

CURRICULUM

| 1st semester | 2nd semester | 3rd semester | 4th semester |
|---|---|--|-----------------|
| Thermodynamics and Heat Transfer | Research Seminar and Journal Club TAIEM | Design and Development of Chemically Bounded Materials | Master's Thesis |
| Technology of Iron and Steel | | | |
| Ceramic Engineering | Steel Application | Laboratory Ceramic Courses | |
| Refractory Ceramics | Practical Course Metallurgy | Project Management | |
| Metallic Materials | | | |
| Fundamentals of Ferrous Materials | Materials Science | Experimental Assignment (Ceramic and Steel Technology) | |
| Operations Management | | | |
| Deutsch A1 | | | |
| Electives A – Advanced Engineering Background: Mechanics of Materials; Training in Fluid Dynamics; Training in Particle Technology; Practical Aspects of Thermodynamic Analysis; Simulation of Sustainable Metallurgical Process Systems; Economics | | | |
| Electives B – Technology: Fundamentals of Plastic Deformation; Melting Technology and Foundries; Sensors and Actuator; Simulation of Sustainable Metallurgical Process Systems; Economics | | | |

 mandatory courses;
 free electives;
 Master Thesis

WHY STUDYING TECHNOLOGY AND APPLICATION OF INORGANIC ENGINEERING MATERIALS AT TU BERGAKADEMIE FREIBERG?

- ▷ Strong link between theory and practice
- ▷ High degree of multidisciplinary
- ▷ Learning by practice oriented doing (laboratories, practical courses, trainings, student assistant jobs within the research projects, link to industrials etc.)
- ▷ Real-time implementation of the research projects findings in teaching
- ▷ Effective supervision by excellent lecturers with high international reputation
- ▷ Small classes (about 20 students) with high degree of interactivity
- ▷ Best job prospects
- ▷ Opportunity for excellent students to continue with PhD study
- ▷ No tuition fees

TU BERGAKADEMIE FREIBERG

Facts about the university

- founded in 1765 – more than 250 years of teaching tradition
- campus university located in a charming medieval city with beautiful architecture
- many international study programs including exchange and double degree programs
- small classes with excellent teaching quality
- all lecturers are world-renowned and highly motivated researchers
- among the top German universities in acquisition of research funding per professor
- affordable housing cost and living expenses
- year-round cultural calendar and buzzing student nightlife

CONSULTATION

TU Bergakademie Freiberg
 Central student advisory service
 Prüferstraße 2
 D-09599 Freiberg
 phone: +49 3731 39-3469; -3827
 fax: +49 3731 39-2418
 studienberatung@zuv.tu-freiberg.de

ACADEMIC ADVICE

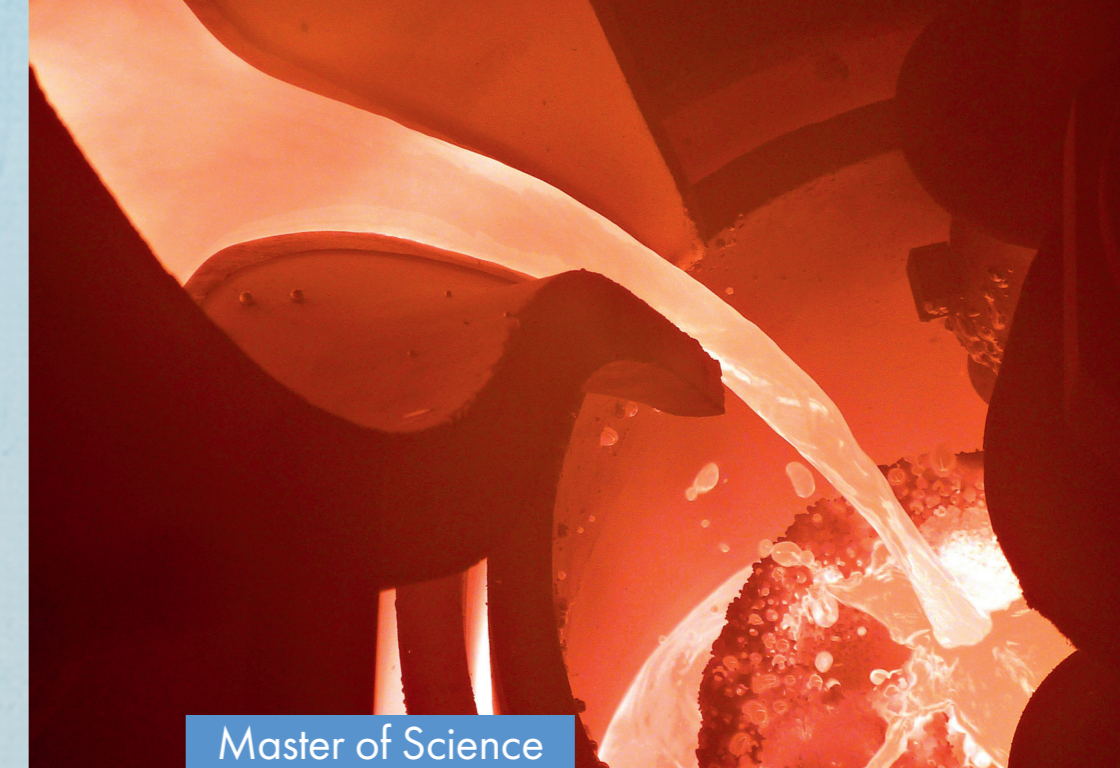
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TECHNISCHE UNIVERSITÄT
BERGAKADEMIE FREIBERG

Die Ressourcenuniversität. Seit 1765.



Master of Science

TECHNOLOGY AND APPLICATION OF INORGANIC ENGINEERING MATERIALS

Engineering Sciences

Falsities and modifications are reserved.
Effective: July 2020



tu-freiberg.de

TECHNOLOGY AND APPLICATION OF INORGANIC ENGINEERING MATERIALS

MASTER OF SCIENCE

The Inorganic Engineering Materials cover all the strategic industries and are key materials for transport section, energy technology, machine and plant design, building industry. The true understanding of thermal, chemical and functional properties at nano-, micro- and macro-levels followed by the chemical and physical interactions at interfaces/surfaces of the material is an unlimited tool for their continuous development and technology optimization.

STUDY CONCEPT

The M.Sc. in Technology and Application Inorganic Engineering Materials such as steel and ceramics is a comprehensive masters program offered by the oldest mining university in the world, the TU Bergakademie Freiberg.

TAIEM graduates will be able to:

- solve general and specific problems in the steel and ceramic producing industries,
- select a suitable steel and ceramics for a specific application,

- evaluate properties of steels and ceramics on several scales and estimate their behavior under real industrial conditions,
- detect and solve problems relating to the technology and applications of steels and ceramics,
- manage a technology-oriented research project.

MASTER

A minimum of 4 semesters (2 years) is required to complete the program. The program begins with core modules on metallic, ceramic and refractory materials as well as thermodynamics. In the second and third semester there are more advanced modules and further skills training in technology and applications of materials. Furthermore the students learn via laboratory and practical courses to apply the theoretical knowledge in real applications. Thanks to the existing optional courses, students are able to design their studies on their own and expand their knowledge from the compulsory and technology-oriented lectures. The fourth semester is designated for the master thesis.

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|----------------------------------|--|
| Duration: | 4 semesters (2 years) |
| Beginning of the program: | Winter term |
| Language: | English |
| Degree: | Master of Science (M. Sc.) |
| Costs: | No tuition fee |
| Course Language: | English |
| Application Deadline: | 15th April in case a visa is required 15th August in case no visa is required |

Admission requirement:

- ▷ 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.
- ▷ PROOF OF ENGLISH LANGUAGE SKILLS: TOEFL scores above 87 for internet-based, 213 for computer-based, and 550 for paper-based tests or IELTS with at least 6.0 for overall score.

JOB OPPORTUNITIES

The TAIEM masters program is tailored to gear the students up for the challenging tasks in the production and application-oriented industries such as iron and steelmaking industry, metal processing industry, ceramic and refractory industry, recycling extractive industry etc. Furthermore, the TAIEM masters program offers a sound foundation for an academic or research career at universities and research institutions.

APPLICATION

Submit your application and supporting documents well before the deadline. Fill in the application form on our website,

<http://tu-freiberg.de/international/application>

and send the application portfolio with all required documents to:

TU Bergakademie Freiberg
Zulassungsbüro
Akademiestr. 6
09599 Freiberg
Germany

