentation (30 to 45 minutes) with subsequent discussion on a topic from the field of computer science Language of assessment: German and/or English | | | | | | |
| | Additional Information | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,KI,ES,L-R,HCI,GE,SEC,IN | | | | | | |
| 10-I=APR-212-m01 | Advanced Programming | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English | | | | | | |
| | Additional Information | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,KI,LR, HCI, ES,GE,SEC | | | | | | |
| 10-LU-RI=AMS-232-m01 | Autonomous Mobile Systems | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + 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 | | | | | | |
| | Additional Information | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT, KI, ES, LR, GE | | | | | | |

| | | | | | | | | |
|------------------------|---|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-I=A- GIS-232-m01 | Algorithms for Geographic Information Systems | | | | | | | |
| | 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): AT,KI,HCI,LR,IN | | | | | |
| 10-I=AG-232-m01 | Computational Geometry | | | | | | | |
| | 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): AT,HCI,GE,IN | | | | | |
| 10-I=APA-161-m01 | Approximation Algorithms | | | | | | | |
| | 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): AT,IT,GE | | | | | |

| | | | | | | | | |
|----------------------|-----------------------------------|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-I=AUT-212-m01 | Automata Theory | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following semester | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,ES,HCI,GE | | | | | |
| 10-I=AVS-161-m01 | Avionics Systems | | | | | | | |
| | 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): ES,LR | | | | | |
| 10-HCI=M-MUI-161-m01 | Multimodal User Interfaces | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | presentation of project results (approx. 40 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-I=BER-212-m01 | Computability Theory | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following semester | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,KI,GE | | | | | |

| | | | | | | | | |
|------------------|------------------------------|---|--|------------|-------------------|-----------------|-------------|---------------|
| 07-BI-161-m01 | Bioinformatics | | | | | | | |
| | 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=CB-161-m01 | Compiler Construction | | | | | | | |
| | 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): SE,IT,IS,GE | | | | | |
| 10-I=DDB-212-m01 | Deductive Databases | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,KI | | | | | |
| 10-I=EL-212-m01 | E-Learning | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,KI,HCI,GE | | | | | |

| | | | | | | | | |
|---------------------|-----------------------------|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-I=ES-231-m01 | Embedded Systems | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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 | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,ES,LR,GE | | | | | |
| 10-I=IR-212-m01 | Information Retrieval | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,KI,HCI,GE | | | | | |
| 10-HCI=3DUI-161-m01 | 3D User Interfaces | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | presentation of project results (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-I=KT2-212-m01 | Computational Complexity II | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following semester | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,ES | | | | | |

| | | | | | | | | |
|------------------|---|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-I=KI1-212-m01 | Artificial Intelligence 1 | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,KI,HCI | | | | | |
| 10-I=KI2-212-m01 | Artificial Intelligence 2 | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,KI,HCI,GE | | | | | |
| 10-I=LVS-232-m01 | Performance Evaluation of Distributed Systems | | | | | | | |
| | 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): AT,IT,GE,IN | | | | | |

| | | | | | | | | |
|--|---|---|--|------------|---|-----------------|-------------|--------------|
| 10-I=ML-212-m01 | Mathematical Logic | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following semester | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,KI,ES | | | | | |
| 10-I=MI-212-m01 | Medical Informatics | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,KI,HCI,GE | | | | | |
| 10-I=PEB-182-m01 | Performance Engineering and Benchmarking | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + Ü (2) Module taught in: English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus | | | | | |
| 10-I=RAM-161-m01 | Computer Arithmetic | | | | | | | |
| | 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): AT,ES | | | | | |
| Master's with 1 major Computational Mathematics (2024) | | | | | JMU Würzburg • generated 19-Mär-2024 • exam. reg. data record 88 f24 - - H 2024 | | | page 37 / 57 |

| | | | | | | | | |
|--------------------------|---------------------------|----|--|------------|-------------------|-----------------|-------------|----------|
| 10-LU- RI=RO1-232-m01 | Robotics 1 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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 | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): KI, ES, LR, HCI, GE | | | | | |
| 10-LU- RI=RO2-232-m01 | Robotics 2 | | | | | | | |
| | ECTS | 10 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + Ü (2) + P (1) 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 | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): KI, ES, LR, HCI, GE | | | | | |
| 10-I=ST-232-m01 | Discrete Event Simulation | | | | | | | |
| | 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): IT,KI,ES,GE,IN | | | | | |

| | | | | | | | | |
|----------------------|---|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-HCI-PRIS-212-mo1 | Principles of Interactive Systems | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-I=SAR-161-mo1 | Software Architecture | | | | | | | |
| | 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): SE,IT,ES | | | | | |
| 10-HCI=M-LUI-161-mo1 | Machine Learning (for User Interfaces) | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + Ü (2) | | | | | |
| | Method of assessment | | presentation of project results (approx. 40 minutes) Language of assessment: German and/or English creditable for bonus | | | | | |
| 10-I=VG-161-mo1 | Visualization of Graphs | | | | | | | |
| | 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): AT,IT,HCI,GE | | | | | |

| | | | | | | | | |
|------------------|-------------------------------|---|----------|------------|-------------------|-----------------|-------------|----------|
| 10-I=AKA-232-m01 | Selected Topics in Algorithms | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (2) + Ü (2) | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 120 minutes) or b) practical project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) or c) oral examination of one candidate each (approx. 20 minutes) or d) oral examination in groups of up to 3 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): AT | | | | | | |
| 10-I=AKT-232-m01 | Selected Topics in Theory | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (2) + Ü (2) | | | | | | |
| | Method of assessment | a) written examination (approx. 60 to 120 minutes) or b) practical project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) or c) oral examination of one candidate each (approx. 20 minutes) or d) oral examination in groups of up to 3 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): AT | | | | | | |
| 10-I=SSS-232-m01 | Security of Software Systems | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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: English creditable for bonus | | | | | | |
| | Additional Information | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,KI,LR, HCI, ES, SEC,IN | | | | | | |

| | | | | | | | | |
|--------------------|--|---|---|------------|-------------------|-----------------|-------------|----------|
| 10-I=NLP-212-m01 | Machine Learning for Natural Language Processing | | | | | | | |
| | 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). creditable for bonus Language of assessment: German and/or English | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,KI,HCI | | | | | |
| 10-I=PM-212-m01 | Professional Project Management | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) | | | | | |
| | 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 Language of assessment: German and/or English | | | | | |
| | other prerequisites | | We recommend completing module 10-I=PRJAK in parallel. | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,KI,ES,LR,HCI,GE | | | | | |
| 10-I=PRJAK-212-m01 | Project - Current Topics in Computer Science | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | P (4) | | | | | |
| | Method of assessment | | project report (10 to 15 pages) and presentation of project (15 to 30 minutes) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered (Each project is offered one time only. The project will not be repeated; there will not be another project with the same topic. Assessment can, therefore, only be offered for the project offered in the respective semester) | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,KI,ES,L-R,HCI,GE | | | | | |

| | | | | | | | | |
|-------------------|--|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-I=STM-162-mo1 | NLP and Text Mining | | | | | | | |
| | 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 | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, IT, HCI. | | | | | |
| 10-I=SNA-232-mo1 | Statistical Network Analysis | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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 | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IN | | | | | |
| 10-I=MLN1-232-mo1 | Machine Learning for Networks 1 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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: English creditable for bonus | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,SE,KI,HCI,IN | | | | | |

| | | | | | | | | |
|--------------------|---------------------------------|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-I=MLN2-232-m01 | Machine Learning for Networks 2 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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: English creditable for bonus | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,SE,KI,HCI,IN | | | | | |
| 10-I=M-NLP-232-m01 | Multilingual NLP | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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: English Creditable for bonus | | | | | |
| | Additional Information | | | | | | | |
| 10-I=QC-221-m01 | Quantum Communications | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + V (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: English creditable for bonus | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): LR | | | | | |

| | | | | | | | | |
|---------------------|--|---|---|------------|-------------------|-----------------|-------------|----------|
| 10-I=RLCD-M-232-m01 | Reinforcement Learning and Computational Decision Making | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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 | | | | | |
| 10-I=MIR-232-m01 | Music Information Retrieval | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + Ü (2) Module taught in: German and/or English | | | | | |
| | Method of assessment | | a) written examination (approx. 60 to 120 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes) Language of assessment: German and/or English Creditable for bonus | | | | | |
| 10-I=RRS-232-m01 | Remote Sensing | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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 | | | | | |
| | Additional Information | | possible majors for MA 120 Computer Science: LR,IN | | | | | |
| 10-I=OR-232-m01 | Operations Research | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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 | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IN | | | | | |

| | | | | | | | | |
|-----------------------------------|---|---|--|------------|-------------------|-----------------|-------------|----------|
| 10-I=El1-232-m01 | Energy Informatics 1 | | | | | | | |
| | ECTS | 5 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | 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 | | | | | |
| | Additional Information | | Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IN | | | | | |
| Application Subject Physik | | | | | | | | |
| 11-BSV-161-m01 | Image and Signal Processing in Physics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + Ü (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| | | | | | | | | |
| 11-PMM-161-m01 | Physics of Advanced Materials | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| | | | | | | | | |

| | | | | | | | | |
|----------------|---------------------------------|---|--|------------|-------------------|-----------------|-------------|----------|
| 11-SPI-161-m01 | Spintronics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-FKS-161-m01 | Solid State Spectroscopy | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-MAG-161-m01 | Magnetism | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|----------------|--|---|--|------------|-------------------|-----------------|-------------|----------|
| 11-HNS-161-m01 | Optical Properties of Semiconductor Nanostructures | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-ASM-161-m01 | Methods of Observational Astronomy | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-TPE-161-m01 | Experimental Particle Physics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|----------------|-------------------------------|---|--|------------|-------------------|-----------------|-------------|---------------|
| 11-ASP-161-m01 | Introduction to Space Physics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-MAS-161-m01 | Multi-wavelength Astronomy | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-QM2-161-m01 | Quantum Mechanics II | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|----------------|--|---|--|------------|-------------------|-----------------|-------------|----------|
| 11-RTT-161-m01 | Theory of Relativity | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-PKS-161-m01 | Physics of Complex Systems | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-TFK-161-m01 | Theoretical Solid State Physics | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|-----------------|--|---|--|------------|-------------------|-----------------|-------------|----------|
| 11-TFK2-161-m01 | Theoretical Solid State Physics 2 | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-CMS-161-m01 | Computational Materials Science (DFT) | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-KFT-161-m01 | Conformal Field Theory | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|-----------------|--|---|--|------------|-------------------|-----------------|-------------|----------|
| 11-KFT2-161-mo1 | Conformal Field Theory 2 | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-CRP-161-mo1 | Renormalization Group and Critical Phenomena | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-BWW-161-mo1 | Bosonisation and Interactions in One Dimension | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|----------------|---------------------------------------|---|--|------------|-------------------|-----------------|-------------|----------|
| 11-GGD-161-m01 | Introduction to Gauge/Gravity Duality | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-AKM-161-m01 | Cosmology | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-AST-161-m01 | Theoretical Astrophysics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (2) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|-----------------|---|---|--|------------|-------------------|-----------------|-------------|----------|
| 11-APL-161-m01 | High Energy Astrophysics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-QFT2-161-m01 | Quantum Field Theory II | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |
| 11-TEP-161-m01 | Theoretical Elementary Particle Physics | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | |

| | | | | | | | | |
|-----------------|---|--|----------|------------|-------------------|-----------------|-------------|----------|
| 11-ATTP-161-m01 | Selected Topics of Theoretical Elementary Particle Physics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (3) + R (1) Module taught in: German or English | | | | | | |
| | Method of assessment | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | | |
| 11-BSM-161-m01 | Models Beyond the Standard Model of Elementary Particle Physics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (3) + R (1) Module taught in: German or English | | | | | | |
| | Method of assessment | written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English | | | | | | |
| 11-FK2-201-m01 | Solid State Physics 2 | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | V (4) + R (2) Module taught in: German or English | | | | | | |
| | Method of assessment | written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester | | | | | | |
| | other prerequisites | Approval from examination committee required. | | | | | | |

| | | | | | | | | |
|----------------|--|---|---|------------|-------------------|-----------------|-------------|----------|
| 11-HPH-201-m01 | Semiconductor Physics | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester | | | | | |
| 11-FFK-201-m01 | Field Theory in Solid State Physics | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester | | | | | |
| 11-Q C-201-m01 | Advanced Theory of Quantum Computing and Quantum Information | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester | | | | | |

| | | | | | | | | |
|-----------------|---|---|---|------------|-------------------|-----------------|-------------|----------|
| 11-TEFK-201-m01 | Topological Effects in Solid State Physics | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester | | | | | |
| 11-PTS-201-m01 | Phenomenology and Theory of Superconductivity | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester | | | | | |
| 11-QFT1-201-m01 | Quantum Field Theory I | | | | | | | |
| | ECTS | 8 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (4) + R (2) Module taught in: German or English | | | | | |
| | Method of assessment | | written examination (approx. 90-120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester | | | | | |
| | other prerequisites | | Approval from examination committee required. | | | | | |

| | | | | | | | | |
|--------------------------|---|----|--|------------|-------------------|-----------------|-------------|----------|
| 11-SLQ-232-m01 | Black Holes | | | | | | | |
| | ECTS | 6 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | V (3) + R (1) Module taught in: German or English | | | | | |
| | Method of assessment | | a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the following semester | | | | | |
| Thesis (30 ECTS credits) | | | | | | | | |
| 10-M=MACM-161-m01 | Master Thesis Computational Mathematics | | | | | | | |
| | ECTS | 30 | Duration | 1 semester | Method of grading | numerical grade | Modul level | graduate |
| | Courses | | No courses assigned to module | | | | | |
| | Method of assessment | | Master's thesis (750 to 900 hours total) Registration and assignment of topic in consultation with supervisor. Language of assessment: German or English | | | | | |
| | other prerequisites | | The supervisor may make the successful completion of certain modules that are relevant for the respective topic a prerequisite for the assignment of the topic. | | | | | |
| | Additional Information | | Time to complete: 6 months. | | | | | |