M.SC. CHEMISTRY AND PHYSICS OF FUNCTIONAL MATERIALS
M.SC. CHEMIE UND PHYSIK FUNKTIONALER MATERIALIEN

General Information April, 2020
TODAY’S TOPICS

- Welcome
- (y)our university, (y)our faculty, (y)our professors
- Modules
- Route of study
- Organizational Issues
- Next steps
- Further questions?

Further Information (LINK)
OVERVIEW

➢ Degree
  - Master of Science (M.Sc.)
  - enabling for doctoral research
  - 300 LP in B.Sc. + M.Sc.

➢ Duration
  - 3 semester (90 LP)
  - optional 4 semester (120 LP)

➢ Specialty
  - interdisciplinary and research oriented
  - individually structured
  - general overview on functional materials
  - more in the fields of the local research groups in Chemistry and Physics
since 1990 university
earlier „Erziehungs-
wissenschaftliche
Hochschule Rhein-
land-Pfalz (EWH)“
today
more than 16500 students
on both campi
(nearly 8500 in Koblenz)
since 2013 second largest
university in the state
Rheinland-Pfalz
(Rhineland-Palatinate)
FACULTY 3: MATHEMATICS / NATURAL SCIENCES

Institut for Integrated Natural Sciences (IfIN)

Departments of Chemistry and Physics

Campus Koblenz
YOUR PROFESSORS

Wolfgang Imhof
Organic Chemistry
M318

Peter Quirmbach
Technical Chemistry
M116

Silke Rathgeber
Material-physics
G428

Joachim Scholz
Inorganic Chemistry
M219

Christian Fischer
Experimental Physics
G429
GUIDING THEME IN RESEARCH

Material & Environment

Faculty 3: Mathematics / Natural Sciences

- Material Properties and Functional Surfaces
- Modeling and Simulation
- Biodiversity and Ecosystems

Education
STUDY PROGRAMS

Material & Environment

Faculty 3: Mathematics / Natural Sciences

Bachelor
- B.Sc. Angewandte Naturwissenschaften (Applied Sciences) since 2011
- Double-Subject-Bachelor (B.A./B.Sc.) Education (B.Ed./M.Ed.) since 2013

Master
- B.Sc. Mathematische Modellierung (Math. Modeling) since 2015
- B.Sc. BioGeo-Wissenschaften (BioGeoSciences) since 2005
- M.Sc. Applied Physics since 2015 in cooperation with...
- M.Sc. BioGeo-Wissenschaften (BioGeoSciences) since 2008
- M.Eng. Ceramic Science and Engineering since 2012 in cooperation with...

Education BBS in cooperation with since 2008

Chemistry Physics Mathematics Sports Science Biology Geography Nutrition and Consumer Education
Our Guiding Principle

Interdisciplinary problem solving competence in the field of material properties and functional materials

- Appropriate programs especially in the fields of plastics, coatings, corrosion, surface and interfacial phenomena, high-temperature-materials, catalyzers and rare earth elements.

- Inter-semester and inter-disciplinary network between students and scientists.

- One approach in the educational sector to increase the future viability of the region.
<table>
<thead>
<tr>
<th><strong>Module</strong></th>
<th><strong>Title</strong></th>
<th><strong>Credit Points</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compulsory modules (15 LP)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03PH2501</td>
<td>Solid State Physics</td>
<td>6</td>
</tr>
<tr>
<td>03XX2401</td>
<td>Synthesis and Characterization of Functional Materials</td>
<td>9</td>
</tr>
<tr>
<td><strong>Research Work (45 LP)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03XX2402</td>
<td>Research Project (Projektarbeit)</td>
<td>15</td>
</tr>
<tr>
<td>03XX2490</td>
<td>Master Thesis (Masterarbeit)</td>
<td>25</td>
</tr>
<tr>
<td>03XX2499</td>
<td>Oral Final Exam (Mündliche Abschlussprüfung)</td>
<td>5</td>
</tr>
</tbody>
</table>

Due the current pandemic situation all practical modules are canceled until further notice.

**color code:** always in English, if requested in English, only in German
### ADVANCED MODULES (18 LP – 30 LP)

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>credit points [LP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>03CH2401</td>
<td>Modern concepts of inorganic chemistry</td>
<td>6</td>
</tr>
<tr>
<td>03CH2402</td>
<td>Thermochemistry</td>
<td>6</td>
</tr>
<tr>
<td>03CH2403</td>
<td>Polymer chemistry and ingredient Synthesis</td>
<td>6</td>
</tr>
<tr>
<td>03PH2503</td>
<td>Physics of Metals</td>
<td>6</td>
</tr>
<tr>
<td>03PH2504</td>
<td>Surface Science</td>
<td>6</td>
</tr>
<tr>
<td>03PH2505</td>
<td>Polymer Science</td>
<td>6</td>
</tr>
</tbody>
</table>

For other courses there is an online substitute. Please, check Klips for further details!

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## ELECTIVE MODULES 1

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>credit points [LP]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elective modules (up to 12 LP) as specialization in main topics</td>
<td></td>
</tr>
<tr>
<td>03CH2404</td>
<td>Analytical Chemistry (Analytische Chemie)</td>
<td>7</td>
</tr>
<tr>
<td>03CH2405</td>
<td>Technical Chemistry (Technische Chemie)</td>
<td>7</td>
</tr>
<tr>
<td>03CH2406</td>
<td>Biochemistry (Biochemie)</td>
<td>7</td>
</tr>
<tr>
<td>03CH2407</td>
<td>Current topics in chemistry (Aktuelle Fragen der Chemie)</td>
<td>7</td>
</tr>
<tr>
<td>03PH2402</td>
<td>Current issues in physics (various lectures in English) (Aktuelle Fragen der Physik)</td>
<td>6</td>
</tr>
</tbody>
</table>

For other courses there is a online substitute. Please, check Klips for further details!

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## ELECTIVE MODULES 2

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>credit points [LP]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elective modules (up to 12 LP) as extension of knowledge in neighboring fields</td>
<td></td>
</tr>
<tr>
<td>03BI1317</td>
<td>Environment Microbiology (Umweltmikrobiologie)</td>
<td>6</td>
</tr>
<tr>
<td>03GE2308</td>
<td>Soil Function and Soil Protection (Bodenfunktion und Bodenschutz)</td>
<td>6</td>
</tr>
<tr>
<td>03MA1107</td>
<td>Stochastic (Einführung in die Stochastik)</td>
<td>8</td>
</tr>
<tr>
<td>03MA2401</td>
<td>Modeling and Simulating for Natural Scientists (Modellieren und Simulieren für Naturwissenschaftler)</td>
<td>6</td>
</tr>
</tbody>
</table>

For other courses there is a online substitute. Please, check Klips for further details!

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# ELECTIVE MODULES 3

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>credit points [LP]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elective modules (up to 12 LP) as extension of knowledge in neighboring fields</td>
<td></td>
</tr>
<tr>
<td>04IM2008</td>
<td>New Business Development (SS)</td>
<td>6</td>
</tr>
<tr>
<td>04IM2009</td>
<td>Entrepreneurial Design Thinking (WS)</td>
<td>6</td>
</tr>
<tr>
<td>04IN2007</td>
<td>Real-Time Systems (Echtzeitsysteme) (WS)</td>
<td>6</td>
</tr>
<tr>
<td>04IN2026</td>
<td>Introduction to Web Science (WS)</td>
<td>8</td>
</tr>
<tr>
<td>04IN2035</td>
<td>Wireless Communication (Drahtlose Kommunikation) (WS)</td>
<td>6</td>
</tr>
<tr>
<td>04WI2024</td>
<td>Information Design (WS)</td>
<td>6</td>
</tr>
</tbody>
</table>

For other courses there is a online substitute. Please, check Klips for further details!

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## ELECTIVE MODULES IN ENGLISH (0 – 12 LP)

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>credit points [LP]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elective modules (up to 12 LP) as extension of knowledge in neighboring fields</td>
<td></td>
</tr>
<tr>
<td>04IM2008</td>
<td>Risk Management in verteilten Systemen (SS) (IT Risk Management)</td>
<td>6</td>
</tr>
<tr>
<td>04PH2402</td>
<td>Current issues in physics (various lectures)</td>
<td>6</td>
</tr>
</tbody>
</table>

For other courses there is a online substitute
Please, check Klips for further details!

**color code:** always in English, if requested in English, only in German
compulsory modules 60 LP
specialization modules 18 LP
elective modules in
physics (0-12 LP), chemistry (0-12 LP),
economics (0-18 LP), computer science (0-18 LP) 12 LP
= 90 LP

Therefore the master program is offered in English only!

Further elective modules are only offered in German:
chemistry (28 LP), mathematics (14 LP),
computer science (12 LP), physics (6 LP), biology (6 LP),
geo sciences (6 LP), economics (6 LP)
# Route of Study (Starting Winter)

<table>
<thead>
<tr>
<th>Sem</th>
<th>Synthesis and Characterization of Functional Materials</th>
<th>3-5 Advanced Modules</th>
<th>0-2 Elective Modules</th>
<th>Research Project</th>
<th>LP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9 LP</td>
<td>6 LP</td>
<td>Σ 18-30 LP</td>
<td>Σ 0-12 LP</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>9 LP</td>
<td>6 LP</td>
<td>Σ 18-30 LP</td>
<td>Σ 0-12 LP</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Due the current pandemic situation all practical modules are canceled until further notice.</td>
<td>Master thesis</td>
<td>Oral Final Exam</td>
<td>25 LP</td>
<td>30</td>
</tr>
<tr>
<td>M.Sc.</td>
<td></td>
<td>25 LP</td>
<td>5 LP</td>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>
## ROUTE OF STUDY (STARTING SUMMER)

<table>
<thead>
<tr>
<th>Sem</th>
<th>Course Title</th>
<th>Module Details</th>
<th>LP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Synthesis and Characterization of Functional Materials</td>
<td>Solid State Physics</td>
<td>6 LP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-5 Advanced Modules</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0-2 Elective Modules</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research Project</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Synthesis and Characterization of Functional Materials</td>
<td>3-5 Advanced Modules</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0-2 Elective Modules</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research Project</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Σ 18-30 LP</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Σ 0-12 LP</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Σ 15 LP</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Due the current pandemic situation all practical modules are canceled until further notice.</td>
<td>Master Thesis</td>
<td>25 LP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oral Final Exam</td>
<td>5 LP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Master Thesis</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oral Final Exam</td>
<td>90</td>
</tr>
</tbody>
</table>

Due the current pandemic situation all practical modules are canceled until further notice.
MODULE 03XX2401 IN SUMMER 2020

Enrollment and Cancellation for courses ends on May, 4\textsuperscript{th} 2020

Lecture materials in OLAT:
https://olat.vcrp.de/auth/RepositoryEntry/1559986898/CourseNode/93411831834882
Password will be send via Klips to enrolled students. For further details, e.g. availability (chat, video-conference) of the lecturers see Klips.

Seminar:
Video-conference, topic and date in coordination with the individual professors.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon, April 27\textsuperscript{th}, 2020</td>
<td>2.00 pm</td>
<td>Imhof</td>
</tr>
<tr>
<td>Tue, April 28\textsuperscript{th}, 2020</td>
<td>4.00 pm</td>
<td>Students’ presentation</td>
</tr>
<tr>
<td></td>
<td>5.00 pm</td>
<td>Students’ presentation</td>
</tr>
<tr>
<td>Mon, May 4\textsuperscript{th}, 2020</td>
<td>2.00 pm</td>
<td>Imhof</td>
</tr>
<tr>
<td>Tue, May 5\textsuperscript{th}, 2020</td>
<td>4.00 pm</td>
<td>Students’ presentation</td>
</tr>
<tr>
<td></td>
<td>5.00 pm</td>
<td>Students’ presentation</td>
</tr>
</tbody>
</table>
MODULE 03XX2401 IN SUMMER 2020

Mon, May 11th, 2020
Tue, May 12th, 2020
Mon, May 18th, 2020
Tue, May 19th, 2020
Mon, May 25th, 2020
Tue, May 26th, 2020
Mon, June 8th, 2020
Tue, June 9th, 2020
Mon, June 15th, 2020
Tue, June 16th, 2020
Mon, June 22nd, 2020
Tue, June 23rd, 2020
Mon, June 29th, 2020
Tue, June 30th, 2020
Mon, July 6th, 2020
Tue, July 7th, 2020

2.00 pm  Fischer
4.00 pm, 5.00 pm  Students’ presentation
2.00 pm  Fischer
4.00 pm, 5.00 pm  Students’ presentation
2.00 pm  Rathgeber
4.00 pm, 5.00 pm  Students’ presentation
2.00 pm  Rathgeber
4.00 pm, 5.00 pm  Students’ presentation
2.00 pm  Scholz
4.00 pm, 5.00 pm  Students’ presentation
2.00 pm  Scholz
4.00 pm, 5.00 pm  Students’ presentation
2.00 pm  Quirmbach
4.00 pm, 5.00 pm  Students’ presentation
2.00 pm  Quirmbach
4.00 pm, 5.00 pm  Students’ presentation
(last)

If changes appear, they will be organized by the professors
Monday, April 20\textsuperscript{th}, 2020

2.00 pm Written Exam (Sub-module exam 35240159)
Postponed until further notice!

Monday, July 13\textsuperscript{th}, 2020

2.00 pm Written Exam
(Sub-module exam 35240169)

Lastest registration in Klips 14 days ahead, i.e. June 29\textsuperscript{th}, 2020.
Without exam registration in Klips you cannot take the exam!
Module 03XX2401: Synthesis and characterization of functional materials

Attendance of 8 talks
(contributions of students, invited talks, relevant topics in group seminars)
within one year for
the Master program „Chemistry and Physics of functional Materials“

| Name of student: |
| Registration-No.: |

<table>
<thead>
<tr>
<th>Title of Talk attended</th>
<th>Date</th>
<th>Signature of supervising Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td></td>
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<tr>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td></td>
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<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Own Presentation
Topic:
Date:
Grade:
Please register for **all courses** and lectures and **each** exam
It is obligatory!

**also available in English**

**all courses start in KW 17 (April 20th)**
OLAT (WWW.VCRP.DE)
You can choose a convenient language for you in “System Settings”
EVALUATION

in June 2020

your version will be in English

Please participate!
ORGANIZATIONAL ISSUES ON EXAMS

Written exam

➤ all courses of the module have to be documented (in KLIPS) before taking a sub-module exam, but as soon as all courses are done (de-register if necessary in time) the exam has to be taken

➤ first trial has to be done end of this semester or beginning of next semester (decision has to be done before end of registration to exam in this semester – else failed once)

➤ register resp. de-register in KLIPS until 14 days before exams (starting now)

➤ up to three attempts, but none for improvement

➤ use only of technical aids permitted by the lecturer (e.g. formulary, calculator)

➤ no electronic devices within reach (if so, failed)

➤ The seminar presentation counts as one exam as well. So you have to agree with one professor on a presentation date and topic and register for this exam in Klips as well!
ORGANIZATIONAL ISSUES ON EXAMS

Oral exam

➢ all courses of the module have to be documented (in KLIPS) before taking a module exam, but as soon as all courses are done (de-register if necessary in time) the exam has to be taken

➢ first trial has to be done end of this semester or begin of next semester (decision has to be done before end of registration to exam in this semester – else failed once)

➢ register in KLIPS (exams are sorted by date of exam not course)

➢ register resp. unsubscribe till 14 days before exams (starting now)

➢ up to three attempts, but none for improvement

➢ date is arranged with lecturer prior enrollment in KLIPS
NEXT THINGS TO DO

> Important: Enroll for courses within this week in order to ensure communications via Klips!

> Enroll for safety instructions (in German as a seminar, in English on paper)
Due the current pandemic situation all practical modules are canceled until further notice. The seminar will be rescheduled in time. The safety instructions can be found in OLAT (LINK)

> Further Questions?
• Student council (Fachschaft): AnNa + CPfM = ca. 50
  fsangewandte@uni-koblenz.de
• Check Klips for details on the availability and mode of courses.
• Further details will be send to you by the individual lecturers at the beginning of the course via Klips.
• Secretaries office Chemistry (Link) and Physics Department (Link).
MUTUAL BOARD OF EXAMINERS

Bachelor *Angewandte Naturwissenschaften* (Applied Natural Sciences) and
Master *Chemistry and Physics of Functional Materials* (Chemie und Physik funktionaler Materialien)

- Prof. Dr. Silke Rathgeber (chairwoman)
- Prof. Dr. Wolfgang Imhof
- Prof. Dr. Werner Manz
- Prof. Dr. Joachim Scholz
- Dr. Almuth Sax
- Petra Kires
- Simon Nickel (student)