Block view of the study programme

		Or	Th	Pr	Au	Cr

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 engineering and geology, each student must complete or validate 55 credits of the core curriculum (including internship and master's thesis), 30 credits of the specialised focus, and 25 credits of elective courses.

Ideally, students entering the Master's programme will have acquired the skills and knowledge corresponding to the 40 credits of technical courses specific to the `Georesources and Environmental Geology¿ field organised as part of the Bachelor's degree 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.

A supervised but optional end-of-studies trip enables future professionals to visit companies and exceptional foreign geological sites.

Core curriculum compulsory courses

CHIM9284-2	*Chimie analytique I - Méthodes chimiques d'analyse, Théorie* - Gauthier EPPE	Q1	26	-	-	**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**
GEOL0324-2	*Sedimentology* - *Theory* - AnneChristine DA SILVA - *Laboratory* - AnneChristine DA SILVA - [4h Labo.]	Q1	30 -	- -	- [+]	**2**
GEOL0284-1	*Geology of Wallonia* - AnneChristine DA SILVA - [6d FW] **Corequisite :** GEOL0324-2 - Sédimentologie	Q2	20	-	[+]	**3**
GEOL1051-1	*Geological imaging and remote sensing* (english language) - [30h Proj.]	Q2	26	26	[+]	**5**
GCIV0045-4	*Rock mechanics, tunnels, rock slopes, rock foundations* - Bertrand FRANÇOIS - [1d FW, 50h Proj.] **Corequisite :** GCIV0603-2 - Géotechnique et infrastructures	Q2	20	4	[+]	**5**
GEOL0097-2	*Geostatistics* (english language) - [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**

Common core courses

Choose courses totalling 10 credits out of the following :

Students who have not taken the courses GEOL0021-7, GCIV0603-2, and GEOL1026-1 from the "Georesources and Environmental Geology" option of the bachelor's programme in civil engineering, or acquired the corresponding knowledge and skills, must give priority to including these three courses in their programme; these courses are corequisites of compulsory master's courses.
Similarly, the courses GEOL0020-7 and GEOL0314-1 are corequisites of the specialised focus in Mineral Resources & Recycling, and the course GEOL0013-5 is a corequisite of the specialised focus in Environmental & Geological Engineering. Students who do not master the corresponding skills must adapt their course choices accordingly.

GCIV0185-7	*Linear numerical methods in Civil and Geological Engineering* - Laurent DUCHENE, Michel PIROTTON - [30h Proj.]	Q1	22	30	[+]	**5**

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 - [1d FW]	Q1	26	26	[+]	**5**
CHIM0695-2	*Modelling of chemical & energy processes* (english language) - Grégoire LÉONARD	Q1	20	32	-	**5**
GEOL0021-7	*Geophysical prospecting* - Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	**5**
GEOL0319-2	(pas organisé en 2026-2027) *Geological hazard and risk assessment* (english language) - *From theory to field work* - HansBalder HAVENITH - [2d FW, 20h Proj.] - *Project* - HansBalder HAVENITH - [20h Proj.]	Q2	20 -	5 -	[+] [+]	**5**
GEOL0013-5	*Hydrogeology* - Serge BROUYÈRE - [1d FW, 10h Proj.]	Q1	24	20	[+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Bertrand FRANÇOIS - [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**
GEOL1052-1	*Project in inverse modelling : from field to algorithms* (english language) - Frédéric NGUYEN - [30h Proj., 4d FW] **Corequisite :** GEOL0021-7 - Prospection géophysique	Q1	5	40	[+]	**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"

UEEN0007-1	*District Energy Systems* (english language) - Pierre DEWALLEF - [8h Proj., 1d FW]	Q1	16	8	[+]	**3**
UEEN0008-1	*Urban water systems* (english language) - Benjamin DEWALS - [12h Proj.]	Q1	18	18	[+]	**3**
UEEN0002-1	*Land rehabilitation in urban environments* (english language) - Serge BROUYÈRE, Frédéric COLLIN - [10h Labo., 20h Proj., 2d FW]	Q1	20	10	[+]	**5**
UEEN0004-1	*Urban planning and transportation* (english language) - Mario COOLS, Jacques TELLER - [1d FW]	Q1	26	26	[+]	**5**
UEEN0005-1	*Participatory Design at an Urban Scale* (english language) - Catherine ELSEN - [20h Proj., 1d FW]	Q1	20	10	[+]	**3**
UEEN0006-1	*UEE Integrated Project* (english language) - Luc COURARD - [100h Proj., 1d FW]	Q1	-	90	[+]	**6**
GEOG2053-1	*Introduction to Urban GIS* - Roland BILLEN	Q1	20	20	-	**3**

Focus courses

GEOL0083-3	*Groundwater modelling* (english language) - Serge BROUYÈRE, Philippe ORBAN - [24h Labo., 24h Proj.] **Corequisite :** GEOL0013-5 - Hydrogéologie	Q1	24	-	[+]	**5**
GEOL1028-1	*Site investigation* - Serge BROUYÈRE, Frédéric NGUYEN - [40d Proj., 40h Labo., 5d FW]	Q2	5	-	[+]	**5**
GEOL1046-1	*Geothermal energy* (english language) - Bertrand FRANÇOIS, Philippe ORBAN	Q2	18	15	[+]	**5**

	- [40h Proj., 1d FW] **Corequisite :** GEOL0083-3 - Groundwater modelling					
GEOL0277-1	*Groundwater quality and protection* (english language) - Serge BROUYÈRE - [1d FW, 35h Proj.] **Corequisite :** GEOL0013-5 - Hydrogéologie	Q1	20	20	[+]	**5**

Block 2

Core curriculum compulsory courses

ATFE0011-1	*Master Thesis (including an introduction to research methodology)* - Serge BROUYÈRE, COLLÉGIALITÉ - [600h Proj.]	TA	-	-	[+]	**25**
ASTG0017-1	*Internship* - Stoyan GAYDARDZHIEV	TA	-	-	-	**5**
GEST3162-1	*Principles of management* (english language) - Michaël PARMENTIER, Willem STANDAERT - [25h Proj.]	Q1	30	-	[+]	**5**

Common core courses

Choose courses totalling 15 ECTS out of the following :

GCIV0185-7	*Linear numerical methods in Civil and Geological Engineering* - Laurent DUCHENE, Michel PIROTTON - [30h Proj.]	Q1	22	30	[+]	**5**
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 - [1d FW]	Q1	26	26	[+]	**5**
CHIM0695-2	*Modelling of chemical & energy processes* (english language) - Grégoire LÉONARD	Q1	20	32	-	**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) - [30h Proj., 2d FW]	Q1	15	-	[+]	**5**
GEOL1052-1	*Project in inverse modelling : from field to algorithms* (english language) - Frédéric NGUYEN - [30h Proj., 4d FW] **Corequisite :** GEOL0021-7 - Prospection géophysique	Q1	5	40	[+]	**5**

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

[...] In agreement with the Jury, the student may choose a maximum of 10 credits from the list of other Masters courses in the Faculty of Applied Sciences or ou du catalogue UNIC.

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

UEEN0007-1	*District Energy Systems* (english language) - Pierre DEWALLEF - [8h Proj., 1d FW]	Q1	16	8	[+]	**3**
UEEN0008-1	*Urban water systems* (english language) - Benjamin DEWALS - [12h Proj.]	Q1	18	18	[+]	**3**
UEEN0002-1	*Land rehabilitation in urban environments* (english language) - Serge BROUYÈRE, Frédéric COLLIN - [10h Labo., 20h Proj., 2d FW]	Q1	20	10	[+]	**5**
UEEN0004-1	*Urban planning and transportation* (english language) - Mario COOLS, Jacques TELLER - [1d FW]	Q1	26	26	[+]	**5**
UEEN0005-1	*Participatory Design at an Urban Scale* (english language) - Catherine ELSEN - [20h Proj., 1d FW]	Q1	20	10	[+]	**3**

UEEN0006-1	*UEE Integrated Project* (english language) - Luc COURARD - [100h Proj., 1d FW]	Q1	-	90	[+]	**6**
GEOG2053-1	*Introduction to Urban GIS* - Roland BILLEN	Q1	20	20	-	**3**

Focus courses

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**

Bloc d'aménagement du programme de l'année

Bridging courses Master in mining engineering and geology

Optional courses

Each student's programme will be determined by the board based on their prior academic background. If an applicant does not meet certain prerequisites, their programme may include up to 30 additional credits, mainly selected from the list below.

[...] If an applicant does not meet certain prerequisites, their programme may include up to 30 additional course credits, mainly selected from the list below:

MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanFrançois DEMONCEAU, Laurent DUCHENE - [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* - Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - Serge BROUYÈRE - [1d FW, 10h Proj.]	Q1	24	20	[+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Bertrand FRANÇOIS - [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* - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	Q2	30	22	[+]	**5**

Bridging courses Master in mining engineering and geology

Optional courses

Choose courses totalling 60 ECTS amongst :

[...] If an applicant does not meet certain prerequisites, their programme may include up to 60 additional course credits, mainly selected from the list below:

MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanFrançois DEMONCEAU, Laurent DUCHENE - [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* - Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - Serge BROUYÈRE - [1d FW, 10h Proj.]	Q1	24	20	[+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Bertrand FRANÇOIS - [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* - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	Q2	30	22	[+]	**5**

Bridging courses 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* - JeanFrançois DEMONCEAU, Laurent DUCHENE - [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* - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	Q2	30	22	[+]	**5**
GEOL0021-7	*Geophysical prospecting* - Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - Serge BROUYÈRE - [1d FW, 10h Proj.]	Q1	24	20	[+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Bertrand FRANÇOIS - [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**

Bridging courses Master in mining and geological engineering (aimed at masters in engineering: bioengineering)

Optional courses

The programme for the bachelor's degree in engineering sciences, bioengineering orientation, comprises 135 credits.

[...] It is established by the chair of the examination board, by recognising the student¿s previously acquired competences and completing the programme with courses listed in the adjustment block below.

MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanFrançois DEMONCEAU, Laurent DUCHENE - [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* - Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - [1d FW, 26h Labo., 32h	Q1	26	-	[+]	**5**

	Proj.]					
GEOL0013-5	*Hydrogeology* - Serge BROUYÈRE - [1d FW, 10h Proj.]	Q1	24	20	[+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Bertrand FRANÇOIS - [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* - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	Q2	30	22	[+]	**5**

Bridging courses Master in mining and geological engineering (aimed at Bachelors in geology)

Optional courses

The programme for the bachelor's degree in engineering sciences, bioengineering orientation, comprises 135 credits.

[...] This programme is established by the chair of the board of examiners, based on the student¿s previously acquired competences among the courses in block 1 (analytical chemistry, sedimentary rocks and processes, etc.), and is completed with courses selected from the adjustment block listed below.

MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	Q1	20	20	-	**5**
MECA0001-2	*Mechanics of materials* - JeanFrançois DEMONCEAU, Laurent DUCHENE - [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* - Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	**5**
GEOL0020-7	*Mineral resources* (english language) - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	**5**
GEOL0013-5	*Hydrogeology* - Serge BROUYÈRE - [1d FW, 10h Proj.]	Q1	24	20	[+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Bertrand FRANÇOIS - [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* - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	Q2	30	22	[+]	**5**