

Module Name	Attitude and Orbit Control Systems for Space Vehicles
Module Number	Eul-ET-E-BLRRF, Eul-IST-E-BLRRF, Eul-MT-E-BLRRF
Responsible Lecturer	Prof. Dr. techn. Klaus Janschek klaus.janschek@tu-dresden.de
Qualification Objectives	After completing the module, students possess fundamental technical principles and system concepts for orbit and attitude control of spacecraft. They are able to model, analyze, and design corresponding systems.
Contents	The module covers the fundamentals of orbit and attitude control of spacecraft, focusing on topics such as orbit dynamics, orbit determination, rendezvous spacecraft, landing vehicles, attitude determination, attitude sensors, and concepts for attitude control and stabilization.
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, Sensors, 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.
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.