



RawMaterials  
ACADEMY

EMerald

# Master in Resources Engineering

(Innovative Education in Geometallurgy and Circular Economy)

Awarded the EIT Label in 2016



This activity has received funding from the European Institute of Innovation and Technology (EIT), a body of the European Union, under the Horizon 2020, the EU Framework Programme for Research and Innovation

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Diploma	<p>The consortium will deliver a triple diploma (one from each university where the student attended lectures) and a Diploma Supplement from the coordinating university:</p> <ul style="list-style-type: none"> <li>– Ingénieur Civil des Mines et Géologue delivered by University of Liège (ULiège)</li> <li>– Master Sciences de la Terre et des Planètes Environnement delivered by University of Lorraine (UL)</li> <li>– Master of Science – Major: Geosciences delivered by Luleå University of Technology (LTU)</li> <li>– Master in Mechanical and Process Engineering delivered by Technische Universität Bergakademie Freiberg (TUBAF)</li> <li>– EIT Label Certificate</li> </ul>
Credits	120 ECTS, 24 months
Language of Instruction	English
Starts in	September
Requirements	<p>Eligible candidates must have a Bachelor degree in Engineering with basic knowledge in Geology or a Bachelor degree in Minerals Engineering, Mining Engineering, Chemical Engineering, Geological Engineering, Metallurgical Engineering or a Master degree in Geology.</p> <p>At least 22.5 ECTS in Mathematics at university level are required. Candidates must also demonstrate proficiency in the English language.</p>
Tuition fees	<p>EU students 2019: €4,500/year          Non-EU students 2019: €9,000/year          For up-to-date fee information, visit <a href="http://www.em-georesources.eu">www.em-georesources.eu</a></p>
Application Period	<p>1 October 2019 – 20 January 2020 for Erasmus Mundus scholarships          1 March 2020 – 30 April 2020 for non-EU self-funded students          1 March 2020 – 30 June 2020 for EU self-funded students</p>
Scholarships	<p>For students beginning in September 2020, EIT Label scholarships from EIT RawMaterials of €13,500 per eligible student are available. For information on how EIT Label scholarships will be awarded and who is eligible, please contact the coordinating university directly: <a href="mailto:emerald@uliege.be">emerald@uliege.be</a></p> <p>A number of Erasmus Mundus Joint Master Degree scholarships are available, covering full tuition fees and living expenses – visit <a href="http://www.em-georesources.eu">www.em-georesources.eu</a> for details.</p>

**“The EMerald master programme has given me an engineering perspective of the whole raw materials value chain. Being an EIT-Labelled programme, I’ve had opportunity to be part of several EIT RawMaterials-organised events which present extensive opportunities for networking and professional development.”**

Ali – Pakistan

## Participating Universities

**University of Liège**  
Belgium

**University of Lorraine, ENSG Nancy**  
France

**Luleå Institute of Technology**  
Sweden

**TU Bergakademie Freiberg**  
Germany

### Programme Structure

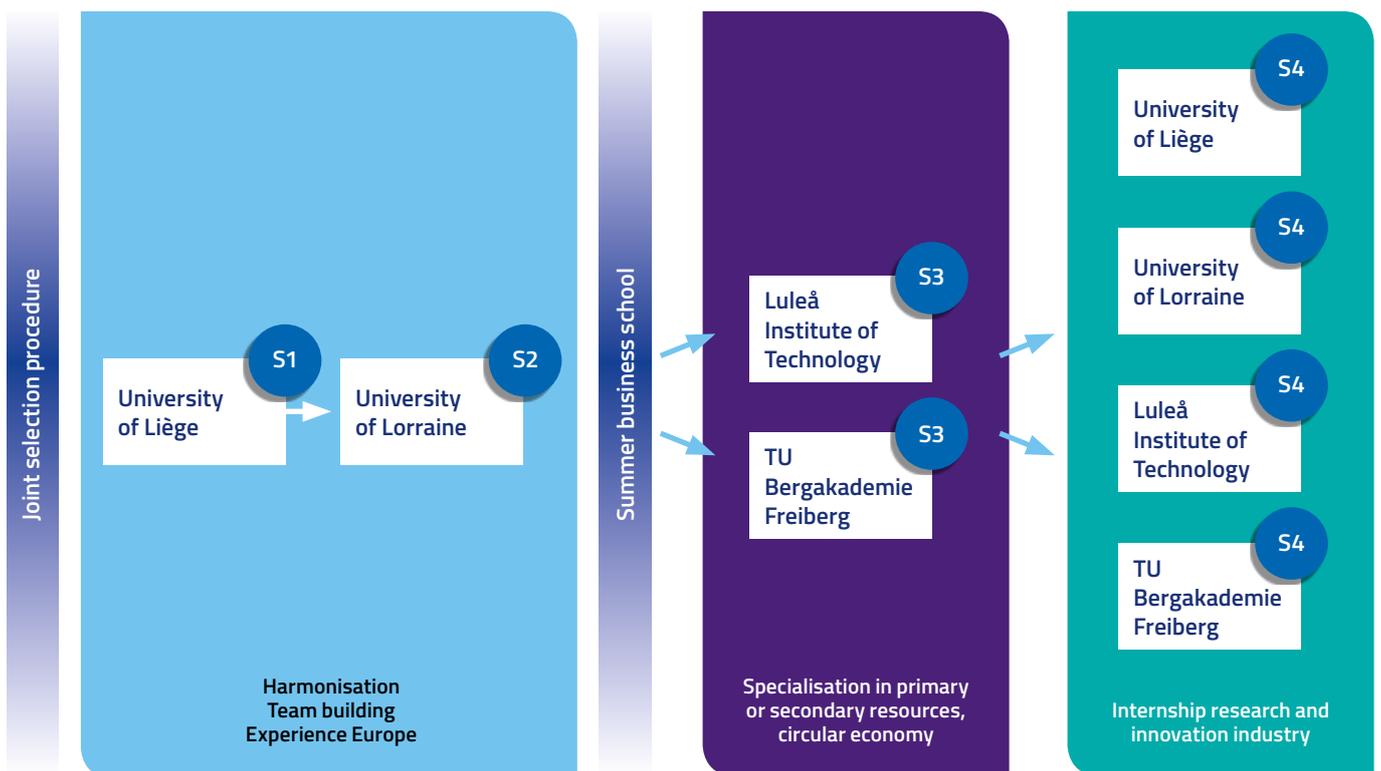
EMerald is organised into four semesters and accounts for 120 ECTS or 30 ECTS per semester.

The first year of the programme aims to harmonise students' knowledge and help them to find the right balance between resources characterisation and modelling, and processing and management techniques (multidisciplinarity). The thematic courses offered by the two universities (ULiège and UL) are complemented by a strong programme to develop transversal skills. Industry experts and invited scholars bring in key contributions on corporate social responsibility, economics, lifecycle analysis and other essential aspects of modern sustainable engineering operations.

All courses offer a blend of theoretical lectures and practical work in the labs. Students often work in groups on a real case study, finding out for themselves possible processing routes for complex ores and waste materials.

The third semester offers students the option to specialise more upstream at LTU (primary resources) or downstream at TUBAF (secondary resources). The final semester can be spent in any of the aforementioned institutions depending on the thesis specialisation. Regardless of the location, the Master thesis will be completed in close collaboration with an industrial partner or a research centre that will also host the students for an internship.

The full catalogue of courses is available on the EMerald website: [www.em-georesources.eu](http://www.em-georesources.eu)



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## Innovation and Entrepreneurship Training

As an EIT-Labelled programme, EMerald aims to graduate interdisciplinary engineers who possess not only a deep knowledge of georesources, but also a holistic view of the entire raw materials value chain and an entrepreneurial, creative mindset.

The EMerald programme:

- Provides you with the opportunity to gain insight into the industrial world and to raise your awareness and understanding of the whole raw materials value chain through professional seminars and technical visits
- Offers many courses targeted to facilitate the acquisition of entrepreneurial skills. You will learn how to work in teams and communicate your results to a broad public. In certain courses you will conduct real case studies from data integration to the estimation of resources, including economic aspects
- Integrates research dimensions with workshops and your Master thesis, as well as possibilities to attend international meetings (e.g. biennial meetings of the SGA), during which you can meet researchers and explore opportunities if you wish to pursue a career in the research field
- Receives support by leading companies who have an advisory role to the programme through a Strategic Advisory Board (SAB), which ensures that the courses of the programme meet their professional expectations

Between the first and the second year, the EMerald master organises a summer business school, a three week intensive course which will take place in Freiberg in August. As an EMerald student, you will get the opportunity to take solid management courses in finance, marketing, business modelling and operations management, providing you with key insights into how engineering solutions can be applied to, and taken up by, society and industry.

## Professional Profiles after Graduation

Are you a student who is:

- Interested in sparking innovation in the raw materials sector?
- Keen to become entrepreneurial and start your own company?
- Interested in bridging the gap between geology and metallurgy?
- Curious to acquire understanding of the whole raw materials value chain?
- Motivated to expand your professional network by studying at least three European universities?

The knowledge and skills EMerald graduates gain are highly valued in industry and beyond. Not only are EMerald graduates qualified to work in the fields of mining, building materials (cement, aggregates), non-ferrous metals production, circular economy of metals and mineral chemistry, possible career paths also include working for:

- Geological surveys
- Junior exploration companies
- Investment banks (resources sector)
- Venture capital (resources sector)
- EU Commission (raw materials and industry)
- National/regional governments (mining laws, implementing circular economy, mineral industry)
- EMerald also prepares you for further study (PhD) in mineral processing, geometallurgy, resources/reserves estimation, process development, mineral industry, etc.

**For more information:**  
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[www.em-georesources.eu](http://www.em-georesources.eu)

The EIT Label: Raising a new generation of entrepreneurs and innovators



EIT RawMaterials Academy is able to offer students a unique opportunity to learn in a dynamic environment, focusing on real-life challenges.

EIT RawMaterials is initiated and funded by the EIT (European Institute of Innovation and Technology), a body of the European Union. The EIT Label is a certificate of quality that is awarded only to excellent educational programmes at the Master and Doctoral level.

As a student of an EIT-Labelled programme, you'll be part of the largest European raw materials network – with more than 120 core and associate partners and 180 project partners from more than 20 European countries coming from higher education, research institutions and industry. As an EIT Label student, you will have the opportunity to become part of this committed partnership as well as champion and contribute to the EIT RawMaterials goals of finding new, innovative solutions to secure the sustainable supply of raw materials across the value chain – from exploration, mining and extraction, to mineral processing, recycling and moving towards a circular economy.

EIT RawMaterials aims to raise a new generation of innovators in Europe equipped with the necessary entrepreneurial mindset for designing and delivering solutions. You'll also get the chance to collaborate internationally, developing sustainable solutions to pressing economic, environmental and societal challenges.

Join an EIT-Labelled programme and become a global game-changer, obtaining the knowledge, skills and experience employers are seeking out in future graduates, and becoming part of the RawMaterials Academy Label student and Alumni community.

## Our EIT-Labelled programmes offer you



Thesis internship placements at leading European companies

The knowledge to become an expert in a particular raw materials discipline, coupled with an overview of the entire raw materials value chain

European mobility – study in at least two European countries

Innovative ‘learning-by-doing’, challenge-based courses which focus on real-life problems

Membership of the EIT Label Alumni Community

Courses designed to nurture start-up ideas at accelerators and incubators

Study tours and site visits to companies and industrial sites

New ways of learning – online courses, virtual and augmented reality and MOOCs

Course modules dedicated to entrepreneurship and innovation skills and competences

EIT RawMaterials Innovation support: business plan competitions, innovation bootcamps, seed funding

EIT RawMaterials summer schools and interdisciplinary courses

Labelled by



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2020 version I

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However, EIT RawMaterials GmbH accepts no liability for the correctness of the data contained in the EIT label brochure.



EIT RawMaterials is supported by the EIT,  
a body of the European Union