SUSTAINABLE PROCESSING

Raw materials are distributed very unevenly throughout the world and the extraction of new raw materials is both cost-intensive and energy-intensive. Because of the increasing need for raw materials in our consumption-oriented society, new solutions have to be found and created. This is where recycling technology comes in. Products like televisions, washing machines and cars have just simply been dumped at the end of their life span for far too long now. They are, in fact, real treasure troves for raw materials!

Often, you can find common materials like steel, copper or plastics in them. But there are also precious metals or rare-earth elements that are desperately needed, especially in the high-tech-industry. In the concept of Urban Mining, waste is seen as a valuable supply for raw materials. For example, metals can be recycled out of buildings, urban infrastructure and different products.

Even during the design process for a product, engineers are thinking about what should be done with it after its use. Ideally, no waste has to be dumped anywhere because all of the components of the product are to be fully recycled. This way, engineers save costs and energy, protect the environment and contribute to the protection of our climate.

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Join Montanuniversität Leoben and find more information on admission at the Study Support Center.

MONTAN UNIVERSITÄT LEOBEN

SUSTAINABLE PROCESSING

RECYCLING

MONTAN UNIVERSITÄT LEOBEN

BACHELOR'S & MASTER'S STUDIES

RECYCLING

BACHELOR'S PROGRAMME

Along the value cycle you will learn all the concepts of recycling technology, starting from the development, construction, materials engineering, production, moving to the collection, raw materials engineering, processing, utilisation in terms of materials and energy, up to the legal framework. Knowledge in economics, law, metallurgy and materials and process engineering complement your interdisciplinary study programme.

CURRICULUM BACHELOR'S PROGRAMME

7 Semester (210 ECTS)

The first two semesters, in which scientific and engineering fundamentals are taught, are fairly similar for all degree programmes. Starting in the third semester, bachelor's students will be taught profound knowledge that enables them to enter the professional field. A mandatory internship in related industry, as well as the writing of a bachelor's thesis, constitute the requirements for academic degree Bachelor of Science (BSc).

Please note that the main language of instruction for this bachelor's programme is German. At the time of applying, you will have to submit proof of German language proficiency level A2 not older than 2 years, according to the Common European Framework of Reference for Language (CEFR).

Start of Programme and Orientation Phase	Key Skills for Engineers
- Transferable Skills - Introduction to STEM	- Chemistry - Mathematics - Physics - Technical Mathematics
Digital Competences and Statistics	Introduction to Study Programme
- Introduction to Data Modeling - Algorithms and Programming - Statistics	- Bacc Fundamentals - Fundamentals of Geosciences - Courses from the Elective Catalogue
Mandatory Courses for the Third to Seventh Semester	
- Physical Chemistry - Organic Chemistry - Analytical Chemistry - Corrosion - Machine Elements - Machine Drawing - Electrical Engineering - Mechanical Process Technology - Heat Engineering - Basics of Plastics Technology - Metals Science - Basics of Recycling Technology - Sustainability in Recycling Technology	- Environmental Systems Water/Soil/Air - Basic Principles of Waste Technology and Waste Management - Environment and Plant Law - Processing Secondary Energy Raw Materials - Ferrous Metallurgy - Basics in Processing Technology - Recycling of Plastics - Processes and Plants in the Minerals Industry - Extractive Metallurgy and Recycling of Nonferrous Metals - Free Electives - Course Bachelor's Thesis

You can find a list of detailed curricula from all the study programmes available at Montanuniversität Leoben at unileoben.ac.at.

MASTERS' PROGRAMMES

In addition to deepening the knowledge you gained during your bachelor's programme, you will also learn about the following specialised fields:

- Sustainability Management
- Waste and Disposal Logistics
- Simulation of Recycling Processes
- Material and Quantity Balancing
- Production of Metals and Plastics (by primary and secondary routes)
- Heat Engineering

Essential topics for this master's programme include landfill and urban mining, disposal logistics, processing technology for secondary raw materials, metal and plastics recycling and recycling-friendly product design. You can choose your specialisation area from these topics according to your interests.

FIELDS OF WORK

As a Leoben recycling engineer you gain a thorough knowledge of natural sciences, technology, ecology and law which enables you to solve complex recycling tasks for the future.

Our interconnected and interdisciplinary education opens the way for a promising and diverse career. Whether in innovative product design, in waste management, in the metal and raw materials industries, in the development of revolutionary recycling concepts, in research and development or as a leader: Your job possibilities are vast.

Through your professional activities, you can fight the consequences of our throw-away society and actively promote the zero-waste movement. Some people see only waste, but you see a sustainable way to recycle individual materials.