

Module Name	Computer-assisted Engineering and Process Analysis
Module Number	Eul-IST-E-CAEPA, Eul-ET-E-CAEPA
Responsible Lecturer	Prof. Dr.-Ing. habil. Leon Urbas leon.urbas@tu-dresden.de
Qualification Objectives	After completing the module, students are able to evaluate and apply description methods, techniques, and tools for computer-aided planning and design of complex information and automation systems. They are capable of formalizing the semantics of domain-specific issues through information models in an interdisciplinary team and implementing them for use in CAE systems.
Contents	The module covers methods for computer-aided engineering and process analysis. The focus is on information modeling with the aim of computer-aided, integrated, and lifecycle-spanning planning and design of information and automation systems, model transformation and synchronization, as well as their implementation in projects.
Teaching and Learning Forms	2 hours per week of lectures, 2 hours per week of projects, and self-study. The language of instruction for lectures and projects may be German or English and will be determined by the lecturer at the beginning of the semester and announced in the usual manner.
Prerequisites for Participation	The competencies to be acquired in the module "Systems Theory" are required.
Usability	The module is an elective module in the elective area "Competence Deepening" according to § 6 paragraph 3 of the study regulations and § 33 paragraph 4 of the examination regulations 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 of the study regulations and § 33 paragraph 3 of the examination regulations of the main study program in the field of Automation, Sensor Technology, and Robotics in the diploma program Information Systems Engineering. The module creates the prerequisites for the modules that list it under "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 16 hours. The portfolio can be completed in either English or German, at the student's discretion.
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.