

Communications Engineering (COMM)

	Study Profiles:	
	I. Systems	II. Electronics
A) Catalogue CORE		
1. Estimation and Detection Theory (Ascheid)	X	X
2. Mobile Radio Networks 1 (Petrova)	X	X
3. Principles and Design of Communication Systems and Networks (Mähönen)	X	X
4. RF Systems (Negra)	X	X
B) Catalogue ELECTIVE		
1. Ad Hoc Networks: Architectures and Protocols (Mähönen)	X	
2. Advanced Coding and Modulation (Jax)	X	
3. Advanced Topics in Signal Processing and Communication (Ohm)		
4. Algorithm Design for Digital Receivers (Ascheid)	X	X
5. Antenna Design for Radar Systems (Knott)	X	X
6. Antenna Engineering (Knott)	X	X
7. Communications Protocols (Mähönen)	X	
8. Computer Arithmetic – Fundamentals (Gemmeke)		X
9. Computer Arithmetic – Advanced Topics (Gemmeke)		X
10. Design of Software Defined Radio Transceivers (Petrova)	X	X
11. Digital Speech Transmission (Jax)		
12. DSP Design Methodologies and Tools (Leupers)		X
13. HF-System und Übertragungstechnik 2 (Heinen)	X	X
14. High Frequency Electronics (Negra)		X
15. High Frequency Electronics – Antennas and Wave Propagation (Heberling)	X	X
16. High Frequency Technology –Passive RF Components (Heberling)		X
17. Information Theory (Mathar)		
18. Internet of Things and Sensor Networks (Mähönen)	X	
19. Machine Learning for Speech and Audio Processing (Jax)		
20. Microwave Electronics (Negra)		X
21. Mobile Radio Networks 2 (Mähönen)	X	
22. Navigation for Safety-Critical Applications (Meurer)		
23. Optical Telecommunications – Devices (Witzens)		X
24. Optical Telecommunications - Systems (Witzens)	X	X
25. Optimierung in den Ingenieurwissenschaften (Schmeink)	X	
26. Pattern Recognition in Image Data (Stegmaier)		
27. Power Management Integrated Circuits (Heinen)		X
28. Principles and Architectures of Cognitive Radios (Mähönen)	X	
29. Radar System Design and Applications (Knott)	X	
30. Radar Systeme (Negra)	X	X
31. Satellitennavigation (Meurer)	X	
32. Signal Processing in Multi-Antenna (MIMO) Communication Systems (Ascheid)	X	X
33. VLSI Design for Digital Signal Processing: Architectures (Gemmeke)		X
34. VLSI Architecture Design for Digital Signal Processing – Fundamentals (Gemmeke)		X
35. Wireless communication systems (Negra)		X
C) Catalogue LABORATORY		
1. Laboratory ADS		X
2. Laboratory: Advanced Network Programming – Switching and Routing	X	
3. Laboratory: Analog and Mixed Signal Electronics	X	X
4. Laboratory: Digital Mobile Receiver Design: Synchronization and Detection	X	X
5. Laboratory: Internet of Things	X	
6. Laboratory: MATLAB Advanced – Digital Signal Processing	X	
7. Laboratory: Network Programming	X	
8. Laboratory: Network Simulators (irregular)		
9. Laboratory: Optimization Lab for Communication and Signal Processing using MATLAB	X	
10. Laboratory: Satellite Navigation	X	
11. Laboratory: SMEAGOL – Small Embedded Advanced and Generic Objects Laboratory	X	
12. Laboratory: VLSI Design Technology		X
13. Laboratory: Wireless Communications: Software Radio Implementations	X	X

D) Catalogue PROJECT

1.	Project: Communications and Multimedia	X	X
2.	Project: Electromagnetic Noise in Power Electronics		
3.	Projekt: Schaltungsentwurf und HF-Systemtechnik		X
4.	Project SMEAGOL –Small Embedded Advanced and Generic Objects	X	X
5.	Projekt: Systemsoftware für echtzeitfähige Simulationen von technischen Prozessen		X