



UNIVERSITY OF TECHNOLOGY
IN THE EUROPEAN CAPITAL OF CULTURE
CHEMNITZ

Advanced Manufacturing

Faculty of Mechanical Engineering

Master's degree programme



The high dynamics in science and technology as well as the digital transformation in economics and society provide diverse challenges to the engineers of tomorrow. The master degree program Advanced Manufacturing offers methods up to date to theoretical knowledge, such as competences for new and sustainable technologies connected with research and development but also application and recycling.



What characterises the Master's degree programme Advanced Manufacturing?

The degree programme puts especially new emerging technologies, manufacturing methods and materials into focus, from which disruptive effects can start off for the production of tomorrow. Besides a stable knowledge from the Bachelor's degree in the field of production technologies, the applicants should also provide additional skills and experience to fulfill the high expectations of the degree programme. From digital competences like Industry 4.0 up to the application of new functional materials, new challenges have emerged for production technologies with which students should deal profoundly in theory, implementation and application scenarios.



„The structure of the degree programme offers us possibilities of choice and evolvement in the profiles of Hybrid Technologies, Printed Functionalities, Work Design & Sustainability Management and Production Systems. We can apply the skills gained during the projects of the research module on a practical test and amplify them due to the intensive interchange with our professors. The degree programme ends with the Master thesis in 4th semester in which expert knowledge converges with methodical knowledge.“

Student of the Master's degree programme Advanced Manufacturing

Degree Structure

Basic Modules (1st semester)

Advanced Manufacturing

- Mathematics for Engineering Science
- Digital Manufacturing
- Additive Manufacturing
- Resource Efficiency from an Economic Perspective

Compulsory Modules (1st - 2nd semester)

Research Methods and Soft Skills

- Language A1 and A2 German
- Research methods
- Elective Courses
- Two lectures from profile modules

Profile Modules (1st - 3rd semester)

Of the following four profile lines, one must be chosen

Hybrid Technologies, e.g.

- Textile Process Chains
- Complex Materials for Manufacturing
- Calculation of Anisotropic Composite Materials
- Polymer-based Hybrid Structures
- Forming Process Chains

Printed Functionalities, e.g.

- Printing Processes
- Surface and Interface Engineering
- Automotive Sensor Systems
- Media Physics
- Research Lab

Work Design & Sustainability Management, e.g.

- Resource Management: Challenges for Political Processes
- Life Cycle Engineering
- Sustainability Management/Environmental Management Accounting
- Innovation and Value Creation
- Digital Ergonomics
- Instrumentation

Production Systems, e.g.

- Joining Technologies and Strategies
- Forming Process Chains
- Machining Technologies
- Efficient Process Chains
- Design and Control of Smart Production Systems
- Composite-based Hybrid Technologies
- Complex Materials for Manufacturing

Research Module (3rd semester)

Module Master Thesis (4th semester)

Career Opportunities

Graduates of this degree programme are highly wanted in companies characterised by manufacturing through disruptive innovations like digitalisation, hybrid technologies and new functional material systems in consideration of resource- and energy efficiency. Notable examples are companies with branches like aerospace, mechanical -, automotive- and plant engineering as well as a widespread industrial basis of small and medium-sized companies up to engineering offices. The possibility to continue the scientific education at a university is offered to all graduates and also the doors are open for doctoral studies (Ph.D).

GENERAL INFORMATION

Admission requirements: in general vocationally-qualifying university bachelor's degree in Engineering, Natural Science or equivalent degree program, English language proficiency at Level B2 according to the CEFR

Standard period of study: 4 semesters

Degree: Master of Science (M.Sc.)

Start of the degree program: winter semester

Language of tuition: English

FURTHER INFORMATION:

Studying in Chemnitz

www.study-in-chemnitz.com

Online application:

www.tu-chemnitz.de/studienbewerbung

FAQ - Frequently Asked Questions

www.tu-chemnitz.de/studierendenservice/faq.php.en

Student Service Point

Straße der Nationen 62, room A10.043

+49 371 531-12125

admission@tu-chemnitz.de

Central Course Guidance Service

Straße der Nationen 62, room A10.046

+49 371 531-55555

studienberatung@tu-chemnitz.de

Academic Course Guidance

For an overview of all academic counsellors

www.tu-chemnitz.de/studienberater

Postal address

Technische Universität Chemnitz

Studierendenservice und Zentrale Studienberatung

09107 Chemnitz

For reasons of readability, the masculine gender was mostly used. However, the terms, titles and functions equally refer to all genders.