

Cycle view of the study programme

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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 (B1 : 30Cr, B2 : 35Cr)

CHIM9284-2	<i>Analytical chemistry I - Chemical analysis methods, Theory - Gauthier EPPE</i>	B1	Q1	26	-	-	2
CHIM0740-2	<i>Analytical chemistry II - Physicochemical techniques of analysis, Part A - Gauthier EPPE</i>	B1	Q2	10	30	-	3
	Corequisite : CHIM9284-2 - Chimie analytique I - Méthodes chimiques d'analyse						
GEOL0324-2	<i>Sedimentology - Theory - Hannes CLAES, AnneChristine DA SILVA</i>	B1	Q1	30	-	-	2
	<i>- Laboratory - Hannes CLAES, AnneChristine DA SILVA - [4h Labo.]</i>			-	-	[+]	
GEOL0284-1	<i>Geology of Wallonia - AnneChristine DA SILVA - [6d FW]</i>	B1	Q2	20	-	[+]	3
	Corequisite : GEOL0324-2 - Sédimentologie						
GEOL1051-1	<i>Geological imaging and remote sensing (english language) - Eric PIRARD - [30h Proj.]</i>	B1	Q2	26	26	[+]	5
GCIV0045-4	<i>Rock mechanics, tunnels, rock slopes, rock foundations - Bertrand FRANÇOIS - [1d FW, 50h Proj.]</i>	B1	Q2	20	4	[+]	5
	Corequisite : GCIV0603-2 - Géotechnique et infrastructures						
GEOL0097-2	<i>Geostatistics (english language) - Eric PIRARD - [30h Labo.]</i>	B1	Q1	30	-	[+]	5
GEOL0286-2	<i>Geological mapping - From theory to fieldwork - HansBalder HAVENITH - [2d FW]</i>	B1	Q2	5	20	[+]	5
	<i>- Project - HansBalder HAVENITH - [20h Proj.]</i>			-	-	[+]	
ATFE0011-1	<i>Master Thesis (including an introduction to research methodology) - Serge BROUYÈRE, COLLÉGIALITÉ - [600h Proj.]</i>	B2	TA	-	-	[+]	25
ASTG0017-1	<i>Internship - Stoyan GAYDARDZHIEV</i>	B2	TA	-	-	-	5
GEST3162-1	<i>Principles of management (english language) - Michaël PARMENTIER, Willem STANDAERT - [25h Proj.]</i>	B2	Q1	30	-	[+]	5

Common core courses (B1 : 10Cr, B2 : 15Cr)

Choose courses totalling 25 ECTS from the following : (B1 : 10Cr, B2 : 15Cr)

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

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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	<i>Linear numerical methods in Civil and Geological Engineering</i> - Laurent DUCHENE, Michel PIROTON - [30h Proj.]	-	Q1	22	30	[+]	5
GCIV0184-5	<i>Building Materials</i> - Luc COURARD, Anne HABRAKEN - [0,5d FW, 12h Labo., 12h Proj.]	-	Q2	36	16	[+]	5
GEOL0029-4	<i>Tectonics</i> - Part A - Olivier BOLLE - Field work - Olivier BOLLE - [2d FW]	-	Q1	30	20	-	5
				-	-	[+]	
MECA0526-1	<i>High Temperature Processes in Recycling & Remanufacturing</i> (english language) - Anne MERTENS - [1d FW]	-	Q1	26	26	[+]	5
CHIM0695-2	<i>Modelling of chemical & energy processes</i> (english language) - Grégoire LÉONARD	-	Q1	20	32	-	5
GEOL0021-7	<i>Geophysical prospecting</i> - Frédéric NGUYEN - [5d FW, 20h Proj.]	B1	Q2	26	20	[+]	5
GEOL0020-7	<i>Mineral resources</i> (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B1	Q1	26	-	[+]	5
GEOL0319-2	(pas organisé en 2025-2026) <i>Geological hazard and risk assessment</i> (english language) - From theory to field work - HansBalder HAVENITH - [2d FW, 20h Proj.] - Project - HansBalder HAVENITH - [20h Proj.]	B1	Q2				5
				20	5	[+]	
				-	-	[+]	
GEOL0013-5	<i>Hydrogeology</i> - Serge BROUYÈRE - [1d FW, 10h Proj.]	B1	Q1	24	20	[+]	5
GCIV0603-2	<i>Geotechnics and infrastructure</i> - Bertrand FRANÇOIS - [1d FW, 2h Labo.]	B1	Q2	26	26	[+]	5
GEOL0314-1	<i>Mineral processing I - basics</i> (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	B1	Q1	30	-	[+]	5
GEOL1026-1	<i>Complement of geology</i> - Part 1 : Elements of mineralogy - Frédéric HATERT - Part 2 : Elements of magmatic and metamorphic petrology - Jacqueline VANDER AUWERA	B1	Q2	18	18	-	5
				8	8	-	
GEOL0281-4	<i>Environmental impact of industrial and mining activities</i> - Stoyan GAYDARDZHIEV - [1d FW, 25h Labo., 5h Proj.]	B2	Q1	25	-	[+]	5
GEOL1045-1	<i>Economic and societal issues in mining and recycling</i> (english language) - Eric PIRARD - [30h Proj., 2d FW]	B2	Q1	15	-	[+]	5
GEOL1052-1	<i>Project in inverse modelling : from field to algorithms</i> (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 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	<i>District Energy Systems</i> (english language) - Pierre DEWALLEF - [8h Proj., 1d FW]	-	Q1	16	8	[+]	3
UEEN0008-1	<i>Urban water systems</i> (english language) - Benjamin DEWALS - [12h Proj.]	-	Q1	18	18	[+]	3
UEEN0002-1	<i>Land rehabilitation in urban environments</i> (english language) - Serge BROUYÈRE, Frédéric COLLIN - [10h Labo., 20h Proj., 2d FW]	-	Q1	20	10	[+]	5

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UEEN0004-1	<i>Urban planning and transportation</i> (english language) - Mario COOLS, Jacques TELLER - [1d FW]	-	Q1	26	26	[+]	5
UEEN0005-1	<i>Participatory Design at an Urban Scale</i> (english language) - Catherine ELSSEN - [20h Proj., 1d FW]	-	Q1	20	10	[+]	3
UEEN0006-1	<i>UEE Integrated Project</i> (english language) - Luc COURARD - [100h Proj., 1d FW]	-	Q1	-	90	[+]	6
GEOG2053-1	<i>Introduction to Urban GIS</i> - Roland BILLEN	-	Q1	20	20	-	3

Focus courses (B1 : 20Cr, B2 : 10Cr)

GEOL0289-1	<i>Analytic mineralogy</i> (english language) - Frédéric HATERT - [15h Labo.] Corequisite : GEOL0312-1 - Process mineralogy	B1	Q2	30	15	[+]	5
GEOL0315-1	<i>Solid Waste and by products processing</i> (english language) - Stoyan GAYDARDZHIEV - [20h Labo., 7h Proj., 1,5d FW]	B1	Q1	20	-	[+]	5
GEOL0237-2	<i>Exploitation of mineral deposits</i> (english language) - Nicolas VASBINDER - [2d FW] Corequisite : GEOL0020-7 - Mineral resources	B1	Q1	25	15	[+]	5
GEOL0312-1	<i>Process mineralogy</i> (english language) - Hassan BOUZAHAH, Eric PIRARD - [25h Labo., 15h Proj.]	B1	Q1	25	-	[+]	5
GEOL1043-1	<i>Extractive metallurgy</i> (english language) - Stoyan GAYDARDZHIEV - [1d FW] Corequisite : GEOL0314-1 - Mineral processing I - basics	B2	Q1	30	20	[+]	5
GEOL1044-1	<i>Raw Materials in a Circular Economy</i> (english language) - Thomas NERON, Eric PIRARD - [1d FW]	B2	Q1	26	26	[+]	5

Bridging courses Master in mining engineering and geology

Optional courses (B0 : 30Cr)

Each student's programme will be determined by the board based on their prior academic background. (B0 : 30Cr)

[...] 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	<i>Introduction to numerical analysis</i> (english language) - Quentin LOUVEAUX	B0	Q1	20	20	-	5
MECA0001-2	<i>Mechanics of materials</i> - JeanFrançois DEMONCEAU, Laurent DUCHENE - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	5
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTON - [25h Proj.]	B0	Q2	20	30	[+]	4
GEOL0021-7	<i>Geophysical prospecting</i> - Frédéric NGUYEN - [5d FW, 20h Proj.]	B0	Q2	26	20	[+]	5
GEOL0020-7	<i>Mineral resources</i> (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B0	Q1	26	-	[+]	5
GEOL0013-5	<i>Hydrogeology</i> - Serge BROUYÈRE - [1d FW, 10h Proj.]	B0	Q1	24	20	[+]	5
GCIV0603-2	<i>Geotechnics and infrastructure</i> - Bertrand FRANÇOIS - [1d FW, 2h Labo.]	B0	Q2	26	26	[+]	5
GEOL0314-1	<i>Mineral processing I - basics</i> (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	B0	Q1	30	-	[+]	5
GEOL0001-1	<i>Geology and Engineering geology</i> - Serge BROUYÈRE,	B0	Q2	30	22	[+]	5

Bridging courses Master in mining engineering and geology

Optional courses (B0 : 60Cr)

Each student's programme will be determined by the board based on their prior academic background. (B0 : 60Cr)

[...] 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	<i>Introduction to numerical analysis</i> (english language) - Quentin LOUVEAUX	B0	Q1	20	20	-	5
MECA0001-2	<i>Mechanics of materials</i> - JeanFrançois DEMONCEAU, Laurent DUCHENE - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	5
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTON - [25h Proj.]	B0	Q2	20	30	[+]	4
GEOL0021-7	<i>Geophysical prospecting</i> - Frédéric NGUYEN - [5d FW, 20h Proj.]	B0	Q2	26	20	[+]	5
GEOL0020-7	<i>Mineral resources</i> (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B0	Q1	26	-	[+]	5
GEOL0013-5	<i>Hydrogeology</i> - Serge BROUYÈRE - [1d FW, 10h Proj.]	B0	Q1	24	20	[+]	5
GCIV0603-2	<i>Geotechnics and infrastructure</i> - Bertrand FRANÇOIS - [1d FW, 2h Labo.]	B0	Q2	26	26	[+]	5
GEOL0314-1	<i>Mineral processing I - basics</i> (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	B0	Q1	30	-	[+]	5
GEOL0001-1	<i>Geology and Engineering geology</i> - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	B0	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	<i>Introduction to numerical analysis</i> (english language) - Quentin LOUVEAUX	B0	Q1	20	20	-	5
MECA0001-2	<i>Mechanics of materials</i> - JeanFrançois DEMONCEAU, Laurent DUCHENE - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	5
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTON - [25h Proj.]	B0	Q2	20	30	[+]	4
GEOL0001-1	<i>Geology and Engineering geology</i> - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	B0	Q2	30	22	[+]	5
GEOL0021-7	<i>Geophysical prospecting</i> - Frédéric NGUYEN - [5d FW, 20h Proj.]	B0	Q2	26	20	[+]	5
GEOL0020-7	<i>Mineral resources</i> (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B0	Q1	26	-	[+]	5
GEOL0013-5	<i>Hydrogeology</i> - Serge BROUYÈRE - [1d FW, 10h Proj.]	B0	Q1	24	20	[+]	5
GCIV0603-2	<i>Geotechnics and infrastructure</i> - Bertrand FRANÇOIS - [1d FW, 2h Labo.]	B0	Q2	26	26	[+]	5
GEOL0314-1	<i>Mineral processing I - basics</i> (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	B0	Q1	30	-	[+]	5

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

Optional courses (B0 : 15Cr)

The programme for the bachelor's degree in engineering sciences, bioengineering orientation, comprises 135 credits. (B0 : 15Cr)

[...] 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	<i>Introduction to numerical analysis</i> (english language) - Quentin LOUVEAUX	B0	Q1	20	20	-	5
MECA0001-2	<i>Mechanics of materials</i> - JeanFrançois DEMONCEAU, Laurent DUCHENE - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	5
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTON - [25h Proj.]	B0	Q2	20	30	[+]	4
GEOL0021-7	<i>Geophysical prospecting</i> - Frédéric NGUYEN - [5d FW, 20h Proj.]	B0	Q2	26	20	[+]	5
GEOL0020-7	<i>Mineral resources</i> (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B0	Q1	26	-	[+]	5
GEOL0013-5	<i>Hydrogeology</i> - Serge BROUYÈRE - [1d FW, 10h Proj.]	B0	Q1	24	20	[+]	5
GCIV0603-2	<i>Geotechnics and infrastructure</i> - Bertrand FRANÇOIS - [1d FW, 2h Labo.]	B0	Q2	26	26	[+]	5
GEOL0314-1	<i>Mineral processing I - basics</i> (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	B0	Q1	30	-	[+]	5
GEOL0001-1	<i>Geology and Engineering geology</i> - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	B0	Q2	30	22	[+]	5

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

Optional courses (B0 : 15Cr)

The programme for the bachelor's degree in engineering sciences, bioengineering orientation, comprises 135 credits. (B0 : 15Cr)

[...] 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	<i>Introduction to numerical analysis</i> (english language) - Quentin LOUVEAUX	B0	Q1	20	20	-	5
MECA0001-2	<i>Mechanics of materials</i> - JeanFrançois DEMONCEAU, Laurent DUCHENE - [2h Labo., 12h Proj.]	B0	Q1	27	25	[+]	5
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTON - [25h Proj.]	B0	Q2	20	30	[+]	4
GEOL0021-7	<i>Geophysical prospecting</i> - Frédéric NGUYEN - [5d FW, 20h Proj.]	B0	Q2	26	20	[+]	5
GEOL0020-7	<i>Mineral resources</i> (english language) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	B0	Q1	26	-	[+]	5
GEOL0013-5	<i>Hydrogeology</i> - Serge BROUYÈRE - [1d FW, 10h Proj.]	B0	Q1	24	20	[+]	5

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GCIV0603-2	<i>Geotechnics and infrastructure</i> - Bertrand FRANÇOIS - [1d FW, 2h Labo.]	B0	Q2	26	26	[+]	5
GEOLO314-1	<i>Mineral processing I - basics</i> (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	B0	Q1	30	-	[+]	5
GEOLO001-1	<i>Geology and Engineering geology</i> - Serge BROUYÈRE, Philippe ORBAN - [2d FW]	B0	Q2	30	22	[+]	5