

MMT

MASTER METALLIC MATERIALS TECHNOLOGY

a cooperation of
TU Bergakademie Freiberg (University of Resources)
DCG Halle gGmbH – International Institute –



TECHNISCHE UNIVERSITÄT
BERGAKADEMIE FREIBERG

The University of Resources. Since 1765.

DCG
Halle gGmbH
INTERNATIONAL INSTITUTE

STUDENT INFORMATION



study

The TU Bergakademie Freiberg offers innovative elite research and teaching facilities in the four core fields of Geo, Material, Energy and Environment.

WHY WOULD YOU JOIN A COOPERATIVE STUDY PROGRAMME WITH THE TU BERGAKADEMIE FREIBERG?

Being a University of Resources, the TU Bergakademie Freiberg focuses comprehensively on securing the supply of natural resources along the entire added value chain. It covers the spectrum from the exploration for new deposits, the low impact, environmentally sound extraction of the raw materials as well as the development of alternative energy technologies and efficient materials right up to the recycling process. The basic idea of sustainable development remains at the forefront at all times. The TU Bergakademie Freiberg thus provides society with the basis for an environmentally compatible supply of resources, which are essential for universal economic growth.

Researchers in Freiberg use cooperative relationships with industry representatives on the regional and national level as well as with international businesses to carry out fundamental research activities that have practical relevance. For years, the professors of the TU Bergakademie Freiberg have ranked among the absolute elite in Germany in terms of third party funds.

The focus on a sustainable material and energy economy in research and education along with the four core fields Geo, Material, Energy and Environment give the university its very distinct resource profile.

History

The Bergakademie takes its claim of actively meeting society's ongoing challenges as seriously today as it did upon its founding approximately 250 years ago. It was at this University of Resources that Ferdinand Reich and Theodor Richter discovered the element Indium and Clemens Winkler found the element Germanium in Freiberg's ore deposits.

Abraham Werner established the scientific study of mineralogy and geology. Also in Freiberg, Wilhelm Lampadius developed the principle of gas lighting for the European continent.

Facts and Figures

The TU Bergakademie has 4.000 Students, 6 Faculties, 95 Professors and 2 Collaborative Research Centers.

The TU Bergakademie has six faculties

Faculty of Mathematics and Computer Science (Faculty 1)

Faculty of Chemistry and Physics (Faculty 2)

Faculty of Geosciences, Geoengineering and Mining (Faculty 3)

Faculty of Mechanical, Process and Energy Engineering (Faculty 4)

Faculty of Materials Science and Technology (Faculty 5)

Faculty of Business Administration (Faculty 6)

Internationally Renowned Collections for Research and Teaching

The nearly 40 scientific collections of the TU Bergakademie Freiberg represent not only a vital component for research and teaching, but also a unique attraction for visitors. In the form of a donation in 2004, the university received one of the largest and most outstanding private collections of minerals to add to its Mineralogical Collection.



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1 TU Bergakademie Freiberg Campus
2 Students at the University

2





WHY WOULD YOU BE INTERESTED IN STUDYING A MASTER IN METALLIC MATERIALS TECHNOLOGY?

Our modern world cannot be imagined without foundry products. Many products of our daily life are casted or contain castings. An important advantage of foundry technology is that almost all metallic materials can be processed. Many innovations contributed to the development of a modern industry with the profession of the foundry engineer. Cutting edge environmentally oriented production facilities, automatic processes and computer based component development are characteristic.

Being a foundry engineer means to handle metallic materials in liquid or fluid state, to work with constructors in the area of Simultaneous Engineering, to master resource conserving manufacturing technologies and to lead employees. Due to the variety of subject areas in the foundry industry teamwork is highly required.

Metal casting near in net shape casting components is the shortest way from the raw material to the work piece. Optimal designs are formed with the support of computer based simulation of casting techniques, through CAD/CAM in model making and mold construction as well as secure process control. The focus points of foundry production are in the automotive and mechanical engineering business. The quality of the casting products is of highest importance. They are high quality and crucial functional parts which determine the life cycle and reliability of vehicles and machines. The demand to save energy requires lightweight construction. Today, state of the art solid materials and thin walled castings ensure this.

What kind of career does the Master Metallic Materials Technology prepare you for?

Students receive a national and international accepted master's degree, which is highly noted for future employers in the industry.

The German foundry industry is supplier for the mechanical engineering and vehicle manufacturing, for architecture and construction industry, rail industry, shipbuilding industry, energy technology, electronic engineering, aerospace industry, healthcare sector and art. In Germany alone 800 mostly medium sized companies with more than 80.000 employees are working within the foundry industry.

The whole casting production counts for approximately six million tons per year, whereof 25 % go into export. Per year nearly 100 foundry engineers are hired, especially in the areas of:

- Material development
- Product development
- Process development
- Operations management
- Simulation of casting specific processes
- Quality Management

BENEFITS

INDIVIDUALIZED STUDY ENVIRONMENT, STUDYING IN SMALL GROUPS

HIGHLY PRACTICE ORIENTED PROGRAMMES – RESEARCH INTENSIVE

ACTIVE CAMPUS LIFE, ALL FACILITIES WITHIN EASY REACH

DOCTORAL STUDIES MAY BE GRANTED

STATE OF THE ART FACILITIES, NEW LABORATORIES AND STUDIOS

WHO SHOULD APPLY TO THE MASTER METALLIC MATERIALS TECHNOLOGY PROGRAMME AT TU BERGAKADEMIE FREIBERG, GERMANY?

What admission requirements do I need to fulfill?

- Academic degree (Bachelor)
- Motivation, aptitude interview if needed
- Professional interview in English with representatives of TU Bergakademie Freiberg between March and April (required for APS)

Do I need to prove my language proficiency in German?

Please note, in Germany, the Foundry Technology master's programme is taught entirely in English, German language is NOT required, however German language courses will be offered.

Do I have to prove my English proficiency?

Yes, you need to prove your proficiency in English. The Metallic Materials Technology programme refers to the Internet based TOEFL in general. However there is a various number of adequate language tests. It is important that the results out of these tests are equivalent to the scores given here. The following scores refer to 79/79 points TOEFL iBT:

- TOEFL iBT, 79 internet based
- TOEFL pBT, 550 paper based
- TOEFL cBT, 213 computer based
- IELTS, 6.0

HOW IS THE PROGRAMME STRUCTURED?

The programme is designed after the concept "From construction to the casted component".

In a practice oriented programme graduates can have a seamless transition into their career in the fields of foundry industry, mechanical engineering, supplier industry, Research and University institutions.

This discipline specific programme builds on the required knowledge acquired in mathematical scientific and engineering education that will be complemented with business and ecological aspects. Up to date highly productive casting processes and materials are in focus of this programme.

The programme is oriented on the modern development of foundry technology and examines for example aspects of process design, quality control and special moulding processes. Students also have the opportunity to choose from modules of the TU Bergakademie Freiberg for the part of optional modules.

The programme has a 3-semester duration and provides 90 Credits.

Core Programme modules are

Fracture mechanics

Non-destructive casting inspection

Basics of microstructure analysis

Moulding process

Experimentell student research project

Automation systems

Moulding process design

Elective modules

Master Thesis

Which modules are done at TU Bergakademie Freiberg and which ones at the partner university?

This depends on the capacity of the partner university and has to be defined individually.

Will TU Bergakademie Freiberg come to teach at the partner university?

This is not planned but may be possible in block seminars. Here, individual agreements can be done.



live



A small city that offers all amenities for good student life.

WHAT IS LIFE IN FREIBERG LIKE?

Freiberg was founded more than 850 years ago. It went through turbulent development due to its fast development of the mining industry.

Also trade had an increasing importance for Freiberg and it became the economic centre for the margravate Meißen in the Middle Ages. Freibergs mining industry went through four main episodes of upturn from the 14th century until the middle of the 20th century.

The TU Bergakademie Freiberg has been founded 1765 and represents major event in the city's history. It was one of the first universities for mining and earth sciences and helping the city

to gain international reputation.

The mining industry has been the basis for the development of huge economic, scientific and cultural variety. The cultural landscape of Freiberg is both traditional and modern. Freiberg offers leisure and sport facilities, museums and parks and biking ways.

Although a relatively small city with only 40.000 inhabitants, Freiberg offers a lot of amenities for its inhabitants. In the city, people can do almost all errands by foot but also with the car, bus or bike. Freiberg is a green city with lots of parks, clean and clear air and during the night you can see the many stars in the night sky.

Interesting cities to visit

Dresden (38 km)

Prague (149 km)

Berlin (236 km)

Frankfurt (440 km)

Munich (435 km)

Hamburg (486km)

Events in Freiberg

Mountain Town Festival (June)

Freiberg Summer Nights – different Festivals, Concerts & Open Air Cinema in the Castle

Freiberg Night Shift – Festivals in Bars (September)

Silbermann Days – Classical Concerts (September)

Christmas Market (December)

ENSURING
PEACE OF MIND FOR
OUR PARTICIPANTS

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support

By solving all the administrative tasks for students, DCG ensures that students can fully concentrate on their studies in beautiful Freiberg.

ADMINISTRATIVE INFORMATION

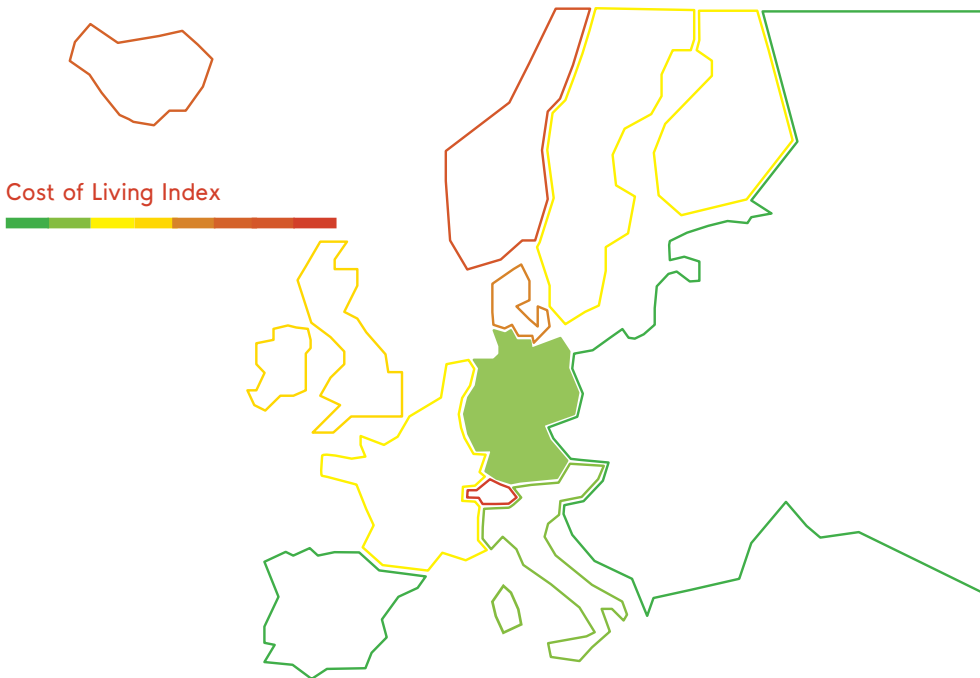
What do I need to do to get my Visa?

The German partner of the cooperation, the DCG Halle gGmbH, is giving a big support in the whole Visa application process for the programme students. Programme students participate in the APS group processing and only need to go personally to the German Embassy for giving their finger prints. What students need to do is an interview in English at the partner university with a representative from the TU Freiberg

to prove their academic ability for the course. All payments (tuition and cost of living) have to be done prior to Visa application.

Who is supporting me in Germany when I have problems not related to academic issues?

DCG Halle gGmbH is supporting in all administrative issues when students are in Germany.



WHAT COST ARE INVOLVED FOR ME?

Cost of living in Germany

When students come to Germany, they have to show their financial ability for studying in Germany. For this, they have to show to the German authorities that they possess 11.208 € (actually from 2023) for their cost of living (one year) before DCG handles their Visa application process. The amount is coupled to the German BAföG (study support regulation) defined by the Ministry for Education and Science.

DCG handles all the administrative tasks, listed below, for students coming to Germany.

From the yearly costs of living you have to finance

1. Fees and costs for entry and stay, registration formalities, Visa application, permit of residence, bank accounts, insurance certificates

2. Fees and costs for accommodation (student hostel, living community), rent from October–September (including advanced payment for heating, water, electricity etc.), internet access, equipment of the apartment

3. Security deposit for safety bond to the foreigner registration office, rental bond (repayment after finalization of the stay resp. rental contract)

4. Charges and dues
University semester fee

For our programme students we can offer better deals (1.+2.) that include better services and lower fees. Remaining balance is their monthly "pocket money" divided by 12 month.

Study service fee

→ Please ask your university for the study service fee involved for this programme.

HOW EXPENSIVE IS STUDYING IN GERMANY?

Cost of living

Compared to other Western European countries Germany has a relatively low Cost of Living Index (65.54) and is placed on rank 16.

Related to the reunification of Germany more than 25 years ago, there is an additional difference between the Western and Eastern part of Germany.

In the average the living cost in East Germany are around 20 % lower as in West Germany, especially in big cities, i.e. a student in Munich must pay between 400–500 € for a single room in a community, our program students who study at the DCG partner university in Freiberg pay for the same around 230–250 €.

Studying on a German campus is even cheaper.

Example for campus prices:

A meal at the campus Mensa costs 2,00–4,00 €

0.5l of beer in a club costs 3,50 €

1kg of bread is available for 2,00 €

Studying a Master in English language in Germany is very cheap related to the fees and living costs in U.K or other West European countries.

Will I live on my own or do I have to share my room?

Most students live in a shared apartment. They have their own room but share bathroom and kitchen.

Studying in Germany is, "free of charge", why do we have to pay tuition fee?

The MMT programme is a partner programme between the TU Bergakademie and your university.

The TU Bergakademie is providing additional capacities next to its normal teaching agenda. The classes are designed to meet the special requirements of foreign students of the partner programmes who got a study place to continue their study at the TU Bergakademie.

Furthermore, students receive individual guidance during their studies and professional assistance for bureaucratic procedures (visa, insurances, accommodation) during their stay in Germany.

Students can always apply at any German university directly.

However, places for foreign students are limited and a place is given at availability and often bound to a "numerus clausus".

Students also have to apply for their Visa themselves and have to do their interviews for proof of English proficiency at the German Embassy in their county.

Furthermore students would have to take care for health insurance, flat, registration at different German authorities, bank accounts on their own.

Even though students pay fees, the program is set up to save time and money for them compared to the conventional ways, as they get into a paid job faster than their peers in conventional programs.

Are students allowed to work in Germany while they study?

Work is permitted in the time of the university study, but opportunities for foreign students are restricted. You would only be allowed to do a very limited number of hours per week. In total foreign students can work during their study 180 half days per year.





DCG IS A NON-PROFIT ASSOCIATION

OUR GOAL IS TO SUPPORT THE
UNDERSTANDING AMONG NATIONS
BY FOSTERING AND ORGANIZING
EDUCATIONAL PROJECTS

IN 23 YEARS OF
ORGANIZATIONAL ACTIVITIES

WE HELPED MORE THAN 4.000
PARTICIPANTS IN OUR PROGRAMMES



1 Metal Workshop

**STILL HAVE OTHER QUESTION?
PLEASE FEEL FREE TO CONTACT US!**

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