

#### 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 within the focus

GEOL0289-1	<i>Analytic mineralogy</i> (english language) - Frédéric HATERT - [15h Labo.]	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]	Q1	20	-	[+]	5
GEOL0237-2	<i>Exploitation of mineral deposits</i> (english language) - Nicolas VASBINDER - [2d FW]	Q1	25	15	[+]	5
GEOL0312-1	<i>Process mineralogy</i> (english language) - Hassan BOUZHAAH, Eric PIRARD - [25h Labo., 15h Proj.]	Q1	25	-	[+]	5

#### Compulsory courses from the core curriculum

CHIM9284-2	<i>Analytical chemistry I - Chemical analysis methods, Theory</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
GEOL0006-4	<i>Rocks and sedimentary processes (partie 1)</i> - [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) - Eric PIRARD - [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) - Eric PIRARD - [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) - Eric PIRARD - [1d FW, 26h Labo., 32h Proj.]	Q1	26	-	[+]	5
GEOL0319-2	(pas organisé en 2024-2025) <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> - <i>Part A</i> - [1d FW] - <i>Part B</i> - [10h Proj.]	Q1	26	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>	Q2				5

### Master MSc. in Geological and Mining Engineering focus in mineral resources and recycling (Co-diplomation avec l'Université polytechnique de Madrid)

- Part 1 : Elements of mineralogy - Frédéric HATERT 18 18 -

- Part 2 : Elements of magmatic and metamorphic petrology - 8 8 -

Jacqueline VANDER AUWERA

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> - Pierre CORNET	Q1	15	-	-	2
GEOL1050-1	<i>Hydrocarbons and the energy transition - Techniques for extracting hydrocarbons and reducing emissions</i> - Xavier LIMPENS	Q1	15	-	-	3
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 &amp; Remanufacturing</i> (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	<i>Land rehabilitation in urban environments</i> (english language) - Serge BROUYÈRE, Frédéric COLLIN - [10h Labo., 20h Proj., 2d FW]	Q1	20	10	[+]	5
UEEN0003-1	<i>Urban resilience</i> (english language) - Jacques TELLER - [60h Proj., 1d FW]	Q1	36	16	[+]	5
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 ELSÉN - [20h Proj., 1d FW]	Q1	20	10	[+]	2
UEEN0006-1	<i>UEE Integrated Project</i> (english language) - Luc COURARD - [100h Proj., 1d FW]	Q1	-	90	[+]	5
GEOG2053-1	<i>Introduction to Urban GIS</i> - Roland BILLEN	Q1	20	20	-	3

#### Block 2

#### Optional courses within the focus

Choose 10 credits from this list to complete your focus:

##### Research and Management of Mineral Resources Specialty

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

#### 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

HULG9439-1	<i>Economía de los Recursos Minerales</i> (spanish language)	Q1	-	-	-	3
HULG9440-1	<i>Mineralogía Avanzada</i> (spanish language)	Q1	-	-	-	4,5
HULG9441-1	<i>Técnicas de Investigación y Caracterización de Yacimientos Minerales</i> (spanish language)	Q1	-	-	-	3

### Master MSc. in Geological and Mining Engineering focus in mineral resources and recycling (Co-diplomation avec l'Université polytechnique de Madrid)

HULG9442-1	<i>Exploración y Evaluación de Yacimientos Minerales</i> (spanish language)	Q1	-	-	-	<b>6</b>
HULG9443-1	<i>Yacimientos Minerales</i> (spanish language)	Q1	-	-	-	<b>6</b>
HULG9444-1	<i>Investigación y Gestión de Recursos Energéticos</i> (spanish language)	Q1	-	-	-	<b>3</b>
HULG9445-1	<i>Petrología y Modelización de Recursos Minerales</i> (spanish language)	Q1	-	-	-	<b>4,5</b>

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

**Third semester at Université de Liège:**

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

**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>