

Module name	<b>Renewable Energy Systems Basics</b>
Module number	RES-C-RESG
Lecturer in charge	Prof. Dr.-Ing. Clemens Felsmann clemens.felsmann@tu-dresden.de
Objectives	After completing the module, students will have basic knowledge of potentials and technologies, including their operating principles, parameters, economic efficiency and environmental aspects for the development of renewable energy sources.
Contents	The module provides an overview of the technical and economic possibilities of using solar energy, geothermal energy, wind power, hydropower and biomass. The focus is on the use of these energy sources and technical solutions in Central Europe and their evaluation, taking into account the state of the art and the technical and economic development potential.
Modes of teaching and learning	2 hours per week lectures, 1 hour per week exercises, 1 hour per week seminars and self-study.
Prerequisites	The skills to be acquired in the module <b>Introduction to Analysis and Algebra, Calculus for Functions with Several Variables, Physics, Thermodynamics Basics, Basics of Electrical Engineering, Electric and Magnetic Fields</b> and <b>Introduction to Energy Management</b> are required.
Usability	The module is a compulsory module in the basic studies of the degree programme Renewable Energy Systems. It creates the prerequisites for the modules that list that module in the "Prerequisites" field.
Requirements for the award of credit points	The credit points are awarded when the module assessment is passed. The module assessment consists of a written exam of 90 minutes. If fewer than 20 students are registered, the written exam will be replaced by a non-public oral exam of 20 minutes as a group exam; if necessary, this will be announced to the registered students at the end of the registration period in the usual manner. A bonus to the written exam is a research assignment of 15 hours.
Credit points and grades	5 credit points can be obtained by the module. The module grade is the grade of the examination.
Frequency	The module is offered every summer semester.
Workload	The total effort is 150 hours.
Duration	The module takes one semester.