Module name	**Manufacturing Engineering**
Module number	EuI-MT-C-FeTe, EuI-RES-C-FeTe
Lecturer in charge	Prof. Dr.-Ing. H. C. Hans Christian Schmale hans_christian.schmale@tu-dresden.de
Objectives	After completing the module, students will know which areas of a company are involved in the manufacture of products, which product requirements determine the manufacturing options and how manufacturing decisions are derived. They know the manufacturing processes, in particular their operating principles, the technical equipment and the technological parameters to be defined. Students have essential basic knowledge relating to the manufacture of products in mechanical, vehicle and plant engineering and understand the basic engineering approach as a basis for later independent work to derive technological decisions in relation to product design, material properties and equipment functionality. Students are able to select suitable processes and determine their most important process parameters.
Contents	The module deals with the variety of manufacturing processes in mechanical engineering, vehicle and plant construction using product and process examples. It integrates the thinking and working methods of engineers in production as well as the interaction with other specialist disciplines. The module covers the manufacturing and production engineering fundamentals for the manufacture of products and the process chains that can be designed for this purpose. The focus is on the most important manufacturing processes of primary forming, forming, machining, removal, joining and surface technology, their operating principles and process parameters.
Modes of teaching and learning	2 hours per week lectures, 1 hour per week exercises and self-study.
Prerequisites	The skills to be acquired in the module **Introduction to Analysis and Algebra, Calculus for Functions with Several Variables, Physics, Materials Science**, **Engineering Mechanics** and **Electronic Systems Design** are required.
Usability	The module is a compulsory module in the basic studies of the degree programmes Mechatronics and Renewable Energy Systems. It creates the prerequisites for the modules that list that module in the "Prerequisites" field.
Requirements for the award of credit points	The credit points are awarded when the module assessment is passed. The module assessment consists of a written exam of 90 minutes.
Credit points and grades	3 credit points can be obtained by the module. The module grade is the grade of the examination.

Frequency	The module is offered every winter semester.
Workload	The total effort is 90 hours.
Duration	The module takes one semester.