

Module Name	Relativistic Aspects of Electromagnetic Field Theory
Module Number	Eul-ET-E-SRT
Responsible Lecturer	Prof. Dr. rer. nat. habil. Hans Georg Krauthäuser hans_georg.krauthaeuser@tu-dresden.de
Qualification Objectives	After completing the module, students understand the experimental evidence for relativistic field theory. They can describe field quantities as four-vectors and perform basic operations in tensor calculus. They master the transformation of fields between inertial systems and can critically assess the limitations of classical field theory.
Contents	The module covers the relativistically covariant description of electromagnetic field theory and its applications in electrical engineering.
Teaching and Learning Forms	2 hours per week of lectures, 2 hours per week of seminars, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Introduction to Analysis and Algebra, Electric and Magnetic Fields, and Electromagnetic Theory are required.
Usability	The module is an elective module from the elective area "Competence Deepening" according to § 6 paragraph 3 of the Study Regulations (SO) and § 33 paragraph 4 of the Examination Regulations (PO) of the main study program in the field of Electrical Power Engineering in the diploma program Electrical Engineering. 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 30 minutes.
Credit Points and Grades	5 credit points can be earned through the module. The module grade corresponds to the grade of the examination performance.
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.