

Module Name	High Voltage Engineering Advanced
Module Number	Eul-ET-E-HSPV, Eul-RES-E-HSPV
Responsible Lecturer	Prof. Dr.-Ing. Maria Kosse maria.kosse@tu-dresden.de
Qualification Objectives	Students are able to classify essential equipment of electrical energy supply systems in terms of their structure, functionality, and operational requirements. They are capable of designing, evaluating, and testing components and systems with high voltage stress based on the technical fundamentals of high-voltage insulation technology. They acquire in-depth knowledge of the properties of relevant insulation systems and gain a systemic understanding of the function, design, and application of equipment in electrical energy supply systems. They are able to conduct scientific work and research in this field.
Contents	The module covers the physical and technical fundamentals of high-voltage insulation technology, relevant testing methods, as well as the structure, function, and design of essential equipment in electrical energy supply systems. This includes, among others, high-voltage insulators, high-voltage overhead lines, high-voltage cables and their accessories, transformers, rotating electrical machines, switchgear, and switching devices. Additionally, selected topics related to overvoltages and the power arc in electrical energy systems are addressed. A particular focus is placed on applications of medium- and high-voltage direct current transmission.
Teaching and Learning Forms	5 hours per week of lectures, 1 hour per week of practical lab courses, and self-study.
Prerequisites for Participation	In the diploma program Electrical Engineering, the competencies to be acquired in the module High Voltage and High Current Engineering are required. In the diploma program Renewable Energy Systems, the competencies to be acquired in the module High Voltage and High Current Engineering Basics are required.
Usability	The module is an elective module in the elective area "Competence Deepening" according to § 6 paragraph 3 SO and § 33 paragraph 4 PO of the main study program in the field of Electrical Energy Technology in the diploma program Electrical Engineering. Furthermore, it is an elective module in the elective area "Competence Deepening" according to § 6 paragraph 3 SO and § 33 paragraph 3 PO of the main study program in 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 non-public oral examination as an individual examination lasting 45 minutes and a complex assignment with a workload of 50 hours.
Credit Points and Grades	7 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 oral examination is weighted threefold, and the complex assignment is weighted twofold.
Frequency of the Module	The module is offered every summer semester.
Workload	The total workload is 210 hours.
Duration of the Module	The module lasts one semester.