

Module Name	Specific Production Methods Basics
Module Number	Eul-MT-E-A09G
Responsible Lecturer	Prof. Dr. A. Lasagni andres_fabian.lasagni@tu-dresden.de
Qualification Objectives	After completing the module, students are familiar with the structure and function of the most important laser and plasma sources, as well as the scientific and technological fundamentals of laser and plasma processes. Students are capable of selecting and implementing an appropriate technology according to a given requirement profile by applying mechatronic design principles.
Contents	The module covers the physical fundamentals of plasma, plasma sources, and plasma processes for various application areas. Additionally, it provides the physical and technical fundamentals of lasers and an introduction to various laser processes.
Teaching and Learning Forms	3 hours per week of lectures, 1 hour per week of exercises, 1 hour per week of practical lab courses, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Physics, 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 150 minutes and a portfolio with a workload of 22 hours.
Credit Points and Grades	7 credit points can be earned through the module. The module grade is determined by the weighted average of the grades of the individual examination components. The written exam is weighted threefold, and the portfolio is weighted singly.
Frequency of the Module	The module is offered every summer semester.
Workload	The total workload is 210 hours.
Duration of the Module	The module lasts one semester.