

Study and examination regulations
(SPO)
for the
International Master Geomatics
Degree awarded: Master of Science (M.Sc.)

Version 6

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§ 40-GMCM Program structure

- (1) The International Master Geomatics covers four semesters.
- (2) All courses are generally offered in English.
- (3) In case of students having a bachelor's degree with more than 180 credits and a suitable profile, up to 30 ECTS points can be transferred. The Admission Commission including the Chair of the Board of Examiners decide about the recognition as well as the extent and the kind of the recognized courses before the start of the studies.
- (4) In addition to the compulsory modules of the first and second semester, students have to choose two elective modules in the second semester and three elective modules in the third semester, each module having 6 ECTS-credits (CP).
- (5) The elective modules including study and examination credits are defined by the Board of Examiners of the Geomatics study program (GMCM) and are published in the respective module descriptions. All elective modules have the same weight in the calculation of the individual final grade.
- (6) The workload in the compulsory and electives modules required to successfully complete the study program amounts to a total of 120 ECTS CP.

Study option A

The name of this program is *International Master Geomatics*. It applies to students who have obtained their qualifying entry degree abroad. For students qualifying themselves by a German degree program an additional semester of studies at a foreign university is compulsory. Students who spent, during their bachelor studies, at least one study semester abroad can be exempt from this additional semester on request.

Study option B

Students qualifying themselves by a German degree program who do not spend, or have recognized, a study semester abroad are classed in the *Master Geomatics*.

§ 41-GMCM Lectures, curriculum and examination details

- (1) For information about the compulsory modules as well as the pre-examination credits and examination credits required for successful completion of studies, see table 1. The study credits (SL) assigned to a subject examination must be completed within the frame of the subject examination. The pre-examination credits (PV) must be completed as a prerequisite for admission to the related examination.
- (2) Table 2 shows the subject examinations leading to the Master's degree, the associated pre-examination and examination credits to be completed, as well as the weight of the various examinations towards the final grade.
- (3) From the module "GMCM201 Specific Basics" students have to choose two of the following three lectures with 3 CP each: Navigation, Facility Management, Geography of Economics & Social Geography.
- (4) As further compulsory module, students have to choose either "GMCM301 Open Source GIS" or "GMCM302 Navigation Technologies and Mobile GIS", with 6 CP each.
- (5) From the module "GMCM105 Scientific Work, Language, Rhetoric" students have to choose courses from the areas of scientific work, language or rhetoric with a minimum of 6 CP each. Suitable courses will be announced in due time.

§ 42-GMCM Double graduation

It is possible to obtain a double degree from Karlsruhe University of Applied Sciences and an approved partner university if a total of 120 CPs is obtained from both universities, at least 40% of which are obtained from one of the universities. § 40 (3) is not applicable. The study and ex-

amination credits to be completed are defined in the agreement between Karlsruhe University of Applied Sciences and the particular partner university.

§ 43-GMCM Master's Thesis

The Seminar for the Master's Thesis is to be completed within one month, the Master's Thesis is to be completed within a period of five months. The Master's Thesis has to be written in English.

§ 44-GMCM Grade record and certificate

The grade record and the certificate specify the study option in which the degree program was successfully completed.

In case of study option A or double graduation, the wording is as follows: "Ms./Mr. ... has successfully completed the Master's Degree in the International Master's Degree program Geomatics (MSc)".

In case of study option B, the wording is as follows: "Ms./Mr. ... has successfully completed the Master's Degree in Geomatics (MSc)".

In both cases, the qualification awarded is Master of Science, abbreviated as M.Sc.

§ 45-GMCM Tables with curriculum details

Explanation of the content of the columns and abbreviations in the tables below:

Column number

- | | | | | | | | | | | | |
|---|--|----------------|-------------------|-------------------|---------------|---|------------------|------------------------------------|-------------------|----------------------|--|
| 1 | Course code (EDP code) | | | | | | | | | | |
| 2 | Course title (module) | | | | | | | | | | |
| 3 | Semester in which the course is offered (Sem.) | | | | | | | | | | |
| 4 | ECTS credit points (CP) and contact hours per week (SWS) | | | | | | | | | | |
| 5 | <p>Course type (Type)</p> <p>V = Lecture S = Seminar Ü = Exercises P = Project lecture LW = Lab work (V+V)*, (V+V+V)* Two or three lecture courses pertaining to the same module can be enclosed in brackets to show that these lectures will be assessed in a single examination. *The lectures can be accompanied by exercises and lab work.</p> | | | | | | | | | | |
| 6 | Prerequisites for admission to the exam procedure (Prereq.) | | | | | | | | | | |
| 7 | Type of study credits/pre-examination credits specifying duration in minutes, if no other unit is specified. (SL/PV / Time) | | | | | | | | | | |
| 8 | Type of examination credits specifying duration in minutes, if no other unit is specified (PL / Time) | | | | | | | | | | |
| 7 and 8 | <p>The following may be used for study credits/pre-examination credits (SL / PV) or examinations (PL):</p> <table border="0" style="width: 100%;"> <tr> <td>Oe = Oral exam</td> <td>Pr = Presentation</td> </tr> <tr> <td>We = Written exam</td> <td>Lw = Lab work</td> </tr> <tr> <td>Aw = Academic work (misc. written work)</td> <td>Dr = Draft paper</td> </tr> <tr> <td>Hw = Homework (misc. written work)</td> <td>Pw = Project work</td> </tr> <tr> <td>MT = Master's thesis</td> <td></td> </tr> </table> <p>The following applies for the duration S = Semester M = Month(s) W = Week(s) D = Day(s)</p> | Oe = Oral exam | Pr = Presentation | We = Written exam | Lw = Lab work | Aw = Academic work (misc. written work) | Dr = Draft paper | Hw = Homework (misc. written work) | Pw = Project work | MT = Master's thesis | |
| Oe = Oral exam | Pr = Presentation | | | | | | | | | | |
| We = Written exam | Lw = Lab work | | | | | | | | | | |
| Aw = Academic work (misc. written work) | Dr = Draft paper | | | | | | | | | | |
| Hw = Homework (misc. written work) | Pw = Project work | | | | | | | | | | |
| MT = Master's thesis | | | | | | | | | | | |
| 9 | Weight for subject grade (GFN) | | | | | | | | | | |
| 10 | Assigning examination credits to subject examination (FP) | | | | | | | | | | |
| 11 | Remarks | | | | | | | | | | |
| 6 and 11 | <p>The following abbreviations are used:</p> <p>Block = Block course FP = Subject examination LV = Course Wf = Elective course ≤4 = This examination must be completed with a minimum grade of "satisfactory" (4.0)</p> | | | | | | | | | | |

| Degree program: Geomatics (GMCM) | | | | | | | | Degree awarded: Master of Science | | | | Table 1 | |
|---|--|-----|--------------|-----|--------|--------|-------|-----------------------------------|----------------------|----------------------|----------------|---------|--------------|
| Study Program | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4a | 4b | 5 | 6 | 7 a | 7 b | 8 a | 8 b | 9 | 10 | 11 |
| EDP Code | Module | Sem | CP | SWS | Type | Prereq | SL/PV | Time | PL | Time | GFN | FP | Remarks |
| GMCM101 | Statistics, Adjustment and Reference Systems | 1 | 6 | 5 | L+L+LW | | Aw+Aw | 1S+1S | We | 120 | 1 | 01 | |
| GMCM102 | Thematic Cartography | 1 | 6 | 5 | V+LW | | Aw+Aw | 1S+1S | We | 120 | 1 | 02 | |
| GMCM103 | GIS and Databases | 1 | 6 | 5 | V+LW | | Aw | 1S | We | 120 | 1 | 03 | |
| GMCM104 | Photogrammetry & Remote Sensing | 1 | 6 | 4 | V+LW | | Lw | 1S | We | 120 | 1 | 04 | |
| GMCM105 | Scientific Work, Language and Rhetoric | 1 | 6 | | | | | | | | | 05 | § 41 (5) |
| GMCM201 | Specific Basics | 2 | 6 | 4 | V+V | | | | We+We or We+Oe | 90+90 or 90+30 | 1+1 1+1 | 05 | ≤4 ≤4 |
| GMCM202 | GIS-Project and Management | 2 | 6 | 4 | P | | | | Aw | 1S | 1 | 06 | |
| GMCM203 | Softskills | 2 | 6 | 6 | V | | | | We | 90 | 1 | 07 | § 41 (5) |
| | Electives | 2 | 12 | | | | | | | | | | §40 (2,4,5) |
| GMCM301 | Open Source GIS | 3 | 6 | 4 | V | | | | Aw | 1S | 1 | 08 | § 41 (4) |
| GMCM302 | Navigation Technologies and Mobile GIS | 3 | 6 | 4 | V+V | | Aw | 1S | We | 120 | 1 | 09 | § 41 (4) |
| GMCM303 | Software Engineering and Programming | 3 | 6 | 4 | V+V | | Aw | 1S | Oe | 30 | 1 | 10 | |
| | Electives | 3 | 18 | | | | | | | | | 12-21 | §40 (2,4,5) |
| GMCM401 | Seminar for Master's Thesis | 4 | 5 | | | | | | Aw | 1M | 1 | 11 | |
| GMCM402 | Master's Thesis | 4 | 22 | | | | | | MT | 5M | 1 | 22 | |
| GMCM403 | Colloquium for Master's Thesis | 4 | 3 | | | | | | MT | 30 | 1 | 23 | |
| Total | Master's Program | | 120CP | | | | | | | | | | |

| Degree program: Geomatics (GMCM) | | | | Degree awarded: Master of Science | | Table 2 | |
|---|--|---------|--|-----------------------------------|--------------------------|-------------------------|-------------|
| Master's examination | | | | | | | |
| EDP Code | Name of examination | Code | Related courses | Sem. | Weight for subject grade | Weigh for overall grade | Note |
| | Subject examination | | | | | | |
| GMCMF01 | Statistics, Adjustment and Reference Systems | FP01 | Statistics, Adjustment and Reference Systems | 1 | 1 | 1 | |
| GMCMF02 | Thematic Cartography | FP02 | Thematic Cartography | 1 | 1 | 1 | |
| GMCMF03 | GIS and Databases | FP03 | GIS and Databases | 1 | 1 | 1 | |
| GMCMF04 | Photogrammetry & Remote Sensing | FP04 | Photogrammetry & Remote Sensing | 1 | 1 | 1 | |
| GMCMF05 | Specific Basics | FP05 | Scientific Work, Language and Rhetoric; Specific Basics | 2 | 1 | 2 | |
| GMCMF06 | GIS-Project and Management | FP06 | GIS-Project and Management | 2 | 1 | 1 | |
| GMCMF07 | Softskills | FP07 | Softskills | 2 | 1 | 1 | |
| GMCMF08 | Open Source GIS | FP08 | Open Source GIS | 3 | 1 | 1 | § 41 (4) |
| GMCMF09 | Navigation Technologies and Mobile GIS | FP09 | Navigation Technologies and Mobile GIS | 3 | 1 | 1 | § 41 (4) |
| GMCMF10 | Software Engineering and Programming | FP10 | Software Engineering and Programming | 3 | 1 | 1 | |
| GMCMF11 | Seminar for Master's Thesis | FP11 | Seminar for Master's Thesis | 4 | 1 | 1 | |
| GMCMF23 | Colloquium for Master's Thesis | FP23 | Colloquium for Master's Thesis | 4 | 1 | 1 | |
| GMCMF12-21 | Electives | FP12-21 | Electives | 2 | 1 | 5 | §40 (2,4,5) |
| | | | | 2 | 1 | | |
| | | | | 3 | 1 | | |
| | | | | 3 | 1 | | |
| | | | | 3 | 1 | | |
| GMCMF22 | Master's Thesis | FP22 | | 4 | 4 | 4 | |

§ 50-GMCM Coming into effect

This SPO comes into effect on March 1, 2015.

§ 51-GMCM Transitional regulations

Students who are already registered in the degree program *Geomatics* at Karlsruhe University of Applied Sciences at the date when this SPO comes into effect are allowed to take any remaining pre-examination and examination credits according to version 5 of the study and examination regulations until 28 February 2016 at the latest. Starting with this date, all students are required to take their examination credits according to the present SPO.

Karlsruhe, on February 2, 2015

The President

Prof. Dr. Karl-Heinz Meisel