

MASTER of science

Following training programmes
initiated by the CESMAT

in "MINERAL RAW MATERIALS, risk engineering and MANAGEMENT"



Nancy
VILLE PRÉFÉRÉE
DES ÉTUDIANTS*



Training offered by Mines Nancy and the Nancy Graduate School of Geology
Accredited by the French Ministry of Higher Education and Research



MASTER OF SCIENCE

in “Mineral Raw Materials, Risk Engineering and Management”

MESSAGE FROM THE DEANS

In the area of the management of mineral raw materials and risk engineering, there is a need for international experts. Considering this opportunity, “Mines Nancy” and “Ecole de Géologie” (ENSG) have decided to share their resources in order to develop a common strategy and to make the most of the expertise acquired over the last 37 years through CESEV and CESTEMIN. This marks a new step in the active and long-lasting partnership between our institutions.

This Master’s Degree is under the shared responsibility of the two Graduate Schools. The program includes lectures, tutorials and scientific projects, which benefit from a unique research environment in the field of Geosciences (GeoRessources Lab, CRPG) and a close connection with the University of Lorraine.

François ROUSSEAU, Director General
of Mines Nancy
Jean-Marc MONTEL, Director of the Nancy
School of Geology

CONTEXT

The current international context leads to train world scale experts, who will be able to face up to the new challenges of the mining industry and to be aware of the technical, environmental and human constraints involved. “Mines Nancy” and “Ecole de Géologie de Nancy” are major actors in this field owing to worldwide recognized skills in the areas of science, technology and academic training. Courses at both Schools draw on the “Centre of Petrographic and Geochemical Research in Nancy” and on the “GeoRessources research laboratory,” which is on the cutting edge of sustainable mining of mineral resources and a leader in the fields of risk prevention and crisis management.



Both Graduate Schools work in partnership with such public institutions as CNRS, BRGM, INERIS, ANDRA and companies specializing in Mines and Quarries.

OBJECTIVES OF THE COURSE

The course leads to a Professional Master’s Degree in Mines and Quarries. It covers the whole of the mineral mining cycle, from the exploration of deposits to the processing and recycling of mining waste, along with mining methods. Strong emphasis is placed on human risk prevention and environmental protection. The course includes visits of industrial sites and fieldwork.

CAREER OPPORTUNITIES

Students who graduate from the course will have worldwide job opportunities in the mining industry and related sectors: quarries, underground storage sites, geothermal energy and land use planning.

Training Program Overview

M1 1 st SEMESTER - S7 September - January	Language and science upgrading (common core curriculum)
M1 2 nd SEMESTER - S8 January - June	Scientific and technical skills applied to mining engineering and mineral industry
M2 1 st SEMESTER - S9 September - January	Core curriculum course in Risk Engineering and Management and in-depth thematic studies
M2 2 nd SEMESTER - S10 January - June	6-month industrial or research placement

PROGRAM

1ST YEAR - M1

M1
1ST SEMESTER - S7
September - January


The student workload of semester 7 amounts to 300 core curriculum hours covering 5 learning areas (UE) and giving 30 ECTS credits.

UE	COURSE TITLE	CLASS HOURS	ECTS
1	General Skills	110hrs	11
1.1	Languages		6
	- French (2hrs/week)*	30hrs	
	- English (2hrs/week)	30hrs	
1.2	Communication Skills	20hrs	2
1.3	Office Automation, Scientific and Technical Writing Skills	20hrs	2
1.4	Document Research and Monitoring	10hrs	1
2	Introductory Mining	190hrs	19
2.1	Geology / Computer Science applied to Geology	50hrs	5
2.2	Geochemistry / Water Chemistry	50hrs	5
2.3	Physical Chemistry of Surfaces	40hrs	4
2.4	Geomechanics	50hrs	5

M1
2ND SEMESTER - S8
January - June

The student workload of semester 8 amounts to 300 core curriculum hours giving 30 ECTS credits.

UE	COURSE TITLE	CLASS HOURS	ECTS
3	General Skills	60hrs	6
3.1	Languages		6
	- French (2hrs/week)*	30hrs	
	- English (2hrs/week)	30hrs	
4	Scientific Method	120hrs	12
4.1	Analytic Technique	40hrs	4
4.2	Statistical Methods	40hrs	4
4.3	Operational Research	40hrs	4
5	Mining Companies and their Environment	120hrs	12
5.1	Mining Economics and Geopolitics	20hrs	2
5.2	Financial Management	20hrs	2
5.3	Project Management	20hrs	2
5.4	Logistics	20hrs	2
5.5	Introduction to Quality, Health and Safety	20hrs	2
5.6	Human Resources Management	20hrs	2

 The two semesters will also include fieldwork and visits of industrial sites.

* for students already fluent in French, courses in another language or French Civilization courses are offered

2ND YEAR - M2

M2
1ST SEMESTER - S9
September - January

The program of this semester includes a core curriculum course in "Impact Evaluation and Risk Management" counting up to 150 class hours (15 ECTS) plus 3 electives selected from a list of 6 courses.

UE	COURSE TITLE	CLASS HOURS	ECTS
6	Impact Evaluation and Risk Management (core curriculum)	150hrs	15
6.1	Mining and Sustainable Development	50hrs	5
	- Sustainable Development		
	- Life Cycle Analysis and Impact Studies		
	- Management of Mining Waste		
	- Water Issues		
6.2	Risk Management	50hrs	5
	- Infrastructure and Environment		
	- Economic		
	- Financial		
	- Social		
	- Challenges and Management of Abandoned Mines		
6.3	Risk Engineering / Assessment / Analysis	50hrs	5
	- Methods		
	- Modeling		
	- Risk Assessment applied to Technical Infrastructure		

CE	Elective Modules (3 from 6)	150hrs	15
CE1	Reuse and recycling		
CE1.1	Mineral Processing	50hrs	5
CE1.2	Sizing, Material Balance, Modeling	50hrs	5
CE1.3	Extractive Metallurgy, Reuse and Recycling	50hrs	5

CE2	Mining Exploration and Mining Geology		
CE2.1	Formation and Geochemistry of Mineral Deposits	50hrs	5
	- Basic concepts		
	- Mineral Deposit Types		
	- Ore Geology and Industrial Minerals		
CE2.2	Tools for studying mineral deposits and exploring sites	50hrs	5
	- Analysis of Orogens and Geodynamics of Basins		
	- Geological Fluids		
	- Endogenous Processes		
	- Sedimentology and Diagenesis		
	- Remote Sensing		
	- Applied Geophysics		
CE2.3	Geomodeling, Resources, Deposits	50hrs	5

M2
2ND SEMESTRE - S10
January - June

The second semester is entirely spent doing an internship, writing the internship report and defending the report at the end of the semester. The 6-month internship takes place in a company or in a research laboratory.

PRACTICAL INFORMATION

Degree Title

Master's Degree accredited by the French Ministry of Higher Education and Research

Potential Applicants

International students with the following backgrounds may apply:

International students selected within the framework of agreements signed between Mines Nancy-ENSG and partner companies.

International students selected within the framework of agreements signed between Mines Nancy-ENSG and partner universities.

International students who submit direct applications.

Working professionals seeking to advance their careers by following a degree program with the agreement and support of their company.

Duration of the Course

From 1 to 2 years, depending on the admission requirements.

Admission

Admission to the first semester of M1 is open to holders of a Bachelor's Degree (180 ECTS credits or the equivalent) in the following subjects: Geology, Geosciences, Geomechanics, Mining Engineering, Extractive Metallurgy, Hydrogeology, Environmental Risk Sciences.

Admission to the second semester of M1 is open to students having earned 210 ECTS credits granted by their university.

Admission to the first semester of M2 is open to students having earned 240 ECTS credits granted by their university or by work experience (Work Experience Validation scheme).

Registration

Online registration:
www.mines-nancy.univ-lorraine.fr
--> «MS - Masters internationaux»

You have to fill in the application form and send it by e-mail to: mines-nancy-dfsc@univ-lorraine.fr or by mail (for the attention of the DFSC department).

Tuition Fees

- M1: 12,000 € / year
- M2: 8,000 € / year
- M1 + M2 : 20,000 € for two years

Please note that candidates may apply for scholarships through the French Ministry of Foreign Affairs or specific mobility grant schemes depending on their country of origin.

Language

Courses are taught in French.

Applicants must start learning French in their country with the aim of reaching B1 level before their arrival in Nancy. During summer, applicants will have the opportunity to follow intensive French courses provided by the CAFOL (French center for foreign and French students). They will upgrade their language skills before beginning the courses at Mines Nancy. A certificate of attendance is delivered at the end of the course.

Location

Classes are held in Nancy within the Campus of the "Ecole de Géologie" and "Mines Nancy"

Nancy is only 90 minutes away from Paris travelling by the high speed train (TGV Est). Nancy is high on the list of good places to live and study. This cultural metropolis offers great opportunities for studies and sports and provides a wide range of local services.



Candidate Selection

Selection is based on a review of the information filled in on the application form and on an interview with the admission jury.

MINES nancy

Mines Nancy trains engineers who will be able to become innovative leaders. Thanks to their intellectual and scientific competences, their creativity, their responsibility and ethical standards, they will, not only, be prone to understand the requirements of various professional contexts, but also be ready to manage businesses and organizations.

ENSG

ENSG is the leading French graduate school in the field of Geosciences. ENSG trains geological engineers endowed with naturalistic observation skills and mastering the physics and chemistry of Earth and Water.

UNIVERSITÉ DE LORRAINE

Both Graduate Schools are components of the "Université de Lorraine," a university which boasts 52,000 students, 3,700 lecturers and professors and 82 research laboratories. The "University of Lorraine" is one of the top 300 in the Shanghai ranking.

INSTITUT MINES-TÉLÉCOM

Created in March 2012, the "Institut Mines-Telecom" is one of the leading Higher Education and Research strengths in engineering in France with 12,000 students and 1,700 PhD students. Mines Nancy is a strategic partner of the Institute and the National School of Geology is one of the associated schools involved in this public institution.

CONTACT

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