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 The only legally binding version remains the German one.*

§ 36 Degree Program of Communication and Media Engineering

Objectives

- (1) The objective of the program is to provide advanced academic-scientific training at the intersections of communications engineering and digital media technology. For both didactic and time considerations, selected core competences and systematic scientific approaches are taught, in addition to social and management skills. Graduates are to be prepared for academic careers in modern communications engineering and for careers in business.
- (2) The program is geared towards German and foreign students with a good command of English. Courses are generally taught in English.
- (3) The study course is organized into four consecutive semesters, CM1, CM2, CM3 and CM4. CM1 and CM3 teaching courses are held in the winter semesters, CM2 and CM4 courses in the summer semesters.
- (4) The time allowed for preparing the Master's thesis is 6 months.
- (5) A total of 120 credits must be obtained to complete the program.

Courses and Modules

- (6) The CME curriculum comprises the modules listed in the tables of paragraphs 10 through 13. A module includes one or several courses. The examinations designated "e" in the curriculum are passed if each partial exam is passed or graded a minimum of 'ausreichend' (4.0). All other examinations are passed if the module as a whole is graded a minimum of 'ausreichend' (4.0).
- (7) These tables list the course types, contact units per week, exam types, module-grade weightings, and the credits of the respective modules.
- (8) If the sum of all course weights within a module is greater than 1, students can make a selection from courses within that module.
- (9) For the internship, two months, but at least 35 days of attendance, must be completed in a company or other institution of professional practice. To be admitted to the internship, students must be past the examination period of the second semester at the earliest and submit a company placement that complies with the regulations for approval.

(10) Communication and Information Engineering

Module			Courses						
No.	Module	C	No.	Subject	Type	C	Hours (SWS)	Exam type	Weight
CME-01	Computer Science	8	EMI400	Object Oriented Software Development	V	3		K60	e 1/2
			EMI401	OO Software Development Lab	L	2	2 2	LA	-
			EMI402	Objected Oriented Modeling (UML)	V	3	2	K60	e 1/2
CME-02	Signal and System Theory	6	EMI403	Digital Signals and Systems	V	3	2		
			EMI405	Information Theory and Coding	V	3	2	K120	1

Module			Courses						
No.	Modul	C	No.	Subject	Type	C	Hours (SWS)	Exam type	Weight
CME-03	Communication Networks	6	EMI408	Telecommunication Networks	V	3	2	K60	e 1/2
			EMI407	Computer Networks	V	3	2	K60	e 1/2
CME-04	Digital Communications	6	EMI404	Digital Communications with Lab	V	3	3 2	K60	e 1/2
			EMI406	Advanced Channel Coding	V	3		K60	e 1/2
CME-05	Wireless Systems	5	EMI442	Automotive Radar	V	3	2	M	1
			EMI865	Software Defined Radio	L	2	2	LA	-
CME-06	Guided Waves	9	EMI411	Guided Wave Theory	V	5	4	K90	1
			EMI412	Microwave Lab	L	2	1	LA	-
			EMI 413	Guided Wave Simulation Lab	L	2	1	LA	-
CME-07	Advanced Digital Signal Processing	6	EMI414	Advanced Digit. Signal Processing	V	4	4 1	K90	1
			EMI415	DSP Lab	L	2		LA	-
CME-08	Computer Vision	5	EMI2247	Computer Vision with Lab	V+L	5	4	LA+K60 ¹	1
CME-09	Wireless Communication	5	EMI2224	Wireless Communication	V	5	4	M(1/2)+RE(1/2)	1
CME-10	Mobile Communications	5	EMI418	Mobile Communications Systems	S	3	2	RE	3/5
			EMI419	Internet of Things	V	2	2	RE	2/5
CME-11	Embedded and Industrial Networks	5	EMI2205	Embedded and Industrial Networks	V	2	2	K60	1
			EMI2206	Lab Embedded and Industrial Networks	L	3	2	LA	-

(11) Media and Information Science

Module			Courses						
No.	Module	C	No.	Subject	Type	C	Hours (SWS)	Exam type	Weight
CME-20	Interactive Distributed Applications	5	M+I400	Interactive Distributed Applications	V	5	4	K90	1
CME-21	Internet and Media Technologies	7	M+I401	Database Systems	V	3	2	K60	e 1/2
			M+I411	Database Systems Lab	L	1	1	LA	-
			M+I402	Interactive Media	V	3	2	K60	e 1/2
CME-22	Media Design	6	M+I403	Intercultural Media Design	S	3	2	PA(3/4)+RE(1/4)	1
			M+I404	IMD Lab	L	3	2	LA	-
CME-23	Ubiquitous Applications	5	M+I412	Ubiquitous Applications	V	5	2	K60(1/2)+PA(1/2)	1
CME-24	Multimedia Web Technologies	7	M+I413	Anonymity and Surveillance – Security, Privacy & Anonymity on the Internet	V	3	2		
			M+I408	Next Generation Internet	V	2	2	K120	1
			M+I405	Multimedia Databases	V	2	2		
CME-25	Optical Networks	4	M+I414	Optical Networks	V	2	2	K60	1
			M+I415	Optical Networks Lab	L	2	1	LA	-
CME-26	Media Integration	4	M+I409	Media Integration	S	2	2 2	RE	1/2
			M+I410	Media Integration Lab	L	2		LA (b)	1/2

(12) Non-technical subjects

Modules			Courses						
No.	Module	C	No.	Subject	Type	C	Hours (SWS)	Exam type	Weight
CME-40	Language	4	SZ104	German as a Foreign Language1	S	2	6	K90	-
			SZ105	German as a Foreign Language2	S	2	6	K90	1
		4 ²	SZ106	Conversation and Presentation in English	S	4	4	HA	1
CME-41	Management Skills ³	6	M+I440	Strategic Management	V	3	2	HA	½
			M+I441	Marketing	V	3	2	HA	½
			M+I508	Media Business Opportunities	V	3	2	HA	½
CME-42	Project Management	4	EMI430	Intercultural Communication & Competence	V	1	2 2	K60	1/4
			EMI431	Project Management	V	1		RE(70%)+ M(30%)	1/4
			EMI432	Intellectual Property	S	2	2	K60	½

(13) Modules without subject classification

Modules			Courses						
No.	Module	C	No.	Subject	Type	C	Hours (SWS)	Exam type	Weight
CME-50	Project Work ⁴	8	EMI433	Internship ⁵	P	8		PA+BE	-
			EMI434	Team Project ⁶	WA	8		PA+RE	1
CME-51	Master Thesis	30	EMI440	Thesis	WA	28	-	AA	1
			EMI441	Presentation and Defense	S	2	2	RE	-

Course syllabus

(14) The modules are divided into Required, Elective 1 and Elective 2 as shown below:

Module No.	Module Name	Credits	Module Groups		Semester				
			Required	Elective		1	2	3	4
				1	2				
CME-01	Computer Science	8	x						
	<i>Object Oriented Software Development</i>					x			
	<i>OO Software Development Lab</i>					x			
	<i>Objected Oriented Modeling (UML)</i>						x		
CME-02	Signal and System Theory	6	x			x			
CME-03	Communication Networks	6		x					
	<i>Computer Networks</i>					x			
	<i>Telecommunication Networks</i>						x		

Module No.	Module Name	Credits	Module Groups			Semester			
			Required	Elective		1	2	3	4
				1	2				
CME-04	Digital Communications	6	x						
	<i>Digital Communications with Lab</i>					x			
	<i>Advanced Channel Coding</i>						x		
CME-05	Wireless Systems	5		x			x	x	
	<i>Automotive Radar</i>							x	
	<i>Software Defined Radio</i>						x		
CME-06	Guided Waves	9		x					
	<i>Guided Wave Theory</i>						x		
	<i>Microwave Lab</i>							x	
	<i>Guided Wave Simulation Lab</i>							x	
CME-07	Advanced Digital Signal Processing	6		x					
	<i>Advanced Digital Signal Processing</i>						x		
	<i>DSP Lab</i>							x	
CME-08	Computer Vision	5		x			x		
CME-09	Wireless Communication	5			x			x	
CME-10	Mobile Communications	5		x				x	
CME-11	Embedded and Industrial Networks	5		x			x		
CME-20	Interactive Distributed Applications	5	x					x	
CME-21	Internet and Media Technologies	7	x			x			
CME-22	Media Design	6		x		x			
CME-23	Ubiquitous Applications	5		x			x		
CME-24	Multimedia Web Technologies	7		x				x	
CME-25	Optical Networks	4		x				x	
CME-26	Media Integration	4			x		x		
CME-40	Language	4	x			x	x		
CME-41	Management Skills	6	x				x	x	
CME-42	Project Management	4	x				x	x	
CME-50	Project Work	8	x				x	x	
CME-51	Master's Thesis	30	x						x

The following table shows the required minimum number of credits from each module group:

Module Group		Credits
Required modules		84
Electives	1	$20 + n^*$
	2	$16 - n^*$
Total		120

* n is a non-negative integer.

Modules can be individually selected, taking into account the minimum credits per group. If more than 20 credits (n) are chosen from Elective Group 1, the surplus (n) will be credited to Elective Group 2.

(15) In addition to the courses listed in the tables in paras. 10 to 13, subject-related courses from the main studies of the Bachelor's programs and from other Master's programs can also be selected for the elective modules 2 by application; the decision on this application is taken by the Examination Committee.

Calculation of the overall grade

(16) The overall grade is calculated as the average value of all graded, required and elective modules, weighted by their credit numbers.

(17) If the number of all credits from required and elective modules exceeds 120, only the elective module that is on the threshold still contributes to the overall grade; all others count as additional modules and are not considered in the overall grade.

Endnotes

¹ The ungraded Lab (LA) is a prerequisite for admission to the written exam (K60).

² For native speakers of German

³ Two courses from the Management Skills module must be taken.

⁴ In the Project Work module, either the Internship or the Team Project must be taken.

⁵ Recognition of the internship requires approval by the Internship Office before the start of the internship by written application and submission of a written report. Further details are stipulated in procedural regulations.

⁶ In the "Team Project", a project topic from Communication or Media Engineering is to be worked on in a team of at least three members, applying the methods of project management. Regular personal meetings with the supervisor are to be held. A final presentation is to be given.