



Material Development and Quality Assurance



Development Activities
e.g. Entrepreneur and Consultant



Engineer
e.g. in the Iron- and Steelmaking Industry,
Foundry Industry, Metal Forming Industry

OCCUPATIONS AND CAREERS



Management,
Production Control and Monitoring
e.g. Technical Sales and Distribution



Research Institutions
e.g. Universities

MASTER METALLIC MATERIALS TECHNOLOGY

Engineering



ENROLL NOW

Apply online via our portal. Application deadline for the summer semester is the 15.10., for the winter semester the 15.04. of the current year.



ADMISSION REQUIREMENTS

- | Bachelor degree (at least 6 semesters) in the field of metallurgy, materials technology or another related discipline
- | English language proficiency (TOEFL at least 90 internet based test, IELTS at least 6.5 or equivalent language certificate)

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ACADEMIC ADVISING

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FACULTY MATERIALS SCIENCE AND TECHNOLOGY



Status: October 2023

This measure is co-financed with tax funds on the basis of the budget passed by the Saxon state parliament.

1 STUDY 4 SPECIALISATIONS



FACTS

English

Course Language

Winter and summer semester

Start of Study

Master of Science (M. Sc.)

Degree



YOUR PROFILE

| Passion for new technologies and materials

| Interest in natural sciences and engineering

| Enjoy creative solutions and experimentation



BECOME SPECIALIST

| Foundry Technology

| Metal Forming

| Non-ferrous Metallurgy

| Steel Processing

Companies are on the lookout for innovative materials and technologies, e.g. to make products lighter, more cost-efficient, more ecological or even more intelligent. Hardly any industry can do that without engineers in materials technology.

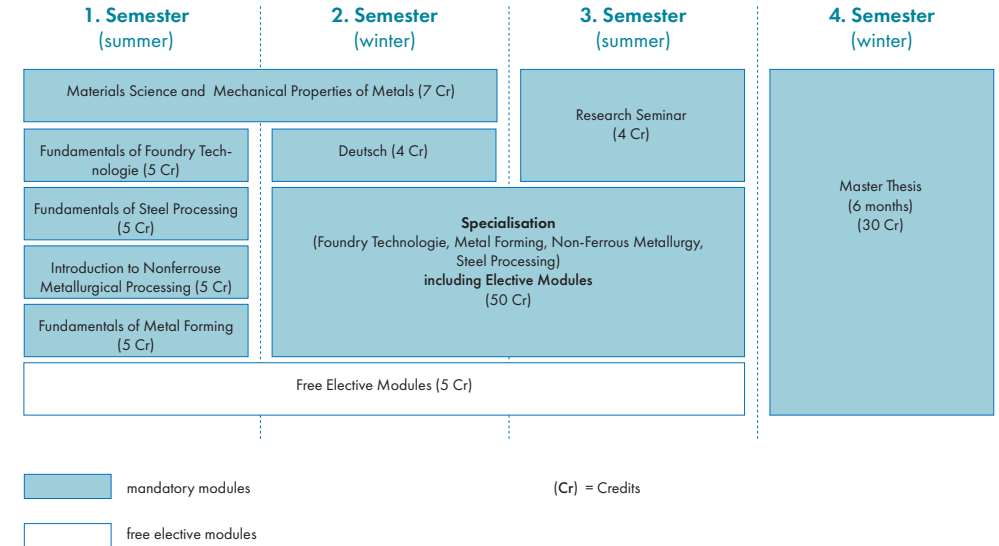
STUDY CONCEPT

On the basis of a Bachelor's degree in the field of an engineering degree programme with a focus on materials science or materials technology, the successful completion of the Master's degree program is intended to provide further specific knowledge in the field of materials processing, especially foundry technology and forming technology, or in the field of steel production and non-ferrous metallurgy, whereby business management knowledge and practical professional skills are to be combined at the university level.

The students should be enabled to independently expand and implement existing knowledge through a scientific approach.

A 12-week industrial internship is required for this degree program. It is recommended to complete or partially complete the internship before the degree programme. However, missing internship periods can also be completed during the degree programme, e.g. during the lecture-free periods until the topic of the Master's thesis is issued. The internship can be completed in different companies (materials technology, materials science, metallurgy or related fields). The certificates must show which activities have been carried out.

COURSE OF STUDIES



1 OF 4 SPECIALISATIONS IS CHOSEN

Foundry Technology

The main focus is on the basics of moulding materials and binders and the most important mould making and core making processes as well as the most important aspects of metallurgy of ferrous and non-ferrous casting materials, melting furnaces and melt treatment and analysis processes. In addition, the students get an overview of the modern production processes in foundries, the design of foundry areas, the post-treatment of castings and quality management.

Metal Forming

This specialization focuses the production technology of metallic semi-finished products by forming technologies. The lectures cover all technology stages along the production path from solidified pre-product to semi-finished product, their special features and their influences on the final properties of the product to be manufactured. Fundamentals of forming technology as well as technological process chains and their numerical simulation included their interaction with material behaviour are presented in detail.

Non-ferrous Metallurgy

The specialisation will offer the students a fundamental and applied understanding with regard to the primary production of base non-ferrous metals like copper, nickel, aluminum, tin, lead and zinc from primary and secondary resources and valuable metals will be discussed. High temperature, hydrometallurgical and electrochemical processes are analyzed from an application, modelling and experimental point of view. Specific focus is given on recycling process.

Steel Processing

The specialisation focuses on basic concepts as well as on emerging trends in iron based materials engineering and production. It covers the study of iron and steelmaking, primary and secondary metallurgy, casting, cleanliness of crude steel, optimising processing routes, materials properties and structures, as well as evaluation of final products. Global trends such as the decarbonization, increasing energy efficiency, circular economy are key issues within the lectures this specialization.