

## Block view of the study programme

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### Block 1

The program of the first two terms is identical to the program of Block 1 of the Master's degree in Civil Mining Engineering and Geology :

- 30 compulsory course credits

- 30 elective credits: the elective courses will be chosen in agreement with the president of the jury who will ensure the coherence of the program. For Block 2, the focus started at ULiège will be completed at the Polytechnic University of Madrid.

### Compulsory courses from the core curriculum

CHIM9284-2	<i>Chimie analytique I - Méthodes chimiques d'analyse, Théorie</i> - Gauthier EPPE	Q1	26	-	-	2
CHIM0740-2	<i>Analytical chemistry II - Physicochemical techniques of analysis, Part A</i> - Gauthier EPPE	Q2	10	30	-	3
GEOL0324-2	<i>Sedimentology</i> - <i>Theory</i> - AnneChristine DA SILVA - <i>Laboratory</i> - AnneChristine DA SILVA - [4h Labo.]	Q1	30	-	-	2
GEOL0284-1	<i>Geology of Wallonia</i> - AnneChristine DA SILVA - [6d FW]	Q2	20	-	[+]	3
GEOL1051-1	<i>Geological imaging and remote sensing</i> (english language) - [30h Proj.]	Q2	26	26	[+]	5
GCIV0045-4	<i>Rock mechanics, tunnels, rock slopes, rock foundations</i> - Bertrand FRANÇOIS - [1d FW, 50h Proj.]	Q2	20	4	[+]	5
GEOL0097-2	<i>Geostatistics</i> (english language) - [30h Labo.]	Q1	30	-	[+]	5
GEOL0286-2	<i>Geological mapping</i> - <i>From theory to fieldwork</i> - HansBalder HAVENITH - [2d FW] - <i>Project</i> - HansBalder HAVENITH - [20h Proj.]	Q2	5	20	[+]	5
			-	-	[+]	

### Optional courses from the core curriculum

Choose 10 credits between:

#### Courses programme at University of Liège

GEOL0021-7	<i>Geophysical prospecting</i> - Frédéric NGUYEN - [5d FW, 20h Proj.]	Q2	26	20	[+]	5
GEOL0020-7	<i>Mineral resources</i> (english language) - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	5
GEOL0319-2	(pas organisé en 2026-2027) <i>Geological hazard and risk assessment</i> (english language) - <i>From theory to field work</i> - HansBalder HAVENITH - [2d FW, 20h Proj.] - <i>Project</i> - HansBalder HAVENITH - [20h Proj.]	Q2	20	5	[+]	5
			-	-	[+]	
GEOL0013-5	<i>Hydrogeology</i> - Serge BROUYÈRE - [1d FW, 10h Proj.]	Q1	24	20	[+]	5
GCIV0603-2	<i>Geotechnics and infrastructure</i> - Bertrand FRANÇOIS - [1d FW, 2h Labo.]	Q2	26	26	[+]	5
GEOL0314-1	<i>Mineral processing I - basics</i> (english language) - Stoyan GAYDARDZHIEV - [30h Labo., 10h Proj., 1,5d FW]	Q1	30	-	[+]	5
GEOL1026-1	<i>Complement of geology</i> - <i>Part 1 : Elements of mineralogy</i> - Frédéric HATERT - <i>Part 2 : Elements of magmatic and metamorphic petrology</i> - Jacqueline VANDER AUWERA	Q2	18	18	-	5
			8	8	-	
GCIV0185-7	<i>Linear numerical methods in Civil and Geological Engineering</i> - Laurent DUCHENE, Michel PIROTON - [30h Proj.]	Q1	22	30	[+]	5
GEOL0008-4	<i>Hydrocarbons and energy transition - Exploration, Energy context and exploration of hydrocarbons</i>	Q1	15	-	-	2
GEOL1050-1	<i>Hydrocarbons and the energy transition - Techniques for extracting hydrocarbons and reducing emissions</i>	Q1	15	-	-	3
GEOL0029-4	<i>Tectonics</i>	Q1				5

	- Part A - Olivier BOLLE	30	20	-	
	- Field work - Olivier BOLLE - [2d FW]	-	-	[+]	
MECA0526-1	High Temperature Processes in Recycling & Remanufacturing (english language) - Anne MERTENS - [1d FW]	Q1	26	26	[+] 5

or among the courses listed below related to the theme "Urban and Environmental Engineering"

UEEN0002-1	Land rehabilitation in urban environments (english language) - Serge BROUYÈRE, Frédéric COLLIN - [10h Labo., 20h Proj., 2d FW]	Q1	20	10	[+] 5
UEEN0003-1	Urban resilience (english language) - [60h Proj., 1d FW]	Q1	36	16	[+] 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 ELSÉN - [20h Proj., 1d FW]	Q1	20	10	[+] 2
UEEN0006-1	UEE Integrated Project (english language) - Luc COURARD - [100h Proj., 1d FW]	Q1	-	90	[+] 5
GEOG2053-1	Introduction to Urban GIS - Roland BILLEN	Q1	20	20	- 3

**Compulsory courses within the focus**

GEOL0083-3	Groundwater modelling (english language) - Serge BROUYÈRE, Philippe ORBAN - [24h Labo., 24h Proj.]	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 - [40h Proj., 1d FW]	Q2	18	15	[+] 5
GEOL0277-1	Groundwater quality and protection (english language) - Serge BROUYÈRE - [1d FW, 35h Proj.]	Q1	20	20	[+] 5

**Block 2**

**Optional courses from the core curriculum**

Choose the remaining credits in your specialty

[...] Research and Management of Mineral Resources Specialty or Research and Management of Mineral Resources Specialty

HULG9434-1	Recursos Hidrogeológicos (spanish language)	Q1	-	-	- 6
HULG9439-1	Economía de los Recursos Minerales (spanish language)	Q1	-	-	- 3
HULG9440-1	Mineralogía Avanzada (spanish language)	Q1	-	-	- 4,5
HULG9441-1	Técnicas de Investigación y Caracterización de Yacimientos Minerales (spanish language)	Q1	-	-	- 3
HULG9442-1	Exploración y Evaluación de Yacimientos Minerales (spanish language)	Q1	-	-	- 6
HULG9443-1	Yacimientos Minerales (spanish language)	Q1	-	-	- 6
HULG9444-1	Investigación y Gestión de Recursos Energéticos (spanish language)	Q1	-	-	- 3
HULG9445-1	Petrología y Modelización de Recursos Minerales (spanish language)	Q1	-	-	- 4,5

**Choose between third semester at Liège or Madrid:**

**Third semester at Université de Liège:**

ATFE0011-1	Master Thesis (including an introduction to research methodology) - Serge BROUYÈRE, COLLÉGIALITÉ - [600h Proj.]	TA	-	-	[+] 20
ASTG0017-1	Internship - Stoyan GAYDARDZHIEV	TA	-	-	- 5
GEST3162-1	Principles of management (english language) - Michaël PARMENTIER, Willem STANDAERT - [25h Proj.]	Q1	30	-	[+] 5

**Third semester at Universidad Politécnica de Madrid**

HULG9446-1	<i>Master Thesis</i> (spanish language)	-	-	-	<b>18</b>
HULG9447-1	<i>Internship</i> (spanish language)	-	-	-	<b>6</b>
HULG9448-1	<i>Elective courses</i> (spanish language)	-	-	-	<b>6</b>

**Optional courses within the focus**

Choose 10 credits from this list to complete your focus:

**Management of the Natural Environment Specialty**

HULG9434-1	<i>Recursos Hidrogeológicos</i> (spanish language)	Q1	-	-	-	<b>6</b>
HULG9435-1	<i>Riesgos Geológicos</i> (spanish language)	Q1	-	-	-	<b>6</b>
HULG9436-1	<i>Ingeniería de Costas y puertos</i> (spanish language)	Q1	-	-	-	<b>6</b>
HULG9437-1	<i>Hidráulica e Ingeniería Fluvial</i> (spanish language)	Q1	-	-	-	<b>6</b>
HULG9438-1	<i>Sismología e ingeniería Sísmica</i> (spanish language)	Q1	-	-	-	<b>6</b>