

Module Name	Discrete Event Systems and Control
Module Number	Eul-MT-E-ESS, Eul-ET-C-ESS
Responsible Lecturer	Prof. Dr. techn. Klaus Janschek klaus.janschek@tu-dresden.de
Qualification Objectives	After completing the module, students understand fundamental behavioral description methods for event-discrete systems and master the theoretical and computer-aided handling of event-discrete behavioral models for the control of technical systems. They are capable of independently designing event-discrete control algorithms for manageable tasks. Students are familiar with the basic structure of industrial control technology and can implement their own control designs on industrial control platforms.
Contents	The module covers event-discrete behavioral description methods, including signal-based approaches, finite automata, Petri nets, statecharts, and event-discrete control design using bottom-up/top-down approaches with automata and Petri nets.
Teaching and Learning Forms	3 hours per week of lectures, 1 hour 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 a compulsory module in the main study program of the specialization Automation Technology and Robotics in the diploma program Electrical Engineering. Furthermore, it is one of four elective modules in the specialization area "Mechatronics Advanced Knowledge" in the diploma program Mechatronics, of which three out of four must be chosen. 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 150 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 summer semester.
Workload	The total workload is 150 hours.
Duration of the Module	The module lasts one semester.