Study regulations for the double degree master's programme in "Environmental Earth Sciences" at the Department of Earth Sciences of Freie Universität Berlin

Preamble

On the basis of § 14 section 1 no. 2 of the Partial Basic Regulations (trial model) of Freie Universität Berlin dated 27 October 1998 (FU Official Journal 24/1998) the governing board of the Department of Earth Sciences of Freie Universität Berlin enacted the following study regulations for the double degree master's programme in Environmental Earth Sciences on day month 2011*:

Contents

§ 1
Applicability

These regulations govern the aims, contents and structure of the consecutive, interdisciplinary and research-oriented double degree master's programme in "Environmental Earth Sciences" at the Department of Geographical Sciences of Freie Universität Berlin (master's study programme) on the basis of the examination regulations of day month year. The master's programme is offered in cooperation with Nanjing University (China).

§ 2
Aims of the programme

(1) On successful completion of the master's programme, graduates will be able to familiarise themselves rapidly and independently with subject matter in the Earth and Environmental Sciences and to plan, implement and finalise process- and system-oriented projects using a goal-oriented approach. They are able to select the appropriate working methods, instruments and techniques for the topic in question. Graduates are able to document and present their results clearly and to consider and evaluate their results critically. They are able to apply competences acquired in the field of Environmental Earth Sciences. They possess communication and teamwork skills and are capable of responsible action and independent scientific work.

- They know the links between the solid Earth, the atmosphere, the oceans and the biosphere in terms of the environmental sciences.
- They have a comprehensive understanding of the processes within and between the various geospheres and are able to analyse and interpret them.
- They have gained knowledge of fundamental and advanced geoscientific methods, including field methods, and are able to apply them.
- They possess inter- and transdisciplinary abilities and skills to meet the challenges posed by complex environmental issues and problems.

(2) As a result of their study stay in China, graduates possess comprehensive knowledge of regional environmental systems and geoscientific processes.

(3) xxxxxxxxxxxxx

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* These regulations have been acknowledged by the Senate administration responsible for universities in a document dated day month 2011. These regulations are valid until day month year.

§ 3
Contents of the programme

(1) The master's programme enables students to acquire methodological competence and an understanding of processes and systems in the field of Environmental Earth Sciences.

(2) The programme teaches interdisciplinary theoretical and methodological competence and trains general scientific judgement in theoretical and practical terms. Students learn to familiarise themselves with topics of the Earth and Environmental Sciences rapidly and autonomously and to plan, implement and finalise work projects using a goal-oriented approach. The objective is to select the appropriate methods, instruments and techniques for the respective topic. Results must be clearly documented, presented and considered critically. The study of a broad range of subjects (core curriculum and elective modules) allows students to extend their abilities and skills. They will acquire geoscientific regional competence and cultural knowledge during their study stay in China.

(3) Graduates of the master's programme are qualified for professional employment or to start doctoral studies. Possible fields of employment and activity include public authorities, associations, organisations, industry, NGOs, development agencies, engineering and geo consulting, insurance companies, consultancy, administration and politics. Graduates can work within the public sector, mainly in higher education, research establishments as well as subject-related federal and regional authorities. International research establishments and organisations also provide various employment opportunities. The study period at the University of Nanjing opens up fields of employment in China as well.

§ 4
Structure of the programme

(1) The master's programme (120 credits) consists of modules comprising a total of 90 credits and the master's thesis (including oral exam) comprising 30 credits. Modules already completed during previous university studies cannot be transferred to the master's programme.

(2) The following core modules totalling 30 credits must be taken:

- Geographical information processing for advanced students (10 credits)
- Ecosystem Dynamics (20 credits).

(3) The elective courses at Freie Universität Berlin (30 credits) comprise the following modules:

- 12 credits in Geological Sciences
  xxx
- 8 credits in Meteorology (1st semester)
  xxx
- 10 credits in Geographical Sciences and/or Meteorology (3rd semester)
  (Geographical Sciences: Human environment relations (5 credits), Environmental hydrology in practice (5 credits), Modelling in environmental hydrology (10 credits), Landscape archaeology (10 credits); Meteorology: xxx)

xxx

(4) Electives (Nanjing University) (30 credits)
Chinese language course (10 credits)

Another 20 credits (4 course units to be chosen from three subject areas):
Subject area "Ocean Dynamics":
CU 1: Ocean Dynamics (5 credits)
CU 2: Advanced marine geology (5 credits)
CU 3: Introduction to coastal sciences (5 credits)

Subject area "Terrestrial Environmental Systems"
CU 1: Progress in physical geography (5 credits)
CU 2: Interlinked environmental processes (5 credits)
CU 3: Watersheds and environmental change (5 credits)
CU 4: Quaternary research

Subject area "Geochemical Processes":

CU 1: Atmospheric aerosols (5 credits)
CU 2: Atmospheric chemistry (5 credits)
CU 3: Advanced geochemistry (5 credits)
CU 4: Modern isotope geochemistry (5 credits).

A total of 4 modules must be chosen, at least one of which has to come from each of the three subject areas "Ocean Dynamics," "Terrestrial Environmental Systems" and "Geochemical Processes."

(2) Information about the contents, aims, teaching and learning forms, workload hours, forms of active participation, duration and frequency of the modules is given in the module descriptions in Appendix 1 unless otherwise regulated in the following.

(3) Information about the recommended study plan is given in the sample curriculum in Appendix 2.

§8
Teaching and learning forms

1. Lecture (L): serves to convey an overview of subdisciplines of Environmental Earth Sciences, working methods, problems and results. The link between the respective subdiscipline and other research fields is clarified, and an orientation is given for subsequent special topics. Lecturers convey course material with reference to specialist literature and provide incentives for students' own work and critical thinking.

2. Seminar (S): familiarises students with examples of contents, theories and methods of geography using topics of manageable scope. Guided by a member of the teaching staff, students explore, present and discuss topics using subject-related literature and empirical findings.

3. Advanced seminar (AS): involves the intensive exploration of a specific subject area and allows student to practise independent scientific work. Guided by a member of the teaching staff, students design, present and discuss course material using subject-related literature and empirical knowledge. A greater share of self-study is required than in a seminar.

4. Exercise courses (E): convey working techniques or deal with the course material in greater depth, generally by means of experiments, computer work or analytic assignments.

5. Practical course (P): focuses on the practical application of newly acquired knowledge and methodological skills in the lab and/or in the field.

6. Colloquium (C): is a specialist presentation by staff and students on new aspects of research, with subsequent discussion.

§ 7
Student advisory service

Throughout the study programme, a German and a Chinese supervisor from different subject areas will advise students.

§ 8
Studying abroad

(1) Studying at a Chinese university for one semester is an integral part of the master's curriculum and is scheduled for the second semester of the master's programme. The coursework done during this study period abroad is part of the master's programme.

(2) The coursework to be completed during the study period abroad is regulated in a contractual agreement between Freie Universität Berlin and the respective office at the host university. This agreement also regulates the duration of study abroad, the credits assigned to the coursework and, if applicable, the tuition fees to be paid.

(3) The grants programme representative supports students in their plans and preparations for studying abroad and provides information about possible funding of travel and subsistence costs.

(4) The partner university will issue a separate certificate confirming the coursework performed in the modules studied at the partner university. The coursework performed at the partner university will be entered in the final degree certificate.

§ 9
Entry into force

(1) These study regulations enter into force on the day after their publication in the *Mitteilungen* (Official Journal) of Freie Universität Berlin.

Appendix 1: Module descriptions

Explanations:

For each module of the master's programme, the following module descriptions specify:

- the title of the module
- contents and learning outcome of the module
- teaching and learning forms in the module
- the workload required for a student to successfully complete a module, subdivided according to contact hours and independent study
- forms of active participation
- regular duration of the module.

Information about student workloads refers especially to

- active participation during contact hours
- the workload involved in minor tasks during contact hours
- time required for self-directed preparation and follow-up work
- direct preparation hours for examination work
- actual examination time.

The workload details correspond to the number of credits assigned to the respective module as a measure of the approximate student workload required to complete the module successfully. Derived from this are the times quoted for self-directed study, comprising preparation and follow-up time of contact hours, exam preparation, etc.

As well as regular attendance at classes and successful completion of the examination requirements of a module, active participation is a precondition for obtaining the credits assigned to the respective module.

The number of credits and additional examination-related information about each module are given in Appendix 1 of the Examination Regulations.

Appendix 1: Module descriptions

<table>
<tr><td colspan="4">Module:</td></tr>
<tr><td colspan="4">University/Department/Institute:
Freie Universität Berlin/Dept of Earth Sciences/Institute of Geographical Sciences</td></tr>
<tr><td colspan="4">Module coordinator: Module lecturers</td></tr>
<tr><td colspan="4">Prerequisites: None/To complete this module/these modules successfully</td></tr>
<tr><td colspan="4">Aims:</td></tr>
<tr><td colspan="4">Contents:</td></tr>
<tr><td>Teaching and learning forms</td><td>Contact hours
(hours per week per semester)</td><td>Forms of active participation</td><td>Workload
(hours)</td></tr>
<tr><td>Lecture</td><td>xx</td><td>–</td><td rowspan="2">Contact hours
Preparation and follow-up
Exam preparation and exam</td></tr>
<tr><td>Seminar</td><td>xx</td><td></td></tr>
<tr><td colspan="4">Language: English; German is optional</td></tr>
<tr><td colspan="2">Workload/total hours:</td><td colspan="2">credits</td></tr>
<tr><td colspan="4">Duration of module:</td></tr>
<tr><td colspan="4">Frequency offered: every winter/summer semester</td></tr>
<tr><td colspan="4">Applicability:
MSc Geographische Wissenschaften (Geographical Sciences)
MSc Geologische Wissenschaften (Geological Sciences)
MSc Environmental Earth Sciences</td></tr>
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