Cycle view of the study programme

		Bl	Or	Th	Pr	Au	Cr

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 Civil Engineering Masters in Mines and Geology, 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 taking the Masters will have acquired the skills and knowledge corresponding to 40 credits for the specific technical classes in the field of georesources and environmental geology organised as part of the Bachelor in civil engineering. The master is "bilingual French/English". Therefore, students who actively master French and/or English and another language passively will be capable of following the classes.
On a practical level, students can communicate with staff 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 optional but supervised final year trip allows prospective professionals to make guided tours of companies and exceptional geological sites.

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

CHIM9282-1	*Analytical Chemistry, Part A : chemical techniques of analysis* - Gauthier EPPE	B1	Q1	20	-	-	**2**
CHIM9282-3	*Analytical Chemistry, Part B : Physicochemical techniques of analysis* - Gauthier EPPE **Corequisite :** CHIM9282-1 - Chimie analytique	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	-	[+]	**3**
GEOL0316-1	*Rocks and sedimentary processes (part 2)* - Frédéric BOULVAIN - [6d FW] **Corequisite :** GEOL0006-4 - Roches et processus sédimentaires	B1	Q2	20	-	[+]	**2**
GEOL1042-1	*Geological imaging and inverse modeling* (english language) - 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) - Thomas HERMANS, Eric PIRARD - [30h Labo.]	B1	Q1	30	-	[+]	**5**
GEOL0279-1	*Geological mapping* - HansBalder HAVENITH - [2d FW, 10h Labo., 50h Proj.]	B1	Q2	10	20	[+]	**5**
ATFE0011-1	*Final Work (including an introduction to research methodology)* - COLLÉGIALITÉ, Frédéric NGUYEN - [600h Proj.]	B2	TA	-	-	[+]	**20**
ASTG0017-1	*Placement* - Serge BROUYÈRE	B2	TA	-	-	-	**5**
GEST3162-1	*Principles of management* (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE - Suppl : Fanny FOX	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 minerals deposits* - Eric POOT - [1d FW] **Corequisite :** GEOL0020-7 - Mineral resources	B1	Q2	20	10	[+]	**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	30	30	[+]	**5**

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

GEOL0083-3	*Groundwater modelling* (english language) - Alain DASSARGUES - [30h Labo., 30h Proj.] **Corequisite :** GEOL0013-5 - Hydrogéologie	B1	Q1	30	-	[+]	**5**
GEOL0270-2	*Geohazard assessment and geomorphology* (english language) - HansBalder HAVENITH - [1d FW, 5h Labo., 15h Proj.]	B1	Q1	30	10	[+]	**5**
GEOL1028-1	*Site investigation* - Serge BROUYÈRE, Frédéric NGUYEN - [5d FW, 60h Proj.]	B1	Q2	12	-	[+]	**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**
GCIV2058-1	*Environmental geotechnics* (english language) - Frédéric COLLIN - [1d FW, 10h Labo., 15h Proj.]	B2	Q1	20	10	[+]	**5**

Research focus (B1 : 20Cr, B2 : 10Cr)

Aimed at students who have taken this focus in 2015-2016.

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

Students who have not followed the courses GEOL0021-7, GCIV0603-2, GEOL1026-1 from the "Georesources and Environment" option of the bachelor in civil engineering programme or acquired the equivalent knowledge and skills have to choose in priority these three courses in their study programme ; theses courses are corequisites of compulsory courses of the master.
Similarly, the courses GEOL0020-7 and META0431-3 are corequisites of the professional focus in Mineral Resources & Recycling and the GEOL0013-5 course is a co-requisite of Environmental & Geological Engineering. Students who do not master the correspon- ding skills will guide their choice of courses accordingly.

GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 10h Proj.]	B1	Q2	30	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 30h Labo., 32h Proj.]	B1	Q1	30	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - Alain DASSARGUES - [1d FW, 10h Proj.]	B1	Q1	30	25	[+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Robert CHARLIER - [0,5d FW, 2h	B1	Q2	26	26	[+]	**5**

	Labo.]						
META0431-3	*Mineral processing (processes)* - Stoyan GAYDARDZHIEV - [1d FW, 30h Labo., 10h Proj.]	B1	Q2	30	-	[+]	**5**
GEOL1026-1	*Complement of geology* *- 1st part : elements of mineralogy* - Frédéric HATERT *- 2nd part : Elements of Magmatic and metamorphic petrology* - Jacqueline VANDER AUWERA	B1	Q2 20 10	 20 10	 - -		**5**
GCIV0185-7	*Straight-line Numerical Methods for Civil Engineering and Geology* - Laurent DUCHENE, Michel PIROTTON - [30h Proj.]	-	Q1	25	35	[+]	**5**
GEOL0008-1	*Origin and production of hydrocarbons* - Pierre CORNET, Xavier LIMPENS (Even years)	-	Q1	30	-	-	**5**
GCIV0184-4	*Building materials* - Luc COURARD - [1d FW, 12h Labo., 12h Proj.]	-	Q2	36	4	[+]	**5**
GEOL0029-4	*Tectonics* - Olivier BOLLE - [2d FW]	-	Q1	30	20	[+]	**5**
GEOL1046-1	*Geothermy* (english language) - Robert CHARLIER, Alain DASSARGUES, HansBalder HAVENITH - [40h Proj., 1d FW] **Prerequisite :** GEOL0083-3 - Groundwater modelling	B2	Q1	18	15	[+]	**5**
GEOL1045-1	*Economic and societal issues in mining* (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**
GEOL0310-1	*Project* - COLLÉGIALITÉ, Stoyan GAYDARDZHIEV, Frédéric NGUYEN - [4d FW, 10h Labo., 90h Proj.]	-	TA	10	-	[+]	**5**
INGE0012-1	*Scientific research in engineering and its impact on innovation* (english language) - Rodolphe SEPULCHRE	B2	Q2	30	30	-	**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 environments* (english language) - Pierre DEWALLEF, Benjamin DEWALS - [2d FW]	-	Q1	30	30	[+]	**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) - Robert CHARLIER, Thomas GERNAY - [60h Proj., 1d FW]	-	Q1	12	12	[+]	**5**
UEEN0004-1	*Urban planning and transportation* (english language) - Mario COOLS, Jacques TELLER - [1d FW]	-	Q1	30	30	[+]	**5**
UEEN0005-1	*Urban sociology and co-design* (english language) - [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**

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	30	28	[+]	**5**
MECA0011-2	*Fluid Mechanics : Basics* - Michel PIROTTON - [25h Proj.]	B0	Q2	20	30	[+]	**4**
GEOL0001-1	*Geology and Engineering geology* - Alain DASSARGUES - Suppl : Philippe ORBAN - [2d FW]	B0	Q2	35	25	[+]	**5**
GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 10h Proj.]	B0	Q2	30	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 30h Labo., 32h Proj.]	B0	Q1	30	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - Alain DASSARGUES - [1d FW, 10h Proj.]	B0	Q1	30	25	[+]	**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, 30h Labo., 10h Proj.]	B0	Q2	30	-	[+]	**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	B0	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanPierre JASPART - [2h Labo., 12h Proj.]	B0	Q1	30	28	[+]	**5**
MECA0011-2	*Fluid Mechanics : Basics* - Michel PIROTTON - [25h Proj.]	B0	Q2	20	30	[+]	**4**
GEOL0001-1	*Geology and Engineering geology* - Alain DASSARGUES - Suppl : Philippe ORBAN - [2d FW]	B0	Q2	35	25	[+]	**5**
GEOL0021-7	*Geophysical prospecting* - Lucien HALLEUX, Frédéric NGUYEN - [5d FW, 10h Proj.]	B0	Q2	30	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - Eric PIRARD - [1d FW, 30h Labo., 32h Proj.]	B0	Q1	30	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - Alain DASSARGUES - [1d FW, 10h Proj.]	B0	Q1	30	25	[+]	**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, 30h Labo., 10h Proj.]	B0	Q2	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)