Module name	**Introduction to Systems Theory**
Module number	EuI-RES-C-ESysT, EuI-BMT-C-ESysT
Lecturer in charge	Prof. Dr.-Ing. Rafael F. Schaefer rafael.schaefer@tu-dresden.de
Objectives	After completing the module, students will be familiar with the general conceptual and methodological foundations for describing dynamic processes in nature and technology. They will be able to view static and dynamic systems from a uniform system-theoretical point of view and describe and analyze them mathematically. They know the properties of continuous-time and discrete-time systems in the time and image domain and are able to apply signal transformations to effectively describe system behavior in the image domain.
Contents	The content of the module is an overview of selected fundamentals of systems theory with a focus on analog signals and systems with continuous time, analog signals and systems with discrete time, digital systems and selected applications.
Modes of teaching and learning	2 hours per week lectures, 2 hours 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, Complex Function Theory, Basics of Electrical Engineering** and **Dynamical Electrical Networks** are required.
Usability	The module is a compulsory module in the basic studies of the degree programmes Biomedical Engineering 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	5 credit points can be obtained by the module. The module grade is the grade of the examination.
Frequency	The module is offered every summer semester.
Workload	The total effort is 150 hours.
Duration	The module takes one semester.