

Module Name	Cooperative Communication
Module Number	Eul-ET-E-KoKom, Eul-IST-E-KoKom
Responsible Lecturer	Prof. Dr.-Ing. Dr. h. c. Frank H.P. Fitzek frank.fitzek@tu-dresden.de
Qualification Objectives	After completing the module, students acquire the following qualifications: The knowledge of approaches and methods of game theory enables the analysis of conflict situations, such as those occurring in resource allocation in wireless systems. Students are familiar with the fundamental mathematical tools of game theory and master their application in cooperative and non-cooperative systems in the field of mobile communication. They are acquainted with example systems and their analytical and simulative analysis, as well as the exemplary implementation on practical systems.
Contents	The module covers modern methods of resource allocation in wireless systems and their application to cooperative communication systems.
Teaching and Learning Forms	2 hours per week of lectures, 1 hour per week of exercises, 1 hour per week of practical lab courses, and self-study. The language of instruction for lectures, exercises, and practical sessions may be German or English and will be determined by the lecturer at the beginning of the semester and announced in the usual manner.
Prerequisites for Participation	In the diploma program in Electrical Engineering, the competencies to be acquired in the modules Systems Theory, Communication Engineering, Information Theory, and Communication Networks are required. In the diploma program in Information Systems Engineering, the competencies to be acquired in the modules System Theory, Communication Engineering, and Information 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 written exam lasting 120 minutes if more than 15 students are registered. If up to 15 students are registered, the written exam is replaced by a non-public oral examination as an individual exam lasting 30 minutes. This will be announced to the registered students at the end of the registration period in the usual manner, if applicable.
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.