

Module Name	Advanced Basics of CO2-Neutral Internal Combustion Engines
Module Number	Eul-MT-E-A03A2
Responsible Lecturer	Prof. Dr. Frank Atzler frank.atzler@tu-dresden.de
Qualification Objectives	Students acquire fundamental knowledge of CO2-neutral combustion engines, including the fuels used and exhaust aftertreatment systems.
Contents	The module covers the fundamentals of combustion engines, including the structure and functionality of a combustion engine, physical and thermodynamic processes, pollutant formation and prevention, as well as control and regulation. Additional topics include fuels and exhaust aftertreatment systems.
Teaching and Learning Forms	3 hours per week of lectures, 1 hour per week of practical lab courses, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Basics of Electrical Engineering, Physics, Fundamentals of Kinematics and Kinetics, and Materials Science 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. The module cannot be selected if the module "Fundamentals of Combustion Engines and Drive Systems" has already been 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 240 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 winter semester.
Workload	The total workload is 150 hours.
Duration of the Module	The module lasts one semester.