Cycle view of the study programme

Depending on your educational background or depending on the focus, it is possible that the prerequisites / corequisites for the 1st year of the programme are presented in the block 2. You are therefore invited to read through the list of courses in block 2 even if you are registering for the first time in this master.

As part of the Master in Mining and Geological Engineering, students must follow or approve 60 core training credits (including the placement and final dissertation), 30 credits from one of the specialised courses on Mineral Resources and Recycling, Environmental and Geological Engineering or 30 credits from a course of their choice.

Ideally, students studying for the master¿s degree will have acquired the competences and knowledge corresponding to the 40 credits of technical courses specific to the field of 'Georesources and Environmental Geology', taught within the framework of the Bachelor in Civil Engineering.
The master¿s is `bilingual French/English'. Therefore, students who actively master French and/or English and another language passively can take all the classes. On a practical level, students can ask staff questions in both languages. Course material exists in both French and English (pdf, ppt and reference books). Students must indicate in which language they would like the questions to be.
An organised, but optional, final-year trip allows the future professionals to take part in guided tours of companies and exceptional foreign geological sites.

Compulsory courses (B1 : 30Cr, B2 : 30Cr)

		Bl	Or	Th	Pr	Au	Cr
CHIM9284-2	*Analytical chemistry I - Chemical analysis methods , Theory* - Gauthier EPPE	B1	Q1	20	-	-	**2**
CHIM0740-2	*Analytical chemistry II - Physicochemical techniques of analysis, Part A* - Gauthier EPPE **Corequisite :** CHIM9284-2 - Chimie analytique I - Méthodes chimiques d'analyse	B1	Q2	10	30	-	**3**
GEOL0006-4	*Rocks and sedimentary processes (partie 1)* - Frédéric BOULVAIN - [4h Labo.] **Corequisite :** GEOL1026-1 - Compléments de géologie	B1	Q1	30	-	[+]	**2**
GEOL0284-1	*Geology of Wallonia* - Frédéric BOULVAIN - [6d FW] **Corequisite :** GEOL0006-4 - Roches et processus sédimentaires	B1	Q2	20	-	[+]	**3**
GEOL1042-1	*Geological imaging and inverse modeling* (english language) - Elsy IBRAHIM, Frédéric NGUYEN, Eric PIRARD - [30h Proj.] **Corequisite :** GEOL0021-7 - Prospection géophysique	B1	Q1	30	10	[+]	**5**
GCIV0045-4	*Rock mechanics, tunnels, rock slopes, rock foundations* - Robert CHARLIER - [1d FW, 50h Proj.] **Corequisite :** GCIV0603-2 - Géotechnique et infrastructures	B1	Q2	20	4	[+]	**5**
GEOL0097-2	*Geostatistics* (english language) - Elsy IBRAHIM, Eric PIRARD - [30h Labo.]	B1	Q1	30	-	[+]	**5**
GEOL0286-2	*Geological mapping* - *From theory to fieldwork* - HansBalder HAVENITH - [2d FW] - *Project* - HansBalder HAVENITH - [20h Proj.]	B1	Q2 5 -	 20 -	 [+] [+]		**5**
ATFE0011-1	*Master Thesis (including an introduction to research methodology)* - COLLÉGIALITÉ, Frédéric NGUYEN - [600h Proj.]	B2	TA	-	-	[+]	**20**
ASTG0017-1	*Internship* - Serge BROUYÈRE	B2	TA	-	-	-	**5**
GEST3162-1	*Principles of management* (english language) - Michael GHILISSEN, François PICHAULT	B2	Q1	25	25	-	**5**

Optional courses (B1 : 30Cr, B2 : 30Cr)

Choose one focus from the following : (B1 : 20Cr, B2 : 10Cr)

Professional focus in mineral resources and recycling (B1 : 20Cr, B2 : 10Cr)

GEOL0289-1	*Analytic mineralogy* (english language) - Frédéric HATERT - [15h Labo.] **Corequisite :** GEOL0312-1 - Process mineralogy	B1	Q2	30	15	[+]	**5**
GEOL0315-1	*Solid Waste and by products processing* (english language) - Stoyan GAYDARDZHIEV - [20h Labo., 7h Proj., 1,5d FW]	B1	Q1	20	-	[+]	**5**
GEOL0237-2	*Exploitation of mineral deposits* - Eric POOT - [2d FW] **Corequisite :** GEOL0020-7 - Mineral resources	B1	Q1	25	15	[+]	**5**
GEOL0312-1	*Process mineralogy* (english language) - Eric PIRARD - [25h Labo., 15h Proj.]	B1	Q1	25	-	[+]	**5**
GEOL1043-1	*Extractive metallurgy* (english language) - Stoyan GAYDARDZHIEV, Andreas PFENNIG - [1d FW] **Corequisite :** META0431-3 - Génie minéral (procédés)	B2	Q1	30	20	[+]	**5**
GEOL1044-1	*Raw Materials in a Circular Economy* (english language) - Maud BAY, Sandra BELBOOM, Eric PIRARD - [1d FW]	B2	Q1	26	26	[+]	**5**

Professional focus in environmental and geological engineering (B1 : 20Cr, B2 : 10Cr)

GEOL0083-3	*Groundwater modelling* (english language) - Alain DASSARGUES, Tanguy ROBERT - [30h Labo., 30h Proj.] **Corequisite :** GEOL0013-5 - Hydrogéologie	B1	Q1	30	-	[+]	**5**
GEOL1028-1	*Site investigation* - Serge BROUYÈRE, Frédéric NGUYEN - [40d Proj., 40h Labo., 5d FW]	B1	Q2	5	-	[+]	**5**
GEOL0277-1	*Groundwater quality and protection* - Serge BROUYÈRE - [1d FW, 35h Proj.] **Corequisite :** GEOL0013-5 - Hydrogéologie	B1	Q1	20	20	[+]	**5**
GEOL0313-1	*Remediation of contaminated sites* - Serge BROUYÈRE - [2d FW, 40h Proj.]	B2	Q1	24	24	[+]	**5**
GEOL1046-1	*Geothermy* (english language) - Robert CHARLIER, Alain DASSARGUES, HansBalder HAVENITH - [40h Proj., 1d FW] **Corequisite :** GEOL0083-3 - Groundwater modelling	B1	Q2	18	15	[+]	**5**
GCIV2058-1	*Environmental geotechnics* (english language) - Frédéric COLLIN - [1d FW, 10h Labo., 15h Proj.]	B2	Q1	20	10	[+]	**5**

Choose courses totalling 30 ECTS out of the following : (B1 : 10Cr, B2 : 20Cr)

Students who have not followed the GEOL0021-7, GCIV0603-2, GEOL1026-1 courses in the Civil Engineering programme or acquired the corresponding knowledge and skills must first incorporate these three courses into their programme; these courses are co-requisites for the compulsory courses in the Masters.
Similarly, the GEOL0020-7 and META0431-3 courses are co-requisites for the specialised focus on Mineral Resources & Recycling and the GEOL0013-5 course is a co-requisite for the Environmental and Geological Engineering focus. Students who do not have the corresponding skills must choose their courses as a result.

GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 20h Proj.]	B1	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B1	Q1	26	-	[+]	**5**
GEOL0319-2	*Geological hazard and risk assessment* (english language) - *From theory to field work* - HansBalder HAVENITH - [2d FW] - *Project* - HansBalder HAVENITH - [20h Proj.]	B1	Q2 25 -	 10 -	 [+] [+]		**5**
GEOL0013-5	*Hydrogeology*	B1	Q1				**5**

	- *Part A* - Alain DASSARGUES - [1d FW] - *Part B* - Alain DASSARGUES - [10h Proj.]		26 -	20 -	[+] [+]		
GCIV0603-2	*Geotechnics and infrastructure* - Robert CHARLIER - [0,5d FW, 2h Labo.]	B1	Q2	26	26	[+]	**5**
META0431-3	*Mineral processing (processes)* - Stoyan GAYDARDZHIEV - [1d FW, 26h Labo., 10h Proj.]	B1	Q2	26	-	[+]	**5**
GEOL1026-1	*Complement of geology* - *Part 1 : Elements of mineralogy* - Frédéric HATERT - *Part 2 : Elements of magmatic and metamorphic petrology* - Jacqueline VANDER AUWERA	B1	Q2 18 8	 18 8	 - -		**5**
GCIV0185-7	*Linear numerical methods in Civil and Geological Engineering* - Laurent DUCHENE, Michel PIROTTON - [30h Proj.]	-	Q1	22	30	[+]	**5**
GEOL0008-1	*Origin and production of hydrocarbons* (Even years) - *Geology applied to the exploration of hydrocarbons* - Pierre CORNET - *Techniques for extracting non-conventional hydrocarbons* - Xavier LIMPENS	-	Q1 15 15	 - -	 - -		**5**
GCIV0184-5	*Building Materials* - Luc COURARD - [0,5d FW, 12h Labo., 12h Proj.]	-	Q2	36	16	[+]	**5**
GEOL0029-4	*Tectonics* - *Part A* - Olivier BOLLE - *Field work* - Olivier BOLLE - [2d FW]	-	 30 -	 20 -	 - [+]		**5**
MECA0526-1	*High Temperature Processes in Recycling & Remanufacturing* (english language) - Anne MERTENS	-	Q1	26	26	-	**5**
CHIM0695-2	*Introduction to the modelling of chemical processes* (english language) - Grégoire LÉONARD	B2	Q1	20	32	-	**5**
GEOL0310-1	*Project* - COLLÉGIALITÉ, Stoyan GAYDARDZHIEV, Frédéric NGUYEN - [4d FW, 10h Labo., 90h Proj.]	-	TA	10	-	[+]	**5**
GEOL1045-1	*Economic and societal issues in mining and recycling* (english language) - Eric PIRARD - [30h Proj., 2d FW]	B2	Q1	15	-	[+]	**5**
GEOL0281-4	*Environmental impact of industrial and mining activities* - Stoyan GAYDARDZHIEV - [1d FW, 25h Labo., 5h Proj.]	B2	Q1	25	-	[+]	**5**
INGE0012-1	*Scientific research in engineering and its impact on innovation* (english language) - Rodolphe SEPULCHRE	B2	Q2	26	26	-	**5**

[...] or any individual course from the non-chosen focus in block 1

[...] or any individual course from the non-chosen focus in block 2

or from the courses of the list below relating to the theme "Urban and Environmental Engineering"

UEEN0001-1	*Water and energy in urban environment* (english language) - Pierre DEWALLEF, Benjamin DEWALS - [2d FW]	-	Q1	26	26	[+]	**5**
UEEN0002-1	*Urban recycling : land and wastes* (english language) - Serge BROUYÈRE, Luc COURARD - [10h Labo., 20h Proj., 2d FW]	-	Q1	20	10	[+]	**5**
UEEN0003-1	*Resilience and constructions in urban areas* (english language) - Vincent DENOËL, Boyan MIHAYLOV - [60h Proj., 1d FW]	-	Q1	12	12	[+]	**5**
UEEN0004-1	*Urban planning and transportation* (english language) - Mario COOLS, Jacques TELLER - [1d FW]	-	Q1	26	26	[+]	**5**
ARCH0353-2	*Sociology and urban sociology* - *Theoretical courses* - Stéphane DAWANS - *Lectures approfondies de textes* - [6h Moni. ex.]	-	Q1 24 -	 - -	 - [+]		**2**
UEEN0006-1	*UEE project* (english language) - Shady ATTIA, Frédéric NGUYEN, Philippe RIGO - [100h Proj., 1d FW]	-	Q1	-	90	[+]	**8**

Additional ECTS Master in mining and geological engineering (generic programme)

Optional courses (B0 : 60Cr)

Each student¿s programme will be determined by the jury depending on their prior training. If an applicant does not meet certain prerequisites, his or her programme may include up to 60 additional course credits essentially taken from the list below : (B0 : 60Cr)

MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	B0	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanPierre JASPART - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	**5**
MECA0011-2	*Fluid Mechanics : Basics* - Michel PIROTTON - [25h Proj.]	B0	Q2	20	30	[+]	**5**
GEOL0001-1	*Geology and Engineering geology* - Alain DASSARGUES - [2d FW]	B0	Q2	30	22	[+]	**5**
GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 20h Proj.]	B0	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B0	Q1	26	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - *Part A* - Alain DASSARGUES - [1d FW] - *Part B* - Alain DASSARGUES - [10h Proj.]	B0	Q1 26 -	 20 -	 [+] [+]		**5**
GCIV0603-2	*Geotechnics and infrastructure* - Robert CHARLIER - [0,5d FW, 2h Labo.]	B0	Q2	26	26	[+]	**5**
META0431-3	*Mineral processing (processes)* - Stoyan GAYDARDZHIEV - [1d FW, 26h Labo., 10h Proj.]	B0	Q2	26	-	[+]	**5**

[...] Choose maximum 15 credits to complete the study programme

Additional ECTS Master in mining and geological engineering (aimed at bachelors in geography)

The Bachelors in Geographic Sciences follows the normal Masters programme with the addition of the 44 credits below (Block 0).

MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	B0	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanPierre JASPART - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	**5**
MECA0011-2	*Fluid Mechanics : Basics* - Michel PIROTTON - [25h Proj.]	B0	Q2	20	30	[+]	**5**
GEOL0001-1	*Geology and Engineering geology* - Alain DASSARGUES - [2d FW]	B0	Q2	30	22	[+]	**5**
GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 20h Proj.]	B0	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B0	Q1	26	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - *Part A* - Alain DASSARGUES - [1d FW] - *Part B* - Alain DASSARGUES - [10h Proj.]	B0	Q1 26 -	 20 -	 [+] [+]		**5**
GCIV0603-2	*Geotechnics and infrastructure* - Robert CHARLIER - [0,5d FW, 2h Labo.]	B0	Q2	26	26	[+]	**5**

META0431-3	*Mineral processing (processes)* - Stoyan GAYDARDZHIEV - [1d FW, 26h Labo., 10h Proj.]	B0	Q2	26	-	[+]	**5**

Master en ingénieur civil des mines et géologue, à finalité - Programme aménagé pour les bacheliers en sciences géologiques, les masters en sciences géologiques, les bacheliers en science de l'ingénieur, orientation bioingénieur, les masters en sciences géographiques (admission sur titre)