

Module Name	Electromagnetic Theory
Module Number	Eul-ET-C-TET
Responsible Lecturer	Prof. Dr. rer. nat. habil. H. G. Krauthäuser hans_georg.krauthaeuser@tu-dresden.de
Qualification Objectives	After completing the module, students are able to reproduce Maxwell's equations in differential and integral form as well as other fundamental equations, explain the relationships between these equations, derive fundamental equations of electrostatics, magnetostatics, and electrodynamics from Maxwell's equations, analyze fundamental problems and find solutions, develop models for new problems, and select appropriate solution methods for new challenges.
Contents	The module covers the fundamentals and methods of the classical field theory of electromagnetic interactions.
Teaching and Learning Forms	4 hours per week of lectures, 4 hours per week of exercises, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Algebraic and Analytical Foundations, Multidimensional Differential and Integral Calculus, Function Theory, Partial Differential Equations and Probability Theory, as well as Electrical and Magnetic Fields, are required.
Usability	The module is a compulsory module of the main study program 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 portfolio with a total workload of 6 hours and a written exam lasting 180 minutes. The written exam is mandatory for passing.
Credit Points and Grades	7 credit points can be earned through the module. The module grade is determined by the weighted average of the two examination components. The portfolio is weighted once, and the written exam is weighted four times.
Frequency of the Module	The module is offered every academic year, starting in the winter semester.
Workload	The total workload is 210 hours.
Duration of the Module	The module lasts two semesters.