UNIVERSITY OF TECHNOLOGY
IN THE EUROPEAN CAPITAL OF CULTURE
CHEMNITZ

Advanced Manufacturing

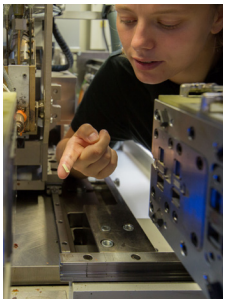
Faculty of Mechanical Engineering

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
- Research Methods

Advanced Modules: Electives/Soft skills (1st - 3rd semester, compulsory and elective modules)

- Deutsch für Ingenieure
- Deutsch als Fremdsprache
- Englisch in Studien- und Fachkommunikation
- Applied Human Factors
- Applied Modelling and Simulation in Solid Mechanics II

Specialisation Modules: Major subjects (2nd- 3rd semester)

one of the following four major subjects (compulsory and elective modules):

Hybrid Technologies, e. g.

- Textile Process Chains
- Recycling of Plastics
- Applied Modelling and Simulation in Solid Mechanics
- Surface and Interface Engineering
- Polymer-based Hybrid Structures

Smart Production, e. g.

- Joining Technologies and Strategies
- Forming Process Chains
- Machining Technologies
- Efficient Process Chains
- Design and Control of Smart Production Systems

Work Design & Sustainability Management, e. g.

- Sustainable Smart Manufacturing
- Life Cycle Engineering
- Life Cycle-oriented Management
- Sustainability Management
- IT-supported Evaluation of Material Flows and Process Chains
- Instrumentation

Printed Functionalities, e. g.

- Printing Processes
- Automotive Sensor Systems
- Media Physics
- Printing Presses
- Research Lab
- Surfaces, Thin Films and Interfaces
- Printed Electronics & Special Topics of Functional Printing

Module Applied Engineering Project (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 doctorial studies (Ph.D).

GENERAL INFORMATION

Admission requirements: in general vocationally-qualifying university bachelor's degree in Engineering, Natural Science or equivalent degree programme with in-depth scientific knowledge in certain areas, 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 programme: winter semester
Language of tuition: English, some of it in German

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

UNIVERSITY OF TECHNOLOGY
IN THE EUROPEAN CAPITAL OF CULTURE
CHEMNITZ

.

Photos: Institute for Print and Media Technology at Technische Universität Chemnitz (pmTUC), Vivek Bakul Maru, Wolfgang Thieme

Edition September 2024