

Module Name	System Design of Complex Automation Systems
Module Number	Eul-ET-E-SysAT, Eul-IST-E-SysAT, Eul-MT-E-SysAT
Responsible Lecturer	PD Dr.-Ing. Annerose Braune annerose.braune@tu-dresden.de
Qualification Objectives	After completing the module, students are familiar with various methods for analyzing and describing the requirements of a complex automation system, for abstract modeling of hardware and software, and for well-founded quantitative and qualitative evaluation of different solution variants. Furthermore, students are able to design an automation system comprehensively based on a given task and to apply project management methods as examples.
Contents	The module covers the design of complex automation systems with a focus on requirements definition, function-oriented and object-oriented modeling of behavior and structure, as well as the fundamentals of project management.
Teaching and Learning Forms	2 hours per week of lectures, 2 hours per week of exercises, and self-study.
Prerequisites for Participation	The competencies to be acquired in the module Automation Engineering 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 Automation Technology and Robotics 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 field of Automation, Sensor Technology, and Robotics in the diploma program Information Systems Engineering. Additionally, it is an elective module in the elective area "Methods and Applications" according to § 6 paragraph 3 SO and § 33 paragraph 3 PO of the main study program in the diploma program Mechatronics. 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. A bonus for the written exam can be earned by solving exercises with a total workload of 15 hours.
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.