

Module name	Circuit Design
Module number	Eul-ET-C-ST, Eul-BMT-C-ST, Eul-IST-C-ST, Eul-MT-C-ST, Eul-RES-E-ST
Lecturer in charge	Prof. Dr. sc. techn. habil. Frank Ellinger frank.ellinger@tu-dresden.de
Objectives	After completing the module, students will know the basic principles, analysis and dimensioning of basic electronic circuits. From the topologies of the circuits, students can derive their function and calculate their properties.
Contents	The contents of the module are the basics of analog and digital electronic circuits using transistors. The following circuits are covered: Basic amplifier circuits, differential amplifiers, operational amplifiers including application examples such as active filters, oscillators, inverters, basics of digital technology, flip-flops, combinatorial switching networks, sequential circuits and analog-to-digital converters.
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 and Basics of Electrical Engineering are required.
Usability	The module is a compulsory module in the basic studies of the degree programmes Electrical Engineering, Biomedical Engineering, Information Systems Engineering and Mechatronics. Further, it is a compulsory elective module for subject orientation of the main course of study in the Diploma degree programme Renewable Energy Systems in accordance with § 6 section 3 of the study regulations and § 33 section 3 of the exam regulations. 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 120 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.