

## Annex SFB

### Studienfachbeschreibung (subject description, SFB) for the subject Technology of Functional Materials as a Bachelor's with 1 major with the degree "Bachelor of Science" (180 ECTS credits)

Responsible: Faculty of Chemistry and Pharmacy

Examination regulations version: 2010

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:

**ASPO2007**

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

**29-Apr-2010 (2010-22)**

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

| Compulsory Courses (143 ECTS credits) |   |   |          |            |                   |                 |                             |
|---------------------------------------|---|---|----------|------------|-------------------|-----------------|-----------------------------|
| o8-IAC-062-m01                        | <b>Experimental Chemistry, General and analytical laboratory course for engineering students</b>  |   |          |            |                   |                 |                             |
|                                       | ECTS  | 10  | Duration | 1 semester | Method of grading | numerical grade | Modul level   undergraduate |
|                                       | Courses   | This module comprises 2 module components. Information on courses will be listed separately for each module component. <ul style="list-style-type: none"> <li>o8-IAC-1-062: V (no information on SWS (weekly contact hours) and course language available)</li> <li>o8-IAC-2-062: P (no information on SWS (weekly contact hours) and course language available)</li> </ul>   |          |            |                   |                 |                             |
|                                       | Method of assessment  | Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. <p><b>Assessment in module component o8-IAC-1-062:</b> Experimental Chemistry</p> <ul style="list-style-type: none"> <li>5 ECTS, Method of grading: numerical grade</li> <li>written examination (approx. 90 minutes)</li> </ul> <p><b>Assessment in module component o8-IAC-2-062:</b> General and analytical Chemistry Lab for engineering students</p> <ul style="list-style-type: none"> <li>5 ECTS, Method of grading: (not) successfully completed</li> <li>Vortestate (pre-experiment exams, approx. 15 minutes each), assessment of practical performance, Nachtestate (post-experiment exams, approx. 15 minutes each)</li> </ul> |          |            |                   |                 |                             |
| 99-TM-062-m01                         | <b>Fundamentals of Engineering Mechanics</b>  |   |          |            |                   |                 |                             |
|                                       | ECTS  | 5   | Duration | 1 semester | Method of grading | numerical grade | Modul level   undergraduate |
|                                       | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)  |          |            |                   |                 |                             |
| Method of assessment                  | written examination (90 minutes)  |   |          |            |                   |                 |                             |
| 11-MPI3-062-m01                       | <b>Mathematics 3 for students of Physics and Engineering</b>  |   |          |            |                   |                 |                             |
|                                       | ECTS  | 8   | Duration | 1 semester | Method of grading | numerical grade | Modul level   undergraduate |
|                                       | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)  |          |            |                   |                 |                             |
|                                       | Method of assessment  | written examination (approx. 120 minutes)   |          |            |                   |                 |                             |
| other prerequisites                   | Admission prerequisite to assessment: successful completion of approx. 50% of exercises. Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. |   |          |            |                   |                 |                             |
| 11-ENNF1-062-m01                      | <b>Introduction to Physics Part 1 for students of Physics Related Minor Subjects</b>  |   |          |            |                   |                 |                             |
|                                       | ECTS  | 7   | Duration | 1 semester | Method of grading | numerical grade | Modul level   undergraduate |
|                                       | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)  |          |            |                   |                 |                             |
|                                       | Method of assessment  | written examination (approx. 120 minutes)   |          |            |                   |                 |                             |
| Participants and allocation of places | Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot.   |   |          |            |                   |                 |                             |

|                   |  |    |  |            |                   |                              |             |               |
|-------------------|--|----|--|------------|-------------------|------------------------------|-------------|---------------|
| 11-ENNF2-062-m01  | <b>Introduction to Physics Part 2 for students of Physics Related Minor Subjects</b> |    |  |            |                   |                              |             |               |
|                   | ECTS   | 7  | Duration   | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses  |    | V + Ü (no information on SWS (weekly contact hours) and course language available)                           |            |                   |                              |             |               |
|                   | Method of assessment   |    | written examination (approx. 120 minutes)  |            |                   |                              |             |               |
|                   | Participants and allocation of places  |    | Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot.                |            |                   |                              |             |               |
| 11-PNNF-062-m01   | <b>Physics Laboratory Course for students of Physics Related Minor Subjects</b>      |    |  |            |                   |                              |             |               |
|                   | ECTS   | 3  | Duration   | 1 semester | Method of grading | (not) successfully completed | Modul level | undergraduate |
|                   | Courses  |    | P (no information on SWS (weekly contact hours) and course language available)                               |            |                   |                              |             |               |
|                   | Method of assessment   |    | a) oral test (approx. 15 minutes) during experiment and b) ungraded written examination (approx. 90 minutes) |            |                   |                              |             |               |
|                   | Participants and allocation of places  |    | Only as part of pool of general key skills (ASQ): 15 places. Places will be allocated by lot.                |            |                   |                              |             |               |
| 08-BKOLL-062-m01  | <b>Bachelor Thesis' Colloquium</b>   |    |  |            |                   |                              |             |               |
|                   | ECTS   | 3  | Duration   | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses  |    | K (no information on SWS (weekly contact hours) and course language available)                               |            |                   |                              |             |               |
|                   | Method of assessment   |    | final colloquium (60 minutes)  |            |                   |                              |             |               |
| 10-M-TFU1-091-m01 | <b>Mathematics 1 for students of Technology of Functional Materials</b>              |    |  |            |                   |                              |             |               |
|                   | ECTS   | 10 | Duration   | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses  |    | V + Ü (no information on SWS (weekly contact hours) and course language available)                           |            |                   |                              |             |               |
|                   | Method of assessment   |    | written examination (approx. 90 minutes)   |            |                   |                              |             |               |

|                      |  |  |          |            |                   |                              |             |               |
|----------------------|--|--|----------|------------|-------------------|------------------------------|-------------|---------------|
| o8-IPC-091-m01       | <b>Physical Chemistry for engineering students (lecture and laboratory course)</b>   |  |          |            |                   |                              |             |               |
|                      | ECTS   | 18   | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses  | <p>This module comprises 3 module components. Information on courses will be listed separately for each module component.</p> <ul style="list-style-type: none"> <li>o8-IPC-2-062: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>o8-IPC-1-091: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>o8-IPC-3-091: P (no information on SWS (weekly contact hours) and course language available)</li> </ul>   |          |            |                   |                              |             |               |
|                      | Method of assessment   | <p>Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.</p> <p><b>Assessment in module component o8-IPC-2-062:</b> Physical Chemistry 2 (basics of quantum mechanics and spectroscopy) for engineering students Physical Chemistry 2 (basics of quantum mechanics and spectroscopy) for engineering students</p> <ul style="list-style-type: none"> <li>8 ECTS, Method of grading: numerical grade</li> <li>written examination (approx. 90 minutes)</li> </ul> <p><b>Assessment in module component o8-IPC-1-091:</b> Physical Chemistry 1 (thermodynamics, electrochemistry) for engineering students Physical Chemistry 1 (thermodynamics, electrochemistry) for engineering students</p> <ul style="list-style-type: none"> <li>5 ECTS, Method of grading: numerical grade</li> <li>written examination (approx. 90 minutes)</li> </ul> <p><b>Assessment in module component o8-IPC-3-091:</b> Physical Chemistry for engineering students, laboratory course</p> <ul style="list-style-type: none"> <li>5 ECTS, Method of grading: (not) successfully completed</li> <li>Vortestate (pre-experiment exams, approx. 15 minutes each), assessment of practical performance, Nachtestate (post-experiment exams, approx. 15 minutes each)</li> </ul> |          |            |                   |                              |             |               |
| 99-EL1-091-m01       | <b>Basics of Electronics 1</b>   |  |          |            |                   |                              |             |               |
|                      | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written examination (60 minutes)   |  |          |            |                   |                              |             |               |
| 99-EL2-091-m01       | <b>Basics of Electronics 2</b>   |  |          |            |                   |                              |             |               |
|                      | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written examination (60 minutes)   |  |          |            |                   |                              |             |               |
| 99-CA-091-m01        | <b>Computer-based Construction and Assembly (CAD/CAM)</b>  |  |          |            |                   |                              |             |               |
|                      | ECTS   | 6  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written examination (90 minutes)   |  |          |            |                   |                              |             |               |
| 99-IP-091-m01        | <b>Laboratory Course on Engineering (mechanical and electrical engineering)</b>  |  |          |            |                   |                              |             |               |
|                      | ECTS   | 6  | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | undergraduate |
|                      | Courses  | P (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | placement report / fieldwork report / report on practical training / report on practical course / project report / report on technical course (approx. 15 to 30 pages) |  |          |            |                   |                              |             |               |

|                   |   |  |          |            |                   |                              |             |               |
|-------------------|---|--|----------|------------|-------------------|------------------------------|-------------|---------------|
| 11-PPT-091-m01    | <b>Laboratory course on Physical Technology of Material Synthesis</b>   |  |          |            |                   |                              |             |               |
|                   | ECTS  | 5  | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | undergraduate |
|                   | Courses   | P (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                   | Method of assessment  | a) Preparing the experiment will be considered successfully completed if an oral test (duration: approx. 15 minutes) prior to the experiment is passed. b) Performing and evaluating the experiment will be considered successfully completed if a Testat (exam) is passed. An experiment log (approx. 8 pages) is to be prepared. Each component of the assessment (a and b) can be repeated once in the respective semester. Only if both components of the assessment have been successfully completed in the same semester will the module component be considered successfully completed.   |          |            |                   |                              |             |               |
| 08-MAM-091-m01    | <b>Modern Analytical Methods (lecture and laboratory course)</b>        |  |          |            |                   |                              |             |               |
|                   | ECTS  | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses   | This module comprises 2 module components. Information on courses will be listed separately for each module component. <ul style="list-style-type: none"> <li>o8-MAM-1-091: V (no information on SWS (weekly contact hours) and course language available)</li> <li>o8-MAM-2-091: P (no information on SWS (weekly contact hours) and course language available)</li> </ul>  |          |            |                   |                              |             |               |
|                   | Method of assessment  | Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. <p><b>Assessment in module component o8-MAM-1-091: Modern Analytics</b></p> <ul style="list-style-type: none"> <li>3 ECTS, Method of grading: numerical grade</li> <li>written examination (60 minutes)</li> </ul> <p><b>Assessment in module component o8-MAM-2-091: Modern Analytics (practical course)</b></p> <ul style="list-style-type: none"> <li>2 ECTS, Method of grading: (not) successfully completed</li> <li>Vortestate (pre-experiment exams, approx. 15 minutes each), logs (approx. 5 pages each), Nachtestate (post-experiment exams, approx. 15 minutes)</li> </ul> |          |            |                   |                              |             |               |
| 10-M-TFU2-101-m01 | <b>Mathematics 2 for students of Technology of Functional Materials</b> |  |          |            |                   |                              |             |               |
|                   | ECTS  | 8  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                   | Method of assessment  | written examination (approx. 90 minutes)   |          |            |                   |                              |             |               |

|                      |   |  |          |            |                   |                 |             |               |
|----------------------|---|--|----------|------------|-------------------|-----------------|-------------|---------------|
| o8-IOC-101-m01       | <b>Organic Chemistry for engineering students (lecture and laboratory course)</b> |  |          |            |                   |                 |             |               |
|                      | ECTS  | 12   | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
|                      | Courses   | <p>This module comprises 3 module components. Information on courses will be listed separately for each module component.</p> <ul style="list-style-type: none"> <li>o8-IOC-2-101: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>o8-IOC-3-101: P (no information on SWS (weekly contact hours) and course language available)</li> <li>o8-OC1-1-092: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> </ul>   |          |            |                   |                 |             |               |
|                      | Method of assessment  | <p>Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.</p> <p><b>Assessment in module component o8-IOC-2-101:</b> Organic Chemistry - Laboratory course for students of engineering Organic Chemistry - Laboratory course for students of engineering</p> <ul style="list-style-type: none"> <li>5 ECTS, Method of grading: numerical grade</li> <li>a) 1 to 3 written examinations (1 written examination: 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)</li> </ul> <p><b>Assessment in module component o8-IOC-3-101:</b> Tutorial on the Organic Chemistry for students of engineering</p> <ul style="list-style-type: none"> <li>2 ECTS, Method of grading: (not) successfully completed</li> <li>Vortestate (pre-experiment exams, approx. 15 minutes each), assessment of practical performance, Nachtestate (post-experiment exams, approx. 15 minutes each)</li> </ul> <p><b>Assessment in module component o8-OC1-1-092:</b> Organic Chemistry 1 Organic Chemistry 1</p> <ul style="list-style-type: none"> <li>5 ECTS, Method of grading: numerical grade</li> <li>a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)</li> <li>Other prerequisites: Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).</li> </ul> |          |            |                   |                 |             |               |
|                      | other prerequisites   | By way of exception, additional prerequisites are listed in the section on assessments.  |          |            |                   |                 |             |               |
| Referred to in LPO I | § 62 (1) 2. Chemie "Organische und Bioorganische Chemie"                          |  |          |            |                   |                 |             |               |

|  |   |   |          |            |                   |                 |             |               |
|--|---|---|----------|------------|-------------------|-----------------|-------------|---------------|
| o8-CT-101-m01                                | <b>Molecular Materials (lecture and laboratory course)</b>  |   |          |            |                   |                 |             |               |
|  | ECTS  | 10  | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
|  | Courses   | This module comprises 2 module components. Information on courses will be listed separately for each module component. <ul style="list-style-type: none"> <li>o8-CT-1-101: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>o8-CT-2-101: P (no information on SWS (weekly contact hours) and course language available)</li> </ul> |          |            |                   |                 |             |               |
| Method of assessment                         | Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. <p><b>Assessment in module component o8-CT-1-101:</b> Molecular Materials (Lecture) Molecular Materials (Lecture)</p> <ul style="list-style-type: none"> <li>5 ECTS, Method of grading: numerical grade</li> <li>presentation (approx. 30 minutes) and a) 1 to 3 written examinations (1 written examination: 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)</li> </ul> <p><b>Assessment in module component o8-CT-2-101:</b> Principles of Inorganic Chemistry for Mathematics Majors</p> <ul style="list-style-type: none"> <li>5 ECTS, Method of grading: (not) successfully completed</li> <li>Vortestate (pre-experiment exams, approx. 15 minutes each), logs (approx. 5 pages each), Nachtestate (post-experiment exams, approx. 15 minutes)</li> </ul> |   |          |            |                   |                 |             |               |
| 11-TMS-101-m01                               | <b>Introduction to the Physics of Functional Materials</b>  |   |          |            |                   |                 |             |               |
|  | ECTS  | 5   | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
|  | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)  |          |            |                   |                 |             |               |
| Method of assessment                         | written examination (approx. 120 minutes)   |   |          |            |                   |                 |             |               |
| o3-TV-101-m01                                | <b>Technology of Composite Materials (lecture and laboratory course)</b>  |   |          |            |                   |                 |             |               |
|  | ECTS  | 5   | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
|  | Courses   | This module comprises 2 module components. Information on courses will be listed separately for each module component. <ul style="list-style-type: none"> <li>o3-TV-1-091: V (no information on SWS (weekly contact hours) and course language available)</li> <li>o3-TV-2-101: P (no information on SWS (weekly contact hours) and course language available)</li> </ul>     |          |            |                   |                 |             |               |
| Method of assessment                         | Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. <p><b>Assessment in module component o3-TV-1-091:</b> Technology of Composite Materials</p> <ul style="list-style-type: none"> <li>3 ECTS, Method of grading: numerical grade</li> <li>written examination (60 minutes)</li> </ul> <p><b>Assessment in module component o3-TV-2-101:</b> Technology of Composite Materials, laboratory course</p> <ul style="list-style-type: none"> <li>2 ECTS, Method of grading: (not) successfully completed</li> <li>oral examination (approx. 15 minutes) and logs (approx. 5 pages each)</li> </ul>   |   |          |            |                   |                 |             |               |
| <b>Compulsory Electives (5 ECTS credits)</b> |   |   |          |            |                   |                 |             |               |
| 10-I-EPIN-o62-m01                            | <b>Introduction to computer science of all faculties</b>  |   |          |            |                   |                 |             |               |
|  | ECTS  | 5   | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
|  | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)  |          |            |                   |                 |             |               |
| Method of assessment                         | written examination (50 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 25 minutes, groups of 3: 25 minutes)   |   |          |            |                   |                 |             |               |



|                   |  |  |          |            |                   |                              |             |               |
|-------------------|--|--|----------|------------|-------------------|------------------------------|-------------|---------------|
| 10-I-DB-072-m01   | <b>Data bases</b>  |  |          |            |                   |                              |             |               |
|                   | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                   | Method of assessment   | written examination (50 minutes) or oral examination (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)  |          |            |                   |                              |             |               |
| 11-N1-072-m01     | <b>Basics of Nanostructure Technology</b>  |  |          |            |                   |                              |             |               |
|                   | ECTS   | 6  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses  | V + S (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                   | Method of assessment   | written examination (approx. 90 minutes)   |          |            |                   |                              |             |               |
| 10-M-ODE-082-m01  | <b>Ordinary Differential Equations</b>   |  |          |            |                   |                              |             |               |
|                   | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                   | Method of assessment   | written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes)<br>Language of assessment: German, English if agreed upon with the examiner   |          |            |                   |                              |             |               |
|                   | other prerequisites  | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. |          |            |                   |                              |             |               |
| 08-PKC-092-m01    | <b>Programming course for Chemistry Majors</b>   |  |          |            |                   |                              |             |               |
|                   | ECTS   | 5  | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | undergraduate |
|                   | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                   | Method of assessment   | practical examination: completion of programming exercises and oral description of algorithms used (length/expenditure of time as specified at the beginning of the course)  |          |            |                   |                              |             |               |
| 03-TF-FBM-101-m01 | <b>Functional Biomaterials for students of Technology of Functional Materials. Lectures, laboratory course</b> |  |          |            |                   |                              |             |               |
|                   | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                   | Courses  | V + P (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                   | Method of assessment   | placement report / fieldwork report / report on practical training / report on practical course / project report / report on technical course (approx. 10 pages) and written examination (approx. 60 minutes)  |          |            |                   |                              |             |               |

|                  |  |  |          |            |                   |                 |             |               |
|------------------|--|--|----------|------------|-------------------|-----------------|-------------|---------------|
| o8-NT-101-m01    | <b>Chemically and biologically inspired Nanotechnology for Materials Synthesis</b> |  |          |            |                   |                 |             |               |
|                  | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
|                  | Courses  | This module comprises 2 module components. Information on courses will be listed separately for each module component. <ul style="list-style-type: none"> <li>o8-NT-1-101: V (no information on SWS (weekly contact hours) and course language available)</li> <li>o8-NT-2-101: V (no information on SWS (weekly contact hours) and course language available)</li> </ul>  |          |            |                   |                 |             |               |
|                  | Method of assessment   | Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. <p><b>Assessment in module component o8-NT-1-101:</b> Chemically and biologically inspired Nanotechnology for Materials Synthesis</p> <ul style="list-style-type: none"> <li>2 ECTS, Method of grading: numerical grade</li> <li>oral examination (approx. 15 minutes)</li> </ul> <p><b>Assessment in module component o8-NT-2-101:</b> From Biomineralisation to biologically inspired Materials Synthesis</p> <ul style="list-style-type: none"> <li>3 ECTS, Method of grading: numerical grade</li> <li>oral examination (approx. 20 minutes)</li> </ul> |          |            |                   |                 |             |               |
| o8-BC-TF-o82-m01 | <b>Biochemistry for Engineering Majors</b>   |  |          |            |                   |                 |             |               |
|                  | ECTS   | 3  | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
|                  | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                 |             |               |
|                  | Method of assessment   | written examination (60 minutes)   |          |            |                   |                 |             |               |
| 10-M-FAN-072-m01 | <b>Introduction to Functional Analysis</b>   |  |          |            |                   |                 |             |               |
|                  | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade | Modul level | undergraduate |
|                  | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                 |             |               |
|                  | Method of assessment   | written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes)<br>Language of assessment: German, English if agreed upon with the examiner   |          |            |                   |                 |             |               |
|                  | other prerequisites  | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.   |          |            |                   |                 |             |               |
|                  | Referred to in LPO I   | § 73 (1) 1. Mathematik Analysis  |          |            |                   |                 |             |               |

|                  |  |  |          |            |                   |                              |             |               |
|------------------|--|--|----------|------------|-------------------|------------------------------|-------------|---------------|
| 10-M-NM1-082-mo1 | <b>Numerical Mathematics 1</b>   |  |          |            |                   |                              |             |               |
|                  | ECTS   | 8  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                  | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                  | Method of assessment   | written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes)<br>Language of assessment: German, English if agreed upon with the examiner   |          |            |                   |                              |             |               |
|                  | other prerequisites  | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. |          |            |                   |                              |             |               |
|                  | Referred to in LPO I   | § 73 (1) 5. Mathematik Angewandte Mathematik   |          |            |                   |                              |             |               |
| 10-M-NM2-082-mo1 | <b>Numerical Mathematics 2</b>   |  |          |            |                   |                              |             |               |
|                  | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                  | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                  | Method of assessment   | written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes)<br>Language of assessment: German, English if agreed upon with the examiner   |          |            |                   |                              |             |               |
|                  | other prerequisites  | Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. |          |            |                   |                              |             |               |
|                  | Referred to in LPO I   | § 73 (1) 5. Mathematik Angewandte Mathematik   |          |            |                   |                              |             |               |
| 10-M-PRG-082-mo1 | <b>Programming course for students of Mathematics and other subjects</b> |  |          |            |                   |                              |             |               |
|                  | ECTS   | 3  | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | undergraduate |
|                  | Courses  | P (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                  | Method of assessment   | project in the form of programming exercises (as specified at the beginning of the course)<br>Language of assessment: German, English if agreed upon with the examiner   |          |            |                   |                              |             |               |
|                  | other prerequisites  | Admission prerequisite to assessment: regular attendance (attendance monitored, a maximum of one incident of unexcused absence).   |          |            |                   |                              |             |               |
|                  | Referred to in LPO I   | § 73 (1) 5. Mathematik Angewandte Mathematik   |          |            |                   |                              |             |               |

|                      |   |  |          |            |                   |                              |             |               |
|----------------------|---|--|----------|------------|-------------------|------------------------------|-------------|---------------|
| 10-M-COM-o82-m01     | <b>Computeroriented Mathematics</b>   |  |          |            |                   |                              |             |               |
|                      | ECTS  | 3  | Duration | 1 semester | Method of grading | (not) successfully completed | Modul level | undergraduate |
|                      | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
|                      | Method of assessment  | project in the form of programming exercises (as specified at the beginning of the course)<br>Assessment offered: once a year, summer semester<br>Language of assessment: German, English if agreed upon with the examiner |          |            |                   |                              |             |               |
|                      | other prerequisites   | Admission prerequisite to assessment: regular attendance of exercises (attendance monitored, a maximum of one incident of unexcused absence).  |          |            |                   |                              |             |               |
| Referred to in LPO I | § 73 (1) 5. Mathematik Angewandte Mathematik  |  |          |            |                   |                              |             |               |
| 09-AG-102-m01        | <b>Analysis of Geomaterials</b>   |  |          |            |                   |                              |             |               |
|                      | ECTS  | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written or oral examination of one candidate each or presentation (30 minutes each) |  |          |            |                   |                              |             |               |
| 09-WG-102-m01        | <b>Economic Geology</b>   |  |          |            |                   |                              |             |               |
|                      | ECTS  | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses   | S (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written or oral examination of one candidate each or presentation (30 minutes each) |  |          |            |                   |                              |             |               |
| 09-SE-102-m01        | <b>Stratigraphy and Earth History</b>   |  |          |            |                   |                              |             |               |
|                      | ECTS  | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written or oral examination of one candidate each or presentation (30 minutes each) |  |          |            |                   |                              |             |               |
| 09-PT-102-m01        | <b>Petrology</b>  |  |          |            |                   |                              |             |               |
|                      | ECTS  | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written or oral examination of one candidate each or presentation (30 minutes each) |  |          |            |                   |                              |             |               |
| 09-GW-102-m01        | <b>Geochemistry and Geohydrology</b>  |  |          |            |                   |                              |             |               |
|                      | ECTS  | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written or oral examination of one candidate each or presentation (30 minutes each) |  |          |            |                   |                              |             |               |
| 09-GM-102-m01        | <b>Rock Identification under the Microscope</b>                                     |  |          |            |                   |                              |             |               |
|                      | ECTS  | 5  | Duration | 1 semester | Method of grading | numerical grade              | Modul level | undergraduate |
|                      | Courses   | V + Ü (no information on SWS (weekly contact hours) and course language available)   |          |            |                   |                              |             |               |
| Method of assessment | written or oral examination of one candidate each (30 minutes each)                 |  |          |            |                   |                              |             |               |

| Thesis (12 ECTS credits)                      |  |  |          |            |                   |                 |                             |
|---|--|--|----------|------------|-------------------|-----------------|-----------------------------|
| o8-BT-o62-m01                                 | <b>Bachelor's Thesis</b>                               |  |          |            |                   |                 |                             |
|   | ECTS   | 12   | Duration | 1 semester | Method of grading | numerical grade | Modul level   undergraduate |
|   | Courses  | no courses assigned  |          |            |                   |                 |                             |
|   | Method of assessment                                   | written thesis<br>Language of assessment: German or English                        |          |            |                   |                 |                             |
|   | other prerequisites                                    | Registration for assessment on a continuous basis as agreed upon with supervisor.  |          |            |                   |                 |                             |
| Subject-specific Key Skills (10 ECTS credits) |  |  |          |            |                   |                 |                             |
| o8-FS1-101-m01                                | <b>Materials Science 1 (Basic Introduction)</b>        |  |          |            |                   |                 |                             |
|   | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade | Modul level   undergraduate |
|   | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available) |          |            |                   |                 |                             |
|   | Method of assessment                                   | written examination (90 minutes)   |          |            |                   |                 |                             |
| o8-FS2-101-m01                                | <b>Materials Science 2 (The Major Material Groups)</b> |  |          |            |                   |                 |                             |
|   | ECTS   | 5  | Duration | 1 semester | Method of grading | numerical grade | Modul level   undergraduate |
|   | Courses  | V + Ü (no information on SWS (weekly contact hours) and course language available) |          |            |                   |                 |                             |
|   | Method of assessment                                   | written examination (approx. 90 minutes)   |          |            |                   |                 |                             |