

Module Name	High Voltage and High Current Engineering Basics
Module Number	Eul-RES-E-HSHSG
Responsible Lecturer	Prof. Dr.-Ing. Maria Kosse maria.kosse@tu-dresden.de
Qualification Objectives	After successfully completing the module, students are able to understand the operational behavior of components in electrical energy supply systems and assess their strength under stress using measurement methods and tests. They are capable of describing the physical principles of solid, liquid, and gaseous insulating materials, the interrelations in lightning protection technology, the heating of current-carrying conductors, and the contact and long-term behavior of current-carrying connections.
Contents	The module covers the fundamentals and principles of high voltage and insulation technology, current-carrying capacity, and the heating of equipment. Additional topics include the design of test facilities and the contact physics principles of connection technology.
Teaching and Learning Forms	2 hours per week of lectures, 1 hour per week of exercises, 1 hour per week of practical lab courses, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Basics of Electrical Engineering and Physics are required.
Usability	The module is an elective module from the elective orientation area in accordance with § 6 paragraph 3 SO and § 33 paragraph 3 PO in the main study phase of the diploma program Renewable Energy Systems. It creates the prerequisites for the modules that list this module in the field "Prerequisites for Participation."
Prerequisites for the Award of Credit Points	Credit points are awarded when the module examination is passed. The module examination consists of a written exam lasting 120 minutes and a complex assignment with a workload of 30 hours.
Credit Points and Grades	5 credit points can be earned through the module. The module grade is determined by the weighted average of the grades of the examination components. The grade of the written exam is weighted sevenfold, and the grade of the complex assignment is weighted threefold.
Frequency of the Module	The module is offered every winter semester.
Workload	The total workload is 150 hours.
Duration of the Module	The module lasts one semester.