Block view of the study programme

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Block 1

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

CHIM9284-2	*Analytical chemistry I - Chemical analysis methods , Theory* - Gauthier EPPE	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	Q2	10	30	-	**3**
GEOL0006-4	*Rocks and sedimentary processes (partie 1)* - Frédéric BOULVAIN - [4h Labo.] **Corequisite :** GEOL1026-1 - Compléments de géologie	Q1	30	-	[+]	**2**
GEOL0284-1	*Geology of Wallonia* - Frédéric BOULVAIN - [6d FW] **Corequisite :** GEOL0006-4 - Roches et processus sédimentaires	Q2	20	-	[+]	**3**
GEOL1042-1	*Geological imaging and inverse modeling* (english language) - Frédéric NGUYEN, Eric PIRARD - [30h Proj.] **Corequisite :** GEOL0021-7 - Prospection géophysique	Q2	30	10	[+]	**5**
GCIV0045-4	*Rock mechanics, tunnels, rock slopes, rock foundations* - Robert CHARLIER - [1d FW, 50h Proj.] **Corequisite :** GCIV0603-2 - Géotechnique et infrastructures	Q2	20	4	[+]	**5**
GEOL0097-2	*Geostatistics* (english language) - Eric PIRARD - [30h Labo.]	Q1	30	-	[+]	**5**
GEOL0286-2	*Geological mapping* - *From theory to fieldwork* - HansBalder HAVENITH - [2d FW] - *Project* - HansBalder HAVENITH - [20h Proj.]	Q2	 5 -	 20 -	 [+] [+]	**5**

Optional courses

Choose one focus from the following :

Professional focus in mineral resources and recycling

GEOL0289-1	*Analytic mineralogy* (english language) - Frédéric HATERT - [15h Labo.] **Corequisite :** GEOL0312-1 - Process mineralogy	Q2	30	15	[+]	**5**
GEOL0315-1	*Solid Waste and by products processing* (english language) - Stoyan GAYDARDZHIEV - [20h Labo., 7h Proj., 1,5d FW]	Q1	20	-	[+]	**5**

GEOL0237-2	*Exploitation of mineral deposits* - - Suppl : Eric POOT - [2d FW] **Corequisite :** GEOL0020-7 - Mineral resources	Q1	25	15	[+]	**5**
GEOL0312-1	*Process mineralogy* (english language) - Eric PIRARD - [25h Labo., 15h Proj.]	Q1	25	-	[+]	**5**

Professional focus in environmental and geological engineering

GEOL0083-3	*Groundwater modelling* (english language) - Alain DASSARGUES - [30h Labo., 30h Proj.] **Corequisite :** GEOL0013-5 - Hydrogéologie	Q1	30	-	[+]	**5**
GEOL1028-1	*Site investigation* - Serge BROUYÈRE, Frédéric NGUYEN - [40d Proj., 40h Labo., 5d FW]	Q2	5	-	[+]	**5**
GEOL1046-1	*Geothermy* (english language) - Robert CHARLIER, Alain DASSARGUES, HansBalder HAVENITH - [40h Proj., 1d FW] **Corequisite :** GEOL0083-3 - Groundwater modelling	Q2	18	15	[+]	**5**
GEOL0277-1	*Groundwater quality and protection* (english language) - Serge BROUYÈRE - [1d FW, 35h Proj.] **Corequisite :** GEOL0013-5 - Hydrogéologie	Q1	20	20	[+]	**5**

Choose courses totalling 10 credits out of the following :

Students who haven't taken the GEOL0021-7, GCIV0603-2, GEOL1026-1 courses in the 'Geo-resources and Environmental Geology' option in the bachelor's engineering programme or who haven't acquired the corresponding knowledge or skills, must include these three courses in their programme as a priority; these courses are corequisites for the master's compulsory courses.
The GEOL0020-7 and GEOL0314-1 courses are also corequisites for the professional focus in Mineral Resources & Recycling and the GEOL0013-5 course is a corequisite for the Environmental & Geological Engineering focus. Students who don't master the corresponding skills shall choose their courses accordingly.

GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	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.]	Q2	25 -	10 -	[+] [+]	**5**
GEOL0013-5	*Hydrogeology* - *Part A* - Alain DASSARGUES - [1d FW] - *Part B* - Alain DASSARGUES - [10h Proj.]	Q1	26 -	20 -	[+] [+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Robert CHARLIER - [1d FW, 2h Labo.]	Q2	26	26	[+]	**5**
GEOL0314-1	*Mineral processing I - basics* (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	Q1	30	-	[+]	**5**
GEOL1026-1	*Complement of geology* - *Part 1 : Elements of mineralogy* - Frédéric HATERT - *Part 2 : Elements of magmatic and metamorphic petrology* - Jacqueline VANDER AUWERA	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**
GEOL0008-4	*Hydrocarbons in the energy transition, Geology applied to the exploration of hydrocarbons* - Pierre CORNET (Even years)	Q1	15	-	-	**2**
GEOL1050-1	*Unconventional hydrocarbons in the energy transition* - Xavier LIMPENS (Even years)	Q1	15	-	-	**3**

GCIV0184-5	*Building Materials* - Luc COURARD, Anne HABRAKEN - [0,5d FW, 12h Labo., 12h Proj.]	Q2	36	16	[+]	**5**
GEOL0029-4	*Tectonics* - *Part A* - Olivier BOLLE - *Field work* - Olivier BOLLE - [2d FW]	Q1	30 -	20 -	- [+]	**5**
MECA0526-1	*High Temperature Processes in Recycling & Remanufacturing* (english language) - Anne MERTENS	Q1	26	26	-	**5**
GEOL0310-1	*Project* - COLLÉGIALITÉ, Stoyan GAYDARDZHIEV, Frédéric NGUYEN - [4d FW, 10h Labo., 90h Proj.]	TA	10	-	[+]	**5**

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

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**
UEEN0004-1	*Urban planning and transportation* (english language) - Mario COOLS, Mario COOLS - [1d FW]	Q1	26	26	[+]	**5**
UEEN0005-1	*Urban sociology and co-design* (english language) - Stéphane DAWANS, Catherine ELSEN - [20h Proj., 1d FW]	Q1	20	10	[+]	**2**
UEEN0006-1	*UEE project* (english language) - Shady ATTIA, Frédéric NGUYEN, Philippe RIGO - [100h Proj., 1d FW]	Q1	-	90	[+]	**8**

Block 2

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.

Compulsory courses

ATFE0011-1	*Master Thesis (including an introduction to research methodology)* - COLLÉGIALITÉ, Frédéric NGUYEN - [600h Proj.]	TA	-	-	[+]	**20**
ASTG0017-1	*Internship* - Serge BROUYÈRE	TA	-	-	-	**5**
GEST3162-1	*Principles of management* (english language) - Michael GHILISSEN, François PICHAULT	Q1	25	25	-	**5**

Optional courses

Choose one focus from the following :

Professional focus in mineral resources and recycling

GEOL1043-1	*Extractive metallurgy* (english language) - Stoyan GAYDARDZHIEV, Andreas PFENNIG - [1d FW] **Corequisite :** GEOL0314-1 - Mineral processing I - basics	Q1	30	20	[+]	**5**
GEOL1044-1	*Raw Materials in a Circular Economy* (english language) - Maud BAY, Sandra BELBOOM, Eric PIRARD - [1d FW]	Q1	26	26	[+]	**5**

Professional focus in environmental and geological engineering

GEOL0313-1	*Remediation of contaminated sites* (english language) - Serge BROUYÈRE - [2d FW, 40h Proj.]	Q1	24	24	[+]	**5**
GCIV2058-1	*Environmental geotechnics* (english language) - Frédéric COLLIN - [1d FW, 10h Labo., 15h Proj.]	Q1	20	10	[+]	**5**

Choose courses totalling 20 credits out of the following :

GCIV0185-7	*Linear numerical methods in Civil and Geological Engineering* - Laurent DUCHENE, Michel PIROTTON - [30h Proj.]	Q1	22	30	[+]	**5**
GEOL0008-4	*Hydrocarbons in the energy transition, Geology applied to the exploration of hydrocarbons* - Pierre CORNET (Even years)	Q1	15	-	-	**2**
GEOL1050-1	*Unconventional hydrocarbons in the energy transition* - Xavier LIMPENS (Even years)	Q1	15	-	-	**3**
GCIV0184-5	*Building Materials* - Luc COURARD, Anne HABRAKEN - [0,5d FW, 12h Labo., 12h Proj.]	Q2	36	16	[+]	**5**
GEOL0029-4	*Tectonics* - *Part A* - Olivier BOLLE - *Field work* - Olivier BOLLE - [2d FW]	Q1	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	Q1	20	32	-	**5**
GEOL0310-1	*Project* - COLLÉGIALITÉ, Stoyan GAYDARDZHIEV, Frédéric NGUYEN - [4d FW, 10h Labo., 90h Proj.]	TA	10	-	[+]	**5**
GEOL0281-4	*Environmental impact of industrial and mining activities* - Stoyan GAYDARDZHIEV - [1d FW, 25h Labo., 5h Proj.]	Q1	25	-	[+]	**5**
GEOL1045-1	*Economic and societal issues in mining and recycling* (english language) - Eric PIRARD - [30h Proj., 2d FW]	Q1	15	-	[+]	**5**
INGE0012-1	*Scientific research in engineering and its impact on innovation* (english language) - Rodolphe SEPULCHRE	Q2	26	26	-	**5**

[...] 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**
UEEN0004-1	*Urban planning and transportation* (english language) - Mario COOLS, Mario COOLS - [1d FW]	Q1	26	26	[+]	**5**
UEEN0005-1	*Urban sociology and co-design* (english language) - Stéphane DAWANS, Catherine ELSEN - [20h Proj., 1d FW]	Q1	20	10	[+]	**2**
UEEN0006-1	*UEE project* (english language) - Shady ATTIA, Frédéric NGUYEN, Philippe RIGO - [100h Proj., 1d FW]	Q1	-	90	[+]	**8**

Bloc d'aménagement du programme de l'année

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

Optional courses

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 :

MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanPierre JASPART - [2h Labo., 12h Proj.]	Q1	27	25	[+]	**5**
MECA0011-2	*Fluid Mechanics : Basics* - Michel PIROTTON - [25h Proj.]	Q2	20	30	[+]	**4**

GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - *Part A* - Alain DASSARGUES - [1d FW] - *Part B* - Alain DASSARGUES - [10h Proj.]	Q1	 26 -	 20 -	 [+] [+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Robert CHARLIER - [1d FW, 2h Labo.]	Q2	26	26	[+]	**5**
GEOL0314-1	*Mineral processing I - basics* (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	Q1	30	-	[+]	**5**
GEOL0001-1	*Geology and Engineering geology* - Alain DASSARGUES - [2d FW]	Q2	30	22	[+]	**5**

[...] Choose maximum 16 credits to complete the curriculum

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	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanPierre JASPART - [2h Labo., 12h Proj.]	Q1	27	25	[+]	**5**
MECA0011-2	*Fluid Mechanics : Basics* - Michel PIROTTON - [25h Proj.]	Q2	20	30	[+]	**4**
GEOL0001-1	*Geology and Engineering geology* - Alain DASSARGUES - [2d FW]	Q2	30	22	[+]	**5**
GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - *Part A* - Alain DASSARGUES - [1d FW] - *Part B* - Alain DASSARGUES - [10h Proj.]	Q1	 26 -	 20 -	 [+] [+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Robert CHARLIER - [1d FW, 2h Labo.]	Q2	26	26	[+]	**5**
GEOL0314-1	*Mineral processing I - basics* (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	Q1	30	-	[+]	**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)