<table>
<thead>
<tr>
<th>Masterarbeit</th>
<th>RESE M MSc</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relevance</strong></td>
<td><strong>compulsory</strong></td>
</tr>
<tr>
<td>for ResEngin curriculum</td>
<td></td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>ResEngin Office</td>
</tr>
<tr>
<td><strong>Contact</strong></td>
<td>res.eng@bgعز.uka.de</td>
</tr>
<tr>
<td><strong>Term(s) offered</strong></td>
<td>4th term (Summer Apr–Sept)</td>
</tr>
<tr>
<td>**Duration</td>
<td>Cycle**</td>
</tr>
<tr>
<td><strong>Language of instruction</strong></td>
<td>English / German</td>
</tr>
<tr>
<td><strong>Prerequisites</strong></td>
<td>M 1–M 9</td>
</tr>
<tr>
<td><strong>Module coordinator</strong></td>
<td>KÄMPF, Dr.rer.nat. Charlotte; IWG-WK (Academic Co-Director)</td>
</tr>
<tr>
<td><strong>Learning outcomes</strong></td>
<td>Description see p. 2.</td>
</tr>
<tr>
<td><strong>Literature / Course materials</strong></td>
<td>Reference list see p. 3.</td>
</tr>
<tr>
<td><strong>Basis for module(s)</strong></td>
<td>n.a.</td>
</tr>
<tr>
<td><strong>Intersection with module(s)</strong></td>
<td>n.a.</td>
</tr>
</tbody>
</table>

**Lecture courses** (training mode)

<table>
<thead>
<tr>
<th>Part I</th>
<th>Master thesis (research under supervision)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25.0 CP 18 wks.</td>
</tr>
<tr>
<td>Part II</td>
<td>Institutions for Development Coop. (seminar)</td>
</tr>
<tr>
<td></td>
<td>5.0 CP 2 wks</td>
</tr>
</tbody>
</table>

**SUM** 30.0 CP 20 wks.

**Workload specification**

(30 work hours → 1 CP acc. ECTS) 30 x 30 h 900 h

**April–July**

- Contact hours 90.0 h
- Data collection 150.0 h
- Data analysis 270.0 h
- Thesis synthesis 240.0 h

**August**

- Self instruction hours 150.0 h

**Module examination(s)** (mode | scope | weighting)

- "Master Thesis" thesis | 8–10.000 w. | 25.0/30.0 CP
- "Colloquium" presentation, Q&A | 60 min | 5.0/30.0 CP

**Lecturers** (in alphabetic order)

- KÄMPF, Dr.rer.nat. Charlotte; IWG-WK
- all Resources Engineering lecturers; KIT

**Individual lecture courses**

Descriptions + Recommended background knowledge see pp. 4.
Module MSc: “Masterarbeit” (cont.)

**Module topic**

Independent research for the definition of an engineering solution to a problem in the filed of natural resources or renewable resources.

**Learning outcomes**

**Disciplinary knowledge**

- **concepts, theories & definitions**
  study context of the Master degree program (incl. subject area of individual specialization).

- **subject matter (factual data, examples)**
  Specialized knowledge of a subject area as foundation for the student’s research.

- **methods & procedures**

**Professional skills**

- Expertise in workflow optimization, data collection and data analysis. Independent management and transformation of a complex and unpredictable problem from the general field of study contexts of the Master degree program “Resources Engineering” (including related subject areas) utilizing scientific state-of-the-art research methods.

- Present findings of original research.

**Personal Competence**

- Taking responsibility for contributing to professional knowledge.

- Defend findings of original research.
Module MSc: “Masterarbeit” (cont.)

Literature/ Course material
### Module MSc

**Masterarbeit**

### Part I: Master Thesis

<table>
<thead>
<tr>
<th>KIT Lecture ID</th>
<th>n.a.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>compulsory</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>Modules M 1–9, + 3 comp. modules from M T 1 ... T 5</td>
</tr>
<tr>
<td>Term(s)</td>
<td>4th term (summer)</td>
</tr>
<tr>
<td>Language</td>
<td>English/ German</td>
</tr>
<tr>
<td>Training mode</td>
<td>Data collection, 6 wks Data analysis, 8 wks Synthesis, 6 wks</td>
</tr>
<tr>
<td>Workload</td>
<td>25.0 CP ⇒ 750 h</td>
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</table>

#### Workload specification

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Task</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>APRIL - JUNE</td>
<td><strong>Contact</strong></td>
<td>90 h</td>
</tr>
<tr>
<td></td>
<td><strong>Data Collection</strong></td>
<td>180 h</td>
</tr>
<tr>
<td></td>
<td><strong>Analysis</strong></td>
<td>270 h</td>
</tr>
<tr>
<td>JUNE / JULY</td>
<td><strong>Synthesis</strong></td>
<td>210 h</td>
</tr>
</tbody>
</table>

#### Contact

res.eng@bgu.uka.de

### Lecturer(s)

All Resources Engineering lecturers + external experts upon approval by the Resources Engineering examination board

### Course topic

Exploration of a solution for a relevant research question in the field of water-oriented resources engineering.

### Recommended background knowledge

n.a.

### Learning outcomes

#### Disciplinary knowledge

- **concepts, theories & definitions**
  - study context of the Master degree program (incl. subject area of individual specialization).
- **subject matter (factual data, examples)**
  - Specialized knowledge of a subject area as foundation for the student’s research.
- **methods & procedures**

#### Professional skills

Expertise in workflow optimization, data collection and data analysis. Independent management and transformation of a complex and unpredictable problem from the general field of study contexts of the Master degree program “Resources Engineering” (including related subject areas) utilizing scientific state-of-the-art research methods.

#### Personal competence

Taking responsibility for contributing to professional knowledge.

### Assessment specification

- written ---
- oral ---
- other thesis = partial module exam "Master thesis" 8-10,000 words

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WCH = Weekly Contact Hours
### Module MSc

**Masterarbeit**

### Part II

#### Colloquium

<table>
<thead>
<tr>
<th>KIT lecture ID</th>
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</tr>
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<tbody>
<tr>
<td><strong>Relevance</strong></td>
<td>compulsory</td>
</tr>
<tr>
<td><strong>Prerequisites</strong></td>
<td>Modules M 1-7, M 9, written Master thesis</td>
</tr>
<tr>
<td><strong>Term(s)</strong></td>
<td>4th term (summer)</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>English/ German</td>
</tr>
<tr>
<td><strong>Training mode</strong></td>
<td>Indiv. study, 2 wks</td>
</tr>
<tr>
<td><strong>Workload</strong></td>
<td>5.0 CP $\Rightarrow$ 150.0 h</td>
</tr>
</tbody>
</table>

#### Workload specification

<table>
<thead>
<tr>
<th>AUGUST</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td>9.0 h</td>
<td>Self instruction</td>
<td>140.0 h</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>EXAM PHASE</th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Exam</td>
<td>1.0 h</td>
<td></td>
<td></td>
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</table>

#### Contact

res.eng@bgu.uka.de

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</tr>
</thead>
<tbody>
<tr>
<td><strong>Course topic</strong></td>
<td>Presentation of independent research to a small audience.</td>
</tr>
<tr>
<td><strong>Recommended background knowledge</strong></td>
<td>n.a.</td>
</tr>
<tr>
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<td><strong>Disciplinary knowledge</strong></td>
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<tr>
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<tr>
<td><strong>Personal competence</strong></td>
<td>Defend findings of original research.</td>
</tr>
<tr>
<td><strong>Assessment specification</strong></td>
<td>written ---</td>
</tr>
<tr>
<td></td>
<td>oral ---</td>
</tr>
<tr>
<td></td>
<td>other presentation, Q&amp;A = partial module exam “Colloquium” 30 + 30 min</td>
</tr>
</tbody>
</table>

*WCH = Weekly Contact Hours*