

Module Name	RF Systems
Module Number	Eul-ET-E-HoFS, Eul-IST-E-HoFS
Responsible Lecturer	Prof. Dr.-Ing. Dirk Plettemeier dirk.plettemeier@tu-dresden.de
Qualification Objectives	After completing the module, students are familiar with ground- and satellite-based radio positioning and navigation systems. They can describe communication links via satellites at the system level and have mastered the basic knowledge of satellite technology, antenna systems, and wave propagation phenomena such as free-space propagation, atmospheric attenuation, plasma frequency, reflection and scattering, Doppler effect, and others. Students are acquainted with various radar methods, such as pulse, pulse-Doppler, MTI principle, FMCW, chip and secondary radar, as well as their system description and signal evaluation. They have acquired knowledge regarding the functionality and methods of signal processing for imaging radar methods, such as SAR principles.
Contents	The module covers the functionality and physical principles of modern high-frequency and radio systems.
Teaching and Learning Forms	4 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 "Systems Theory" are required.
Usability	The module is an elective module in the elective area "Competence Deepening" according to § 6 paragraph 3 of the study regulations and § 33 paragraph 4 of the examination regulations of the main study program in the field of Information Technology in the diploma program Electrical Engineering. Furthermore, it is an elective module in the elective area "Competence Deepening" according to § 6 paragraph 3 of the study regulations and § 33 paragraph 3 of the examination regulations of the main study program in the field of Communication Technology in the diploma program Information Systems Engineering. The module creates the prerequisites for the modules that list it under "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 non-public oral examination as an individual examination lasting 45 minutes.
Credit Points and Grades	7 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 210 hours.
Duration of the Module	The module lasts one semester.