

SUMA

# Master in Sustainable Materials

Awarded the EIT Label in 2016



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Diploma	<p>Dual Master of Science degree awarded from two of the following universities:</p> <ul style="list-style-type: none"> <li>– KU Leuven</li> <li>– Montanuniversität Leoben</li> <li>– University of Trento</li> <li>– Grenoble INP</li> <li>– University of Milano-Bicocca</li> </ul> <p>EIT Label Certificate</p>
Credits	120 ECTS, 24 months
Language of Instruction	English
Starts in	September
Requirements	<p>Generally, all students should have: Bachelor of Science or Bachelor of Engineering (or equivalent), as well as proof of English language proficiency.</p> <p>Candidates must meet the admission criteria of the Master's Degree Programmes of both partner institutions of their chosen track. Please refer to the individual entry university websites for information on admission requirements.</p>
Fees	<p>Fees vary based on programme track and country of origin.</p> <p>Total fees for EEA students range from €77 to €5,500. Total fees for non-EEA students range from €600 to €12,000.</p> <p>Visit <a href="http://www.master-suma.eu">www.master-suma.eu</a> for details</p>
Application Period	<p>Application for the SUMA programme is a multi-step process. Applicants should register on the SUMA website: <a href="http://www.master-suma.eu">www.master-suma.eu</a></p> <p>For information on the registration/application deadlines for the entry universities, please check the following:</p> <p><b>KU Leuven</b> <a href="http://www.kuleuven.be/english/application/instructions">www.kuleuven.be/english/application/instructions</a></p> <p><b>Montanuniversität Leoben</b> <a href="http://starter.unileoben.ac.at/en/3489/">starter.unileoben.ac.at/en/3489/</a></p> <p><b>University of Trento</b> <a href="http://offertaformativa.unitn.it/en/Im/materials-and-production-engineering/applying">offertaformativa.unitn.it/en/Im/materials-and-production-engineering/applying</a></p> <p><b>University of Milano-Bicocca (UNIMIB)</b> <a href="http://www.unimib.it/unimib-international/bachelor-and-masters/how-enroll">www.unimib.it/unimib-international/bachelor-and-masters/how-enroll</a></p>
Scholarships	<p>For students beginning in September 2019, EIT-Label scholarships from EIT RawMaterials of up to €9,000 per student are available with additional financial support for student involvement in conferences, summer schools and other events. For information on how EIT-Label scholarships will be awarded and who is eligible, please contact the coordinating university directly: <a href="mailto:master-suma@kuleuven.be">master-suma@kuleuven.be</a></p>

## Participating Universities

**KU Leuven**  
Belgium

**Montanuniversität Leoben**  
Austria

**University of Trento**  
Italy

**Grenoble INP**  
France

**University of Milano-Bicocca**  
Italy

## The Challenge

Materials provide the foundation of the modern global economy. They are becoming increasingly relevant for the shift to a decarbonising society as they enable the transition to renewable energy, electric mobility and resource efficiency, among others. Nevertheless, many materials are becoming critical.

Therefore, we need to develop robust solutions and game-changing technologies that allow for a sustainable stream of materials.

## Sustainable Material Solutions with SUMA

The SUMA Master programme aims to train tomorrow's resource engineers in collaborative work in a global world, gathering together some of the best educational programmes in the field of sustainable materials engineering in Europe. The goal is to ensure young scientists obtain a solid background in chemistry and physics, with competences for designing and tailoring new material systems for specific functions, and with a specific view to the sustainability of processes and technologies in the field of material development. SUMA puts a particular strong focus on innovation, entrepreneurship and leadership and takes a holistic approach to the materials paradigm by exploring circular (eco) design, materials substitution, life cycle engineering and circular economy design, materials processing and recycling, manufacturing and innovation.

## Programme Structure

The Sustainable Materials (SUMA) Master programmes are two-year programmes embedded in the engineering programmes of the participating universities:

### KU Leuven

Master of Materials Engineering

### Montanuniversität Leoben

Master in Sustainable Materials

### University of Trento

Master in Materials and Production Engineering

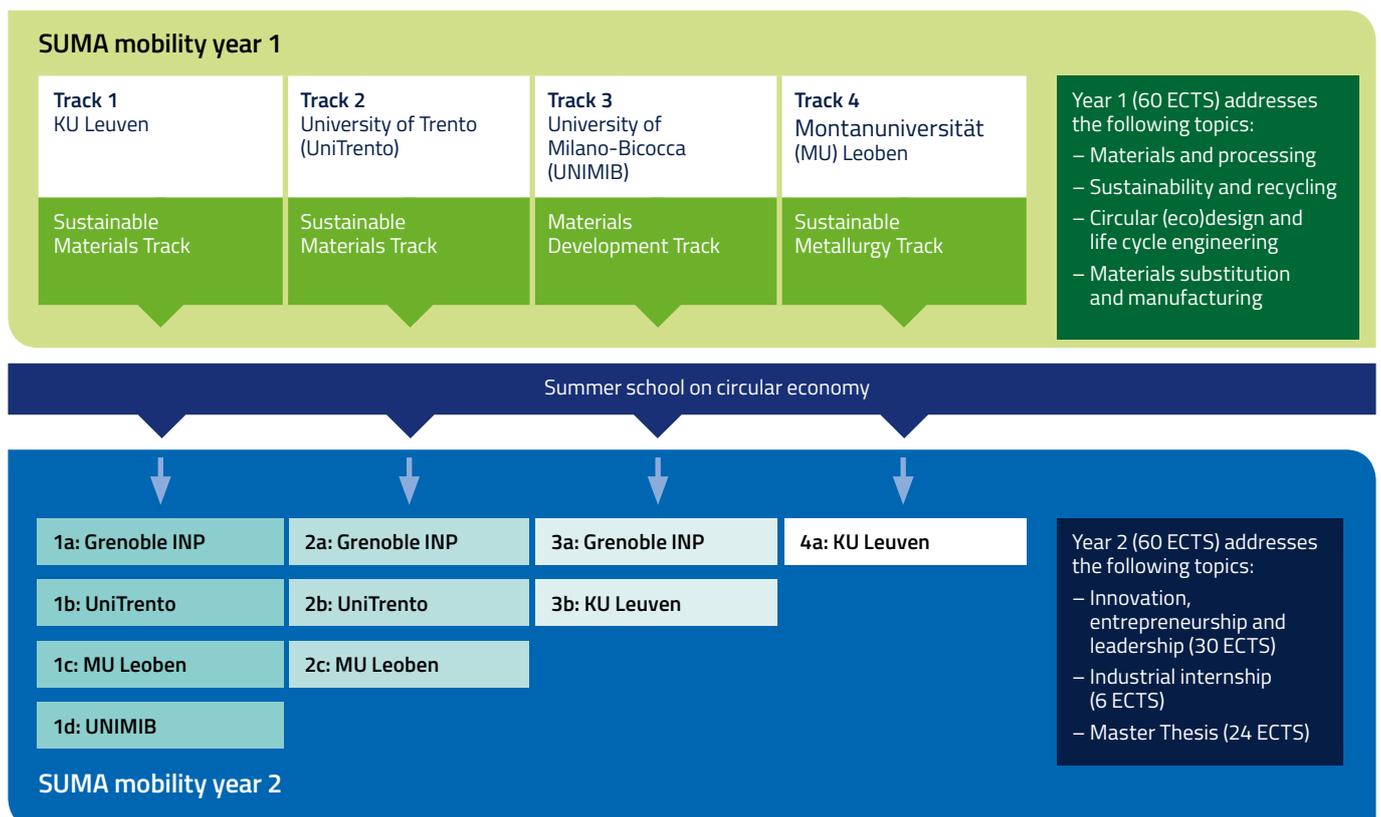
### Grenoble INP

Master in Sustainable Industrial Engineering

### University of Milano-Bicocca

Master in Materials Science

There are in total 10 tracks, each of which has been awarded the EIT Label. Each track of the SUMA programme consists of one full year at an entry university, followed by a second year at one of the other participating universities.



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## Innovation and Entrepreneurship Training

As an EIT-Labelled Master programme, SUMA recognises the importance of providing students with the opportunity to explore the economic relevance of sustainable materials solutions and how they are practically implemented in industrial and societal settings. SUMA students will be provided with innovation and entrepreneurship training addressing the following:

- Courses dealing with the implementation of an innovation strategy at a company level and the management of the product development process and strategic management, creativity and decision-making for product development
- Business simulation games
- Testimonies given by young entrepreneurs on the role of engineering in the start-up of technological spin-off companies
- Case studies presented by industrial and company experts in the field
- Small group and individual project work addressing real world problems

## One-week Summer School

Every year the SUMA Master programmes organise a summer school where all students from the different tracks come together to learn from leading experts on a particular sustainable materials topic. During the summer school, students will work together in teams on societal and technological challenges, using the knowledge and lecture content from the expert summer school faculty. The 2017 edition took place in Leuven and discussed the topic of 'Digitising the Circular Economy', where students learned how Internet of Things (IoT), big data analysis and Industry 4.0 principles can be applied to sustainable materials processing and recycling. The 2018 SUMA summer school enabled students to master methods of multi-criteria assessment and to develop innovations from lab to business projects and commercialisation.

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**“What I most appreciated about the programme was the chance to do a six-month internship in another country. The fact that the company where I undertook my internship subsequently offered me a position really showed me the value of that.”**

Denis – Belgium

## Professional Profiles after Graduation

Are you a student who is:

- Interested in earth sciences, mining, materials sciences and engineering?
- Motivated to explore the connection between materials technology and its environmental and socio-economic factors?
- Keen to become entrepreneurial and start your own company?
- Motivated to work closely with industry and research on cutting-edge challenges?

The SUMA Master programme aims at training scientists with a solid background in chemistry and physics, with competences for designing and tailoring new material systems for specific functions, and with a specific view to the sustainability of processes and technologies in the field of material development.

The main job opportunities are in industries and research centres in Europe, working on the development and production of functional materials for advanced applications and high technology.

Graduates can start a career as highly valued future leaders in positions of responsibility in managing advanced material design, production processes and material qualifying protocols in high-tech firms, material diagnostics and analysis in industries and research centres, and material development projects and scientific research projects in the field of material science and technology innovation.

### For more information:

Department of Materials Engineering –  
 KU Leuven  
 Kasteelpark Arenberg 44/2450  
 3000 Leuven  
 Belgium

SUMA Project Manager:  
 Katarzyna Janusz  
 T: +32-16377876  
 E: master-suma@kuleuven.be

[www.master-suma.eu](http://www.master-suma.eu)

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



EIT RawMaterials 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 RawMaterials Labelled programme, you'll be part of the largest European raw materials partnership – with more than 120 core and associate partners and 180 project partners from over 22 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 objective 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 developing circular economy strategies.

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 to develop creative and sustainable solutions to pressing resource and societal challenges.

In short, it's a great opportunity to become a global game-changer, obtain the knowledge, skills and experience employers are seeking out in future graduates, and become part of the RawMaterials Academy Label student community.

# EIT RawMaterials 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

EIT RawMaterials GmbH  
Europa Center  
Tauentzienstr. 11  
10789 Berlin, Germany  
rawmaterialsacademy.eu

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W: master-suma.eu  
E: master-suma@kuleuven.be

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a body of the European Union