

Curriculum for the award of the Degree of

# Master of Science in Geography

Options:

- **Dynamics in Glaciology and Geomorphology**
- **Nature, Society and Politics**

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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 and Medicine governing the acquisition of the title of Master of Science (hereafter called Regulations).

The Regulation of 6 April 2020 for the award of the Bachelor of Science and Master of Science degrees establishes a limit on the duration of Bachelor's and Master's studies, as well as of the minor study programmes (see articles 10, 11a, 12a, 13 and 31) (<https://www3.unifr.ch/scimed/fr/rules/regulations>).

## 1.1 Academic Titles and Programme of Study

The Faculty of Science and Medicine 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 study programme and obtained the title of Bachelor of Science (BSc) or a recognized equivalent.

The programme of study of the MSc in Geography allows the specialization in the fields of *Dynamics in Glaciology and Geomorphology (DGG)* or *Nature, Society and Politics (NSP)*.

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 complementary 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)*).

Candidates 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). Candidates in possession of a BSc degree from abroad, 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 and Medicine to be made in each individual case. Provisional admission can be granted and depends on the fulfilment of additional requirements set by the Faculty (cf. Section 2.4).

## 1.2 Course Structure

The MSc study programme in Geography spans two years (four terms), corresponding to a minimum of 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 credits.
- A *Master thesis module*, comprising the Master thesis, a preliminary and a final seminar. Altogether it comprises 60 ECTS credits.
- A *Specialisation module* in either Dynamics in Glaciology and Geomorphology (DGG option) or in Nature, Society and Politics (NSP option). Each of these two modules consists of compulsory courses and elective course destined to strengthen the specialisation. It

comprises a minimum of 25 ECTS credits for the DGG module and 23 ECTS credits for the NSP module.

- A *Supporting courses module*, offering additional teaching in Geography or other disciplines related to the Master orientation. The selection of the courses **must be approved by the supervisor of the Master thesis, at the latest during the Master preliminary**. It comprises the remaining amount of credit to reach the minimum total of 120 ECTS credits.

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 programme, 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 via the students' web portal MyUniFR (<https://my.unifr.ch>), 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. 22 and 24 of the Regulation determines the number of these package whereas this curriculum determines their content. There are three validation packages:

- The *first package* (30 ECTS credits) consists of the Common Module and the Compulsory courses part of the selected Master option Module (DGG or NSP option);
- The *second package* (30 ECTS credits) consists of the Electives part of the selected Master option Module grouped with the Supporting courses;
- The *third package* (60 ECTS credits) consists of the Master Thesis Module.

ECTS points are credited according to art. 23 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. Upon request, the Dean's office issues transcripts of records in

which exam results and credits awarded are acknowledged (Art. 26 and 27 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 documents referenced on the web page <http://www3.unifr.ch/scimed/en/plans> which can also be obtained from the Office of the Department of Geosciences – Geography, chemin du Musée 4, CH-1700 Fribourg.

## 2. Master of Science

[Option DGG: version 2020 validation packages: PV-SGG.0000039, PV-SGG.0000040, PV-SGG.0000041]

[Option NSP: version 2020 validation packages: PV-SGG.0000042, PV-SGG.0000043, PV-SGG.0000044]

### 2.1 Courses Units

#### Common module

| Code         | Course                                       | Semester | tot. h. | ECTS      |
|--------------|--|----------|---------|-----------|
| SGG.00409    | Models, modelling and representations        | AS       | 28      | 3         |
| SGG.00424    | Hazards, risks and vulnerability             | AS       | 28      | 3         |
| SGG.00426    | Climate change: state of the art and debates | AS       | 28      | 3         |
| SGG.00425    | Data and methods for environmental analysis  | AS       | 28      | 3         |
| SGG.00512    | Geocolloquium <sup>1</sup>                   | AS/SS    | 28      | 3         |
| <b>Total</b> |  |          |         | <b>15</b> |

<sup>1</sup> 25 Geocolloquium sessions can be attended over 4 semesters.

#### Master thesis module

| Code         | Course   | Semester | tot. h. | ECTS      |
|--------------|--|----------|---------|-----------|
| SGG.00410    | Master thesis (seminar, preliminary)           | AS/SS    | 14      | 2         |
| SGG.00503    | Master thesis (with final public presentation) |          | –       | 58        |
| <b>Total</b> |  |          |         | <b>60</b> |

#### Dynamics in Glaciology and Geomorphology Module

| Code                      | Course                                  | Semester | tot. h. | ECTS                          |
|---------------------------|---|----------|---------|-------------------------------|
| <b>Compulsory courses</b> |   |          |         |                               |
| SGG.00444                 | Alpine cryosphere                       | AS       | 28      | 3                             |
| SGG.00445                 | Mountain geomorphology                  | SS       | 28      | 3                             |
| SGG.00448                 | Modelling of glaciers and permafrost    | SS       | 28      | 3                             |
| SGG.00441                 | Applied geophysical methods             | SS       | 30      | 3                             |
| SGG.00443                 | Project in cryosphere and geomorphology | AS/SS    | –       | 3                             |
| <b>Elective courses</b>   |   |          |         |                               |
| SGG.00449                 | Climatology and glaciology I (seminar)  | AS/SS    | 28      | 2                             |
| SGG.00450                 | Climatology and glaciology II (seminar) | AS/SS    | 28      | 2                             |
| SGG.00451                 | Geomorphology I (seminar)               | AS/SS    | 28      | 2                             |
| SGG.00452                 | Geomorphology II (seminar)              | AS/SS    | 28      | 2                             |
| SGG.00453                 | Physical geography I (field course)     | AS/SS    | 40      | 5                             |
| SGG.00454                 | Physical geography II (field course)    | AS/SS    | 40      | 5                             |
| <b>Total</b>              |   |          |         | <b>minimum 25, maximum 33</b> |

#### Nature, Society and Politics Module

| Code                      | Course  | Semester | tot. h. | ECTS                          |
|---------------------------|---|----------|---------|-------------------------------|
| <b>Compulsory courses</b> |   |          |         |                               |
| SGG.00471                 | New approaches in human geography*            | SS       | 28      | 3                             |
| SGG.00473                 | Global change, development & ethics (seminar) | SS       | 28      | 3                             |
| SGG.00485                 | Environmental history                         | SS       | 28      | 3                             |
| SGG.00477                 | Political ecology                             | SS       | 28      | 3                             |
| SGG.00484                 | Social theories (seminar)                     | AS       | 28      | 3                             |
| <b>Elective courses</b>   |   |          |         |                               |
| SGG.00486                 | Advanced social research methods              | AS       | 28      | 3                             |
| SGG.00487                 | Issues in environmental ethics*               | AS       | 28      | 3                             |
| SGG.00480                 | Human geography I (field course)              | AS/SS    | 40      | 5                             |
| SGG.00481                 | Human geography II (field course)             | AS/SS    | 40      | 5                             |
| <b>Total</b>              |   |          |         | <b>minimum 23, maximum 31</b> |



**Supporting Courses Module**

| <i>Suggested courses</i>  | Semester  | tot. h. | ECTS |
|---|---|---------|------|
| <b>English</b>  |   |         |      |
| – English for Masters Students I  | AS  | –       | 3    |
| – English for Masters Students II   | SS  | –       | 3    |
| <b>Geography</b>  |   |         |      |
| – Non selected courses from the specialization modules  |   |         |      |
| <b>Other disciplines</b>  |   |         |      |
| Courses can also be chosen from other departments of the Faculty of Science and Medicine, from other faculties of the University of Fribourg as well as from other universities in Switzerland or abroad, <b>with the consent of the supervisor of the Master thesis</b> (list to be done at the latest during the Master preliminary). Courses already assessed in another programme cannot be chosen again, and vice versa. |   |         |      |
| <b>Total</b>  | <b>balance to reach the minimum overall total of 120 ECTS among all modules</b> |         |      |

\* These courses are taught every second year.

## 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 integrative approaches (SGG.0 0409 and SGG.00426), discuss natural and human factors involved in this process (SGG.00424), and teach methods of generating and analysing geographical information (SGG.00425). The Geocolloquium (SGG.00512) gives an opportunity to the master students to expand their understanding to current topics of research.

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

The lectures of the *supporting courses module* offer a wide range of fields and disciplines and allow the student to further broaden his/her specialisation, 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 be approved by the supervisor** of the Master thesis.

### 2.2.2 The Seminars

The seminars (SGG.00449 to SGG.00452, SGG.00471, SGG.00473, SGG.00477, SGG.00484, SGG.00485, SGG.00487) request active participation during the meetings as well as writing a seminar paper. Every student must participate in the two seminars (SGG.00410, SGG.00503) related to the Master thesis, as stated below.

### 2.2.3 The Master Thesis

The preparation and the elaboration of the Master thesis (SGG.00503) are accompanied by two seminars. The first (SGG.00410) 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 SGG.00503) 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 (SGG.00503). 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 **first two validation packages** 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 (SGG.00410, and SGG.00503), including the master thesis, constitute the **third validation package**. 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 Nature, Society and Politics, University of Fribourg (MSc)** is conferred upon the validation of all three packages.

## 2.4 Admission Procedure to the Master Programme

Acceptance to a Master programme in Geography may be granted provided the following two conditions have been met by the applicant:

- Satisfying the University admission requirements as defined in the *Règlement concernant l’admission à l’Université de Fribourg* (<https://www3.unifr.ch/apps/legal/fr/document/274904>),
- The student possesses a Bachelor of Science in Geography from the University of Fribourg or an academic degree judged equivalent by the Faculty of Science and Medicine.

For candidates with degrees in geography that are not judged equivalent by the Faculty of Science and Medicine, the Commission for Students’ Requests will decide on eligibility (*Commission des requêtes des étudiant-e-s*, Dean’s Office, Faculty of Science and Medicine, ch. du Musée 8, CH-1700 Fribourg, Switzerland).

Based on the candidate’s academic qualification, the Commission for Students’ Requests can accept the application on the condition that additional requirements are fulfilled, provided they are of a minor scope and can be completed simultaneously with the Master studies. Otherwise, access is denied or applicants can be admitted to a “pre-master programme” and can begin the Master programme only after having fulfilled the requirements initially set for the pre-master. Final acceptance to the Master programme for a qualifying student depends on the successful completion of the additional requirements.

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 the complementary programme in Geography BSc-60 in order to be admitted to the programme of Master in Geography. The courses of this programme, 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.