

Module Name	System and Information Flow Modeling
Module Number	Eul-MT-E-M03V
Responsible Lecturer	Dr.-Ing. Bernhard Saske bernhard.saske@tu-dresden.de
Qualification Objectives	Students are enabled to create, evaluate, and integrate digital system models into the development process based on methodological knowledge, in order to utilize their content consistently for development purposes. Students can describe requirements for interfaces and develop simple interfaces for CAD. They are capable of evaluating information flows within IT structures for decision-making purposes and applying them in a targeted manner.
Contents	The module covers digital system models to support and perform analysis tasks in development, as well as to map complex relationships in data and information flows within the development process. It also includes the classification of modeling methods and their resulting implications for evaluating the information content of corresponding simulation results, as well as the design of information flows using model-based system development. Additional topics include the use of synthesis results, specifically CAD models, for further activities in the development process, particularly for analysis tasks. The focus is on structuring and managing emerging digital models using PDM/PLM architectures and the fundamentals of developing and programming interfaces for the consistent use of digital models in the development process.
Teaching and Learning Forms	2 hours per week of lectures, 2 hours per week of exercises, and self-study.
Prerequisites for Participation	Competencies acquired in the modules Software Engineering Basics, Design Methodologies, and Manufacturing Engineering are required.
Usability	The module is an elective module from 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.
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.