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| Module name | Automation Engineering |
| Module number | Eul-ET-C-AT, Eul-IST-C-AT, Eul-MT-C-AT |
| Lecturer in charge | Prof. Dr. techn. Klaus Janschek klaus.janschek@tu-dresden.de |
| Objectives | After completing the module, students will understand basic forms of behavioral description for technical systems and master the elementary theoretical and computer-aided handling of linear, time-invariant and discrete-event behavioral models for controlling technical systems. They are able to independently design regulation and control algorithms for simple tasks. |
| Contents | The module covers the fundamentals of automation technology with a focus on behavioral description, controller design in the frequency range, digital control loops, standard industrial controllers, discrete-event controllers, elementary control concepts and automation technologies. The module also includes the independent implementation of control algorithms in the form of a practical programming course. |
| Modes of teaching and learning | 2 hours per week lectures, 1 hour per week exercises, 1 hour per week practical lab courses and self-study. |
| Prerequisites | Knowledge of physics at basic A-level is required. |
| Usability | The module is a compulsory module in the basic studies of the degree programmes Electrical Engineering, Information Systems Engineering and Mechatronics. It creates the prerequisites for the modules that list that module in the "Prerequisites" field. |
| Requirements for the award of credit points | The credit points are awarded when the module assessment is passed. The module assessment consists of a written exam of 120 minutes. A bonus to the written exam is the completion of 60 hours of exercises. |
| Credit points and grades | 5 credit points can be obtained by the module. The module grade is the grade of the examination. |
| Frequency | The module is offered every summer semester. |
| Workload | The total effort is 150 hours. |
| Duration | The module takes one semester. |