Table of Contents

Master's degree ................................................................................................................................................. 2

Technology and Application of Inorganic Engineering Materials • TU Bergakademie Freiberg • Freiberg ................................................................................................................................................... 2
# Master's degree

**Technology and Application of Inorganic Engineering Materials**

TU Bergakademie Freiberg • Freiberg

## Overview

<table>
<thead>
<tr>
<th><strong>Degree</strong></th>
<th>Master of Science (MSc)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course location</strong></td>
<td>Freiberg</td>
</tr>
<tr>
<td><strong>Teaching language</strong></td>
<td>English</td>
</tr>
<tr>
<td><strong>Languages</strong></td>
<td>Courses are given in English.</td>
</tr>
<tr>
<td><strong>Programme duration</strong></td>
<td>4 semesters</td>
</tr>
<tr>
<td><strong>Beginning</strong></td>
<td>Winter semester</td>
</tr>
<tr>
<td><strong>Application deadline</strong></td>
<td>If a visa is required, the deadline is 15 April. If a visa is not required, the deadline is 15 July.</td>
</tr>
<tr>
<td><strong>Tuition fees per semester in EUR</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Combined Master’s degree / PhD programme</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Joint degree / double degree programme</strong></td>
<td>No</td>
</tr>
</tbody>
</table>

## Description/content

The inorganic engineering materials such as steel and ceramics cover all the strategic industries and are key materials for transport section, energy technology, machine and plant construction, building industry. The true understanding of mechanical, thermal, chemical, and functional properties at nano-, micro-, and macro-levels followed by the chemical and physical interactions at interfaces/surfaces of the inorganic engineering materials is an unlimited tool for their continuous development and technology optimisation.

## Course objectives

TAIEM graduates will be able to:

- solve general and specific problems in the steel and ceramic producing industries
- select suitable steel and ceramic for a specific application
- evaluate properties of steels and ceramics on several scales and estimate their behaviour under real industrial conditions
- detect and solve problems relating to the technology and applications of steels and ceramics
- manage a technology-oriented research project
Job opportunities

Fields of work include the following:

- Iron and steel-making industry
- Metal processing industry
- Ceramic and refractory industry
- Recycling and extractive industry
- Universities and research institutions

Course Details

Course organisation

The programme starts with a core curriculum on metallic, ceramic and refractory materials, thermodynamics, and heat and mass transfer. Thereby, the aim is to bring all students to the same level of knowledge, which will be strongly built upon in the lectures of the following semester. During second and third semesters, the students learn to apply the theoretical knowledge to real applications via laboratory and practical courses. A research seminar and a "Journal Club" enable the students to share their insights and grasp the current developments in the field of material technology. Additionally, students will learn or improve their German language skills by attending organised language courses for two semesters. This will help them to explore and understand the culture of Germany. Furthermore, the students will have to select one of two blocks of elective modules: "Advanced Engineering Background" or "Technology Background". The modules from these blocks cover emerging topics, such as thermodynamical simulation, simulation of metallurgical processes, trainings in particle technology and fluid dynamics, economics, and business administration. The fourth semester is designated for the Master's thesis.

PDF Download

A Diploma supplement will be issued: Yes

Course-specific, integrated German language courses: No

Course-specific, integrated English language courses: No

Costs / Funding

Tuition fees per semester in EUR: None

Semester contribution: Currently, all students have to pay a semester contribution of 84 EUR.

Costs of living: 550–750 EUR per month, depending on individual lifestyle; rent and utilities: 170–320 EUR

Funding opportunities within the university: Yes

Description of the above-mentioned funding opportunities within the university:

1. Deutschlandstipendium: The national scholarship programme "Deutschlandstipendium" supports above-average students with excellent grades. Social commitment, a willingness to take responsibility and special social, family or personal circumstances will also be taken into account (six months, 300 EUR per month).
2. Grants awarded to exceptionally committed students (three to four months, 300 EUR per month).
Technische Universität Bergakademie Freiberg (TU BAF), the “University of Resources”, was founded in 1765 and is one of the world’s oldest technical higher education institutions with an outstanding international reputation for its education and research following the

## Requirements / Registration

### Academic Admission Requirements

- Bachelor’s degree (or equivalent) in the field of Mechanical Engineering, Process Engineering, Environmental Engineering, Energy Engineering, Industrial Engineering, Materials Science and Engineering, Natural Sciences, or similar

### Language requirements

- TOEFL: with at least 87 points (Internet-based)
  The TU Bergakademie Freiberg TOEFL code is 8233.
- IELTS: with at least 6.5 for overall band score

### Application deadline

If a visa is required, the deadline is 15 April. If a visa is not required, the deadline is 15 July.


### Submit application to

TU Bergakademie Freiberg
Zulassungsbüro
Akademiestr. 6
09599 Freiberg
Germany

## Services

### Possibility of finding part-time employment

It is possible to find part-time employment on campus, e.g., as a student assistant or in the canteen.

### Accommodation

Different kinds of accommodations are available on campus and in the city of Freiberg, from single flats to shared flats. Prices vary from 170 EUR to 320 EUR, including utilities. In the dormitory, each student has her/his own room, but usually the bathroom and the kitchen have to be shared with other flatmates. Living in a dormitory is usually the first choice for new international students. There is a good chance that you will get a place in a dormitory if you apply early. The International Office supports international students in finding accommodation. See: [http://tu-freiberg.de/en/studies/international-studies/international/international-students/housing](http://tu-freiberg.de/en/studies/international-studies/international/international-students/housing)

### Specific specialist or non-specialist support for international students and doctoral candidates

- Buddy programme

---

**TU Bergakademie Freiberg**

Technische Universität Bergakademie Freiberg (TU BAF), the "University of Resources", was founded in 1765 and is one of the world’s oldest technical higher education institutions with an outstanding international reputation for its education and research following the
principle of perpetual innovation. The TU BAF is known for its famous graduates, such as polymath Alexander von Humboldt who studied in Freiberg, and for the discovery of the two chemical elements “Germanium” (C. Winkler, 1885) and “Indium” (F. Reich, Th. Richter 1863). With its four core themes – geosciences, materials, energy, and environment – it has a very distinct profile addressing the specific issues of our modern industrial society. Teaching and research reflect a practical orientation responding to the demands of industry. Thanks to its financial backing, including private sources, the TU Bergakademie Freiberg is one of the ten best research-focused universities in Germany. This guarantees a high level of education in the fields of science, engineering, and economics. In nationwide rankings, the TU Bergakademie Freiberg is regularly placed at top positions due to its outstanding conditions for studying and its intensive mentoring programmes. The university’s own underground teaching mine, open to visitors, serves as a natural laboratory and allows for “hands-on” exploration of the subterranean world of Freiberg and its mining history, dating back to the 14th century. About 24% of the university’s 4,300 students are international students. The campus offers numerous advantages typical of a small university. Short distances on campus and face-to-face contact between students and professors are major benefits. The university is structured into six faculties and has several research centres such as the Interdisciplinary Environmental Research Centre (IÖZ), the Scientific Diving Centre (SDC), and the Mine Water Research Centre. The Helmholtz Institute Freiberg for Resource Technology, which was founded by the TU Bergakademie Freiberg and the Helmholtz-Zentrum Dresden-Rossendorf, researches innovative ways to explore high-tech metals like gallium, indium, germanium or rare-earth elements. The university and student initiatives offer a large variety of cultural events and leisure activities, including over 50 different types of sports activities at the university sports centre.

University Location

Freiberg is located in the centre of the state of Saxony in the picturesque Erzgebirge Mountains, 40 km south-west of Dresden and 240 km south of Berlin.

Freiberg is more than 850 years old and was founded after the discovery of silver ore in 1168. Today, Freiberg has around 40,000 inhabitants. The medieval heart of the town, which is almost completely intact, is very attractive: the Upper Market Square with its late Gothic patrician houses and the Freiberg Cathedral at the Lower Market Square with its famous Silbermann organ and golden portal. Along with the world’s oldest town theatre, a modern multiplex cinema, and nightclubs, more than a hundred restaurants, cafés, and pubs invite you to take a break and enjoy life. There are sports facilities, a modern open-air and indoor swimming pool, and a park which surrounds the town centre like a green belt. Since 2008, the mineral collection “Terra Mineralia” functions as a centre of attraction for tourists, students, and inhabitants of Freiberg. The mineral collection, one of the largest collections in the world, is shown in the refurbished castle “Freudenstein” in the town centre. The nearby Saxon Switzerland National Park and the Erzgebirge Mountains are beautiful places for a wide variety of outdoor activities including hiking and climbing in the summer and skiing in the winter. Dresden, Leipzig, and Berlin are easily accessible by train and offer plenty of social, cultural, and recreational alternatives.

Contact

TU Bergakademie Freiberg
Faculty of Mechanical and Process Engineering and Faculty of Materials Science and Materials Technology
Akademiestr. 6
09599 Freiberg

international@tu-freiberg.de

Tel. +49 3731393100
Email
Prof Dr Olena Volkova

Tel. +49 3731392505
Email
Prof Dr Christos G. Aneziris

aneziris@ikgb.tu-freiberg.de

Last update 07.01.2020 14:57:30
International Programmes in Germany - Database

www.daad.de/international-programmes
www.daad.de/sommerkurse

Editor
DAAD - Deutscher Akademischer Austauschdienst e.V.
German Academic Exchange Service
Section K23 - Information on Studying in Germany
(responsible: Judith Lesch)
Kennedyallee 50
D-53175 Bonn
www.daad.de

GATE-Germany
Consortium for International Higher Education Marketing
www.gate-germany.de

Disclaimer
The data used for this database was collected and analysed in good faith and with due diligence. The DAAD and the Content5 AG accept no liability for the correctness of the data contained in the "International Programmes in Germany" and "Language and Short Courses in Germany".

The publication is funded by the German Federal Ministry of Education and Research and by contributions of the participating German institutions of higher education.