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 „Erziehungswissenschaftliche Hochschule Rheinland-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

since 2002

since 2011
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.)
Chemistry  Physics  Mathematics  Sports Science  Biology  Geography  Nutrition and Consumer Education

Master


M.Sc. BioGeo-Wissenschaften (BioGeoSciences) since 2008

M.Sc. Mathematische Modellierung (Math. Modeling) since 2015

M.Sc. BioGeo-Wissenschaften (BioGeoSciences) since 2005


M.Eng. Ceramic Science and Engineering since 2012 in cooperation with
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, catalysts 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.
## COMPULSORY MODULES

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Title</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<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></td>
<td><strong>Compulsory modules (15 LP)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Research Work (45 LP)</strong></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</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>Applied Theoretical Physics</td>
<td>6</td>
</tr>
<tr>
<td></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>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>Elective modules (up to 12 LP) as extension of knowledge in neighboring fields</td>
<td></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 (up to 12 LP) as extension of knowledge in neighboring fields

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>credit points [LP]</th>
</tr>
</thead>
<tbody>
<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 an 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!

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SUMMARY

➢ 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></td>
<td></td>
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<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Synthesis and Characterization of Functional Materials</td>
<td>Solid State Physics</td>
<td>3-5 advanced modules</td>
<td></td>
<td>30</td>
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<tr>
<td></td>
<td>9 LP</td>
<td>6 LP</td>
<td>Σ 18-30 LP</td>
<td>Σ 0-12 LP</td>
<td>Σ 15 LP</td>
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<tr>
<td>3</td>
<td><strong>Due the current pandemic situation all practical modules are canceled until further notice.</strong></td>
<td></td>
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</tbody>
</table>

M.Sc. | 25 LP | 5 LP | 90 |
# ROUTE OF STUDY (STARTING SUMMER)

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<td>6 LP</td>
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<td></td>
<td></td>
<td>9 LP, [\sum 18-30 \text{ LP}]</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>15 LP, [\sum 0-12 \text{ LP}]</td>
</tr>
<tr>
<td>3</td>
<td>Due the current pandemic situation all practical modules are canceled until further notice.</td>
<td></td>
<td></td>
<td></td>
<td>Master Thesis</td>
<td>30</td>
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<td></td>
<td>Oral Final Exam</td>
<td>25 LP</td>
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<td></td>
<td></td>
<td>5 LP</td>
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<tr>
<td>M.Sc.</td>
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<td>90</td>
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</tbody>
</table>

Due to the current pandemic situation all practical modules are canceled until further notice.
Enrollment and Cancellation for courses ends on May, 4th 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 27th, 2020</td>
<td>2.00 pm</td>
<td>Imhof</td>
</tr>
<tr>
<td>Tue, April 28th, 2020</td>
<td>4.00 pm</td>
<td>Students’ presentation</td>
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<tr>
<td></td>
<td>5.00 pm</td>
<td>Students’ presentation</td>
</tr>
<tr>
<td>Mon, May 4th, 2020</td>
<td>2.00 pm</td>
<td>Imhof</td>
</tr>
<tr>
<td>Tue, May 5th, 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>
Mon, May 11th, 2020  2.00 pm  Fischer
Tue, May 12th, 2020  4.00 pm, 5.00 pm  Students’ presentation
Mon, May 18th, 2020  2.00 pm  Fischer
Tue, May 19th, 2020  4.00 pm, 5.00 pm  Students’ presentation
Mon, May 25th, 2020  2.00 pm  Rathgeber
Tue, May 26th, 2020  4.00 pm, 5.00 pm  Students’ presentation
Mon, June 8th, 2020  2.00 pm  Rathgeber
Tue, June 9th, 2020  4.00 pm, 5.00 pm  Students’ presentation
Mon, June 15th, 2020  2.00 pm  Scholz
Tue, June 16th, 2020  4.00 pm, 5.00 pm  Students’ presentation
Mon, June 22th, 2020  2.00 pm  Scholz
Tue, June 23th, 2020  4.00 pm, 5.00 pm  Students’ presentation
Mon, June 29th, 2020  2.00 pm  Quirmbach
Tue, June 30th, 2020  4.00 pm, 5.00 pm  Students’ presentation
Mon, July 6th, 2020  2.00 pm  Quirmbach
Tue, July 7th, 2020  4.00 pm, 5.00 pm  Students’ presentation

(last)
Monday, April 20th, 2020
2.00 pm Written Exam (Sub-module exam 35240159)
Postponed until further notice!

Monday, July 13th, 2020
2.00 pm Written Exam
(Sub-module exam 35240169)

Latest registration in Klips 14 days ahead, i.e. June 29th, 2020.
Without exam registration in Klips you cannot take the exam!
Module (03XX2401): Synthesis and characterization of functional materials

Attendance of 6 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>
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<tr>
<td>2</td>
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<td>5</td>
<td></td>
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<tr>
<td>6</td>
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</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 20\textsuperscript{th})*
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!
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)