

Module Name	Renewable Energy Systems Basics
Module Number	RES-C-RESG
Responsible Lecturer	Prof. Dr.-Ing. Clemens Felsmann clemens.felsmann@tu-dresden.de
Qualification Objectives	After completing the module, students possess fundamental knowledge of the potentials and technologies, including their operating principles, key parameters, economic efficiency, and environmental aspects, for harnessing renewable energy sources.
Contents	The module provides an overview of the technical and economic possibilities for utilizing solar energy, geothermal energy, wind and hydropower, as well as biomass. The focus is on the use of these energy sources and technical solutions in Central Europe, including their evaluation based on the state of the art and their technical and economic development potential.
Teaching and Learning Forms	2 hours per week of lectures, 1 hour per week of exercises, 1 hour per week of seminars, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Physics, Thermodynamics Basics, Introduction to Analysis and Algebra, Differential and Integral Calculus, Basics of Electrical Engineering, Electric and Magnetic Fields, and Introduction to Energy Economics are required.
Usability	The module is a compulsory module in the basic study phase of the diploma program Renewable Energy Systems. 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 90 minutes. If fewer than 20 students are registered, the written exam will be replaced by a non-public oral group examination lasting 20 minutes. This will be announced to the registered students at the end of the registration period in the usual manner. A bonus task for the written exam is a research assignment requiring 15 hours of work.
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.