Mobile Communication Networks					AR-303
Rota annually WS	**Duration** 1 Semester	**Semester** 3rd (Semester)	**SWS** 3 SWS	**Credit Points** 5	**Workload** 150 h

1	**Modul structure**				
	Course (Abbreviation)	**Type/ SWS**	**Presence**	**Self study**	**Credits**
	a) Mobile Communication Networks (MCN)	Lecture/ 2 SWS	30 h	65 h	3
	b) Mobile Communication Networks (MCN)	Tutorial/ 1 SWS	15 h	35 h	1,5
	c) Mobile Communication Networks (MCN)	Lab Experiments	3 h	2 h	0,5
2	**Language** English				
3	**Content** Evolution of wide area radio networks: WiMax, Mobile WiMax, LTE and LTE-Advanced. Meshed Networks: Basic concepts, Meshing based on 802.11, .14, .16, Broadband multihop architectures. Interference and Coexistance of Radio Networks: Definition, convolution and application to differential equations. LR-WPANs: ZigBee, Bluetooth, WiMedia and their derivates in control technology Wireless Sensor Networks (WSN) Environment and Content aware Networks: Communication basics for and in between autonomous, moving entities. **Literature:** Slides of all lectures will be supplied online				
4	**Goals** The course introduces advanced networking concepts with a special focus on wide area coverage and meshing as being used in sensor array networks. The students will achieve capabilities to apply and further develop such systems in the area of mobile robotics.				
5	**Examination Requirements** The final exam will be an oral (30–40 minutes) exam. formal: none; content: none				
6	**Formality of Examination** ☒ Module Finals ☐ Accumulated Grade				
7	**Module Requirements (Prerequisites)** The participants will leverage knowledge in mobile communication. Basic				
8	**Allocation to Curriculum:** Program: Automation & Robotics, Field of study: Cognitive Systems Program: Electrical Engineering und Information Technology (ETIT-263)				
9	**Responsibility/ Lecturer** *Prof. Dr. C. Wietfeld*/Prof. Dr. C. Wietfeld				