Department	VII – Electronics – Mechatronics - Optometry / *Elektrotechnik - Mechatronik – Optometrie*
Degree level	Master's
Degree program	Information and Communications Engineering / *Information and Communications Engineering*
Type of instruction	Seminar plus laboratory training
Credits	5
Availability	Every semester
Hours/week	4

Module Number	WP06
English/German Title	**Multimedia Broadcast Systems / *Multimedia-Rundfunksysteme***
Credit Points	5 credits
Workload	150 hours: • Class attendance 4 h/w during the semester lecture period: 68 hours • Independent study: 82 hours
Subject Coverage	Subject-specific specialization
Learning Objectives / Outcomes	Students know the fundamentals of audio and video signals and multimedia coding for broadcast systems, how to measure quality of coded multimedia signals, and fundamentals of broadcast systems and current standards. They can apply the knowledge in simulating coding methods and implementing and configuring broadcasting systems.
Prerequisites	Recommendation: Basic knowledge in digital communication systems (coding, modulation) and signal processing (incl. Fourier, Laplace, and z-transform)
Level	$1^{st}/2^{nd}$ semester
Type of Module	Seminar plus laboratory training
Status	Required-elective module
Semester when Offered	Every semester
Method of Assessment / Type(s) of Examination	The method of assessment / type of examination must be defined by the lecturer within the deadline determined in §19 (2) RSPO. Should the deadline pass without determination of the form of assessment in the module, the following method of assessment / type of examination applies: Written examination 50%, Written laboratory report of the laboratory group with consultation 50%.
Determination of the Grade	See study and examination regulations
Equivalent Modules	Modules with comparable contents
Contents	• Analog and digital audio and video signals • Audio and video transport and coding for broadcasting systems (MPEG, H264.x, Dolby Digital) • Audio and video quality analysis • Digital audio broadcasting standards (DAB(+), DRM(+) and others) • Digital video broadcasting standards (DVB-T/C/Sx and others) • Internet radio and IPTV • Multimedia Broadcast Multicast in 3-5G mobile communication systems • Lab training including selected topics in audio and video coding, setup and configuration of a broadcast system, measurements in broadcast systems
Reading List	W. Fischer: Digital Video and Audio Broadcasting Technology, Springer M. Wien: High Efficiency Video Coding, Springer M. Bosi, R. Goldberg: Introduction to Digital Audio Coding and Standards, Springer
Further Information	This module is offered in English.