

UNIVERSITÉ DE FRIBOURG SUISSE  
FACULTÉ DES SCIENCES

UNIVERSITÄT FREIBURG SCHWEIZ  
MATHEMATISCH-NATURWISSENSCHAFTLICHE FAKULTÄT

Curriculum for the award of the Degree of

## Master of Science in Geography

Options:

- Dynamics in Glaciology and Geomorphology
- Sociospatial Environments

Accepted by the Faculty of Science on May 27, 2013



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# 1 General remarks

This curriculum introduces the course structure of the MSc study programme in geography, which offers two options of specialization. It is based on the regulations of the Faculty of Science governing the acquisition of the title of Master of Science (hereafter called Regulations).

## 1.1 Academic Titles and Programme of Study

The Faculty of Science of the University of Fribourg awards the official academic title of **Master of Science in Geography**, subsequently called **MSc**, to students who have successfully completed their respective course of studies and obtained the title of Bachelor of Science (BSc) or a recognized equivalent.

The programme of study of the MSc in Geography represents a scientific course of studies, allowing specialization in the fields of *Dynamics in Glaciology and Geomorphology* or *Sociospatial Environments*.

The MSc in Geography gives access to various professional activities in research, education, environmental consulting and protection, spatial planning, documentation, and administration. Besides, the MSc is the entry requirement for scientific work and deepened scientific education leading to a doctorate. When accompanied by a subsidiary subject in a discipline figuring on higher secondary school curricula, the MSc allows students to follow a complimentary didactics programme leading to the qualification as a higher secondary school teacher (*Diplôme d'enseignement pour les écoles de maturité (DEEM) / Lehrdiplom für Maturitätsschule (LDM)*).

Persons in possession of a BSc in Geography of the University of Fribourg or any other Swiss university are admitted to the MSc course of studies (Art. 7 of the Regulation). Persons in possession of a BSc degree in a different subject or of equivalent degrees (e.g. after graduating from an engineering school) can also be admitted to the MSc study programme by a decision of the Faculty of Science to be made in each individual case. Provisional admission can be granted, which then depends on the fulfilment of additional requirements (cf. Section 2.5).

## 1.2 Course structure

The MSc study programme in geography spans two years (four terms), corresponding to 120 ECTS credits.

It integrates courses in natural and human sciences, and offers a specialisation in one of the two orientations. The course programme consists of the following teaching modules:

- A *Common module* totalling 15 ECTS.
- A *Master thesis module*, comprising the Master thesis, a preliminary and a final seminar. Altogether it comprises 60 ECTS.
- A *Specialisation module* in either Dynamics in Glaciology and Geomorphology (Physical science module) or in Sociospatial Environments (Social science module). Each of these two modules consists of compulsory courses and elective course destined to strenghtenthe specialisation. It comprises a minimum of 25ECTS.
- A *Supporting courses module*, offering additional teaching in geography or other disciplines related to the Master orientation. The selection of the courses is guided by the specialisation and must be approved by the supervisor of the Master thesis. It comprises the remaining amount of credit to reach the total of 120 ECTS.

The course language will be mainly English, with French and German on certain occasions. For exams and written works (project reports, MSc thesis, etc.) students can choose between German, French, or English.

The MSc courses can only be assessed and recognized after successful completion of the BSc.

### 1.3 Acquired skills

The aim of the studies leading to the award of a MSc in Geography is to deepen knowledge and to perfect competence in the chosen field. Thus, at the end of the course, a student will have shown that he/she can apply their knowledge to accomplish a research project and will have learned how to work independently or how to integrate into an interdisciplinary research team. The award of the degree requires creative and self-critical talents as well as the ability to communicate ideas and work both in English and their native language.

### 1.4 Assessment of Courses and Acquisition of ECTS Credits

Acquisition of ECTS credits occurs in three steps: assessment of the courses, grouping of courses into validation package, and awarding the respective credits.

Exercises are assessed following the criteria given at the beginning of the course. Admission to the exam corresponding to a lecture course can be subject to meeting the requirements of the corresponding exercise class. **Assessment** of lectures is made by an oral and/or written exam, whose type and duration are regulated in an appendix of this curriculum. Exams take place during the official exam periods (sessions) in spring, summer, and autumn. Students register in GESTENS within the stipulated delays for each exam according to the on-line procedure. The marks range from 6 (highest mark) to 1 (lowest mark). An exam marked below 4 can be repeated once at the next exam session at the earliest.

**Validation packages** comprise multiple, separately assessed courses. Art. 18 of the Regulation determines the number of these package whereas this curriculum determines their content. There are 3 validation packages:

- The *MSc1 package* (30 ECTS) consists of the Common Module and the Compulsory courses part of the selected Master option Module (Physical science option or Social science option);
- The *MSc2 package* (30 ECTS) consists of the Electives part of the selected Master option Module grouped with the Supporting courses;
- The *MSc3 package* (60 ECTS) consists of the Master Thesis Module.

ECTS points are credited according to art. 19 of the Regulation if:

- The weighted average of the exam marks of a validation package is at least 4. The weighting is given by the number of ECTS points assigned to a course.
- The assessment criteria of courses not examined (practical work, exercises, etc.) are met.
- No mark equals 1.0.

Under these prerequisites, validation packages are validated and the corresponding ECTS points are converted into ECTS credits. By request, the Dean's office issues confirmations in which exam results and credits awarded are acknowledged (Art. 22 of the Regulation), provided the exam fee has been paid.

### 1.5 Ethics and Science

Ethical principles are an integral part of a scientific education. Accepted international conventions must be respected during research and upon the writing up of any scientific work whether it

is a project, a lecture, a thesis or a report. In particular, every external source of information (articles, lectures, web pages, etc.) must be correctly cited.

## 1.6 Regulations and additional Information

Detailed information about studying geography can be found in the following documents, which can be obtained from the Office of the Department of Geosciences – Geography, chemin du Musée 4, CH-1700 Fribourg:

- Regulation concerning the admission to the University of Fribourg [Règlement d'admission de l'Université de Fribourg / Zulassungsreglement der Universität Freiburg]; (<http://www.unifr.ch/rectorat/reglements>)
- Regulation of 2 February 2004 governing the granting of the titles of Bachelor of Science and Master of Science ([http://www.unifr.ch/science/current/plans\\_e.php](http://www.unifr.ch/science/current/plans_e.php))
- Curriculum for major and minor branches in the Faculty of Science of the University of Fribourg ([http://www.unifr.ch/science/current/plans\\_e.php](http://www.unifr.ch/science/current/plans_e.php))
- Study programme of the University of Fribourg ([www.unifr.ch/guide](http://www.unifr.ch/guide))
- Course Program of the University of Fribourg ([www.unifr.ch/main/programmecours](http://www.unifr.ch/main/programmecours))
- UE database (<http://gestens.unifr.ch/>)
- University calendar of the University of Fribourg

Finally, each student obtains a personal and secure space that can be reached using an individual university e-mail password. This space can be reached by the link "Connexion" on web page [www.unifr.ch/science/gestens](http://www.unifr.ch/science/gestens) and allows inscription to courses and exams, access to exam results, the initiation of the process of attestation, etc.

## 2. Master of Science

[Option DGG: version 2013 validation packages: MSc1-GG.0430, MSc1-GG.0431, MSc2-GG.0501]

[Option SSE: version 2013 validation packages: MSc1-GG.0440, MSc1-GG.0441, MSc2-GG.0501]

### 2.1 Courses units

#### Common module

Code	Course	Semester	tot. h.	ECTS
GG.0402	Methods for environmental analysis	AS	28	3
GG.0409	Models, modelling and representations	AS	28	3
GG.0421	Geocolloquium, part 1	AS/SS	28	1
GG.0422	Geocolloquium, part 2	AS/SS	28	1
GG.0423	Thinking geography	AS	28	3
GG.0424	Hazards, risks and vulnerability	AS	28	3
GG.0510	Geocolloquium, part 3	AS/SS	28	1
<b>Total</b>				<b>15</b>

#### Master thesis module

Code	Course	Semester	tot. h.	ECTS
GG.0410	Master thesis seminar (preliminary)	AS/SS	14	2
GG.0503	Master thesis (with final public presentation)		–	58
<b>Total</b>				<b>60</b>

#### Physical Science Module

Code	Course	Semester	tot. h.	ECTS
<b>Compulsory courses</b>				
GG.0441	Applied geophysical methods	SS	30	3
GG.0443	Project in cryosphere and geomorphology	AS/SS	–	3
GG.0444	Alpine cryosphere	AS	28	3
GG.0445	Mountain geomorphology	SS	36	3
GG.0448	Modelling of glaciers and permafrost	SS	28	3
<b>Elective courses</b>				
GG.0408	Conservation biogeography	AS/SS*	28	3
GG.0449	Seminar in climatology and glaciology I	AS/SS	28	2
GG.0450	Seminar in climatology and glaciology II	AS/SS	28	2
GG.0451	Seminar in geomorphology I	AS/SS	28	2
GG.0452	Seminar in geomorphology II	AS/SS	28	2
GG.0453	Field course I in physical geography	AS/SS	40	5
GG.0454	Field course II in physical geography	AS/SS	40	5
<b>Total</b>				<b>minimum 25, maximum 36</b>

\* Teaching Unit offered only every two years.

#### Social Science Module

Code	Course	Semester	tot. h.	ECTS
<b>Compulsory courses</b>				
GG.0471	New approaches in human geography	SS	28	3
GG.0473	Seminar in global change, development & ethics	SS	28	3
GG.0474	Project in human geography	AS/SS	–	3
GG.0477	Political ecology	SS	28	3
GG.0478	Seminar in human geography I	AS	28	3

<b><i>Elective courses</i></b>				
GG.0408	Conservation biogeography	AS/SS*	28	3
GG.0472	Environmental social methods	AS	28	3
GG.0475	Seminar in human geography II	AS/SS	28	2
GG.0479	Seminar in human geography III	AS/SS	28	2
GG.0480	Field course I in human geography	AS/SS	40	5
GG.0481	Field course II in human geography	AS/SS	40	5
<b><i>Total</i></b>			<b><i>minimum 25, maximum 35</i></b>	

\* Teaching Unit offered only every two years.

### **Supporting Courses Module**

Course	Semester	tot. h.	ECTS
<b><i>English</i></b>			
– Academic English for science I	AS	–	3
– Academic English for science II	SS	–	3
<b><i>Geography</i></b>			
– Non selected courses from the specialization modules			
<b><i>Other disciplines</i></b>			
Courses can also be chosen from other departments of the Faculty of Sciences, from other faculties of the University of Fribourg as well as from other universities in Switzerland or abroad, with the consent of the supervisor of the Master thesis. Courses already assessed in another programme cannot be chosen again.			
<b><i>Total</i></b>			<b><i>minimum 20</i></b>

## **2.2 Course contents of the Master programme**

### **2.2.1 Lecture courses**

The lectures of the *common module* propose a basic training in the field of geography. They present the approach of the discipline in an integrated way (GG. 0409 and GG.0423), natural and human factors involved in this process (GG.0424), and methods of generating and analysing geographical information (GG.402). Three cycles of the Geocolloquium (GG.0421, GG.0422 and GG.0510) give an opportunity to the master students to open their understanding to current topics of research.

The lectures of the *specialization module* develop the study of either natural or socio-economic aspects (physical and social science modules respectively) and of their interactions.

The lectures of the *supporting courses module* offer a wide range of fields and disciplines related to the chosen specialisation. They allow the student to further broaden his/her specialization, to deal with additional and complementary themes and to approach them from different angles. The offer presented in the table can be completed by lectures in other faculties or universities. The choice of supporting courses must, however, be in relation to the Master thesis and must be approved of by the supervisor.

### **2.2.2 The seminars**

The seminars (GG.0438, 0449 to GG.04460452, GG.04760473, GG.04690475, GG.0478 and GG.04730479) request active participation during the meetings as well as producing the production of a seminar paper. Every student must participate in the two seminars (GG.0410, GG.05010503) related to the Master thesis, as outlined below.

### 2.2.3 The Master thesis

The preparation and the elaboration of the Master thesis (GG.0503) are accompanied by two seminars. The first (GG.0410) shall allow the student to choose and define the topic of his/her research work; it will be organized during the second term of the Master programme. The second seminar (as part of GG.0503) takes place during the last term of the Master programme; its role is to permit the student to summarise and to present results of his/her research project and share his/her experience with his/her colleagues.

The Master thesis is credited with 58 ECTS; it initiates the student to scientific research, leading to a thesis on a particular theme linked to the chosen specialisation. Work shall begin during the second term and be completed by the end of the fourth term of the MSc programme, crowning the studies. It is a research work undertaken under supervision of a person with solid experience. This thesis helps the Master student to develop his/her liking and his/her aptitude for scientific research. The result is to be presented in written form as a research report and presented orally as a public presentation of 20 minutes during the seminar (GG.0503). With the Master thesis, the student demonstrates his/her ability to embark on a scientific investigation and strengthens his/her specialization.

A Master thesis can be supervised by more than one person, but the principal supervisor must be a professor at the geography unit of the Department of Geosciences.

## 2.3 Examinations of the MSc and validation

The **validation packages MSc1** and **MSc2** comprise all the teaching of the MSc common, specialisation, and supporting courses modules. Their total value is 60 ECTS credits.

Teaching units are evaluated according to the modes described in the document “Modalités d’évaluation des UE de la géographie”.

The assessments of the *supporting courses module* take place according to the information provided by the study plans of the concerned departments.

The teaching units of the Master thesis module (GG.0410, and GG.0503), including the master thesis, constitute the **validation package MSc3**. The assessments are described in the document “Modalités d’évaluation des UE de la géographie”.

A failed Master thesis can be repeated once on a different subject.

The title of **Master of Science in Geography, option Dynamics in Glaciology and Geomorphology or Sociospatial Environments, University of Fribourg (MSc)** is conferred upon the validation of the packages MSc1 to MSc3.

## 2.4 Admission procedure to the Master programme

Admission to the programme of Master in Geography is granted upon two conditions: the applicants have to comply with the admission criteria of Fribourg University (as defined by the Regulations for the Admission to the University of Fribourg [*Reglement über die Zulassung an der Universität Freiburg / Règlement concernant l’admission à l’Université de Fribourg*]), and they must hold the title of Bachelor in Geography of Fribourg University or another degree considered equivalent by the Faculty of Science.

The Faculty draws up a list of those titles that are considered equivalent. Applicants with one of these titles will automatically be accepted. Applicants whose title is not included in this list can send the Faculty of Science an application letter. The final decision will be made by the *Admission Committee* of the Faculty, a body appointed by the Faculty Council.



Depending on the academic qualification, the Admission Commission can make its acceptance dependent on the fulfilment of complementary studies. If they are of a minor scope, they can be completed in parallel to the Master programme. Otherwise, applicants are admitted to a “pre-master programme” and can start with the master degree programme only after fulfilling the requirements initially laid down for the pre-master.

Students holding the title of Bachelor or a title judged equivalent by the Faculty in another discipline than geography must follow and successfully complete at least one of the two complementary programmes in Geography BSc-60 in order to be admitted to the programme of Master in Geography. The courses of one of these two programmes, which have been frequented and assessed during former Bachelor studies, are recognised, as well as the courses judged as equivalent. The remaining courses constitute the complementary programme and have to be assessed. If they are of a minor scope, they can be completed in parallel to the Master programme. Otherwise, applicants are admitted to a “pre-master programme” and can start with the master degree programme only after fulfilling the requirements initially laid down for the pre-master.