

Code	Admission Requirements (there is no practical course work/lab included)	Minimum extent	Undergraduate Courses at RWTH Aachen that meet the requirements	CP	SWS	Sum SWS
1	Advanced Mathematics	28	Higher Mathematics 1	7	6	24
			Higher Mathematics 2	7	6	
			Higher Mathematics 3	7	6	
			Higher Mathematics 4	4	3	
			Numerical Mathematics	4	3	
2	Classical Physics and Physical Principles of Electronic Devices	10	Physics 1	5	4	8
			Physics 2	5	4	
3	Fundamentals of Electrical Engineering including Circuit Technology	34	Fundamentals of Electrical Engineering 1 - Introduction to Circuit Analysis	7	5	26
			Fundamentals of Electrical Engineering 2 - Modeling and Analysis of Electrical Components and Circuits	8	6	
			Fundamentals of Electrical Engineering 3 - Signals and Systems	8	6	
			Fundamentals of Electrical Engineering 4 - Introduction to Electromagnetic Fields Theory	8	6	
			Circuit Technology 1	5	3	
4	Fundamentals of Computer Sciences and Programming	12	Fundamentals of Computer Sciences 1 - Programming, Algorithms and Data Structures	4	3	9
			Fundamentals of Computer Sciences 2 - Microprocessor Fundamentals and Applications	4	3	
			Fundamentals of Computer Sciences 3 - Optimization, Modelling and Parallel Data Processing	4	3	
5	Fundamentals of Control and Mathematical System Theory	8	Mathematical System Theory 1	5	3	6
			Mathematical System Theory 2	5	3	
6	Advanced Electromagnetic Field Theory	8	Electrodynamics - Electromagnetic Waves or Information Theory 1	4	3	6
			Theoretical Fundamentals of Highfrequency Engineering or Electromagnetic Fields in Communication Technology or Information Theory 2	4	3	
7	Application-oriented Courses	20	Power Systems	4	3	63
			Components and Installations for the Supply of Electricity	4	3	
			Circuit Technology 2	4	3	
			Grundlagen integrierter Schaltungen und Systeme	4	3	
			Communication Engineering	4	3	
			Communication Networks	4	3	
			Operating Systems	4	3	
			Power Electronics Fundamentals, Topologies and Analysis	4	3	
			Planning and Operation of Power Systems	4	3	
			Basics of Electrical Machines	4	3	
			High and Medium Voltage Switchgear	4	3	
			VLSI-Circuits and -Architectures	4	3	
			Fundamentals of High Frequency Engineering	4	3	
			Sensors	4	3	
			Manufacturing Processes for Silicon Based Microsystems	4	3	
			Cryptography	4	3	
			Basic Principles of Compiler Constructions	4	3	
Biomedical Imaging	4	3				
Introduction to Medical Technology	4	3				
Introduction to Acoustics	4	3				
Information Transmission	4	3				