

Module title		Abbreviation
Radar Signal Processing		10-LURI=RSP-232-m01
Module coordinator		Module offered by
holder of the Chair of Computer Science VII		Institute of Computer Science
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
<ul style="list-style-type: none"> • Introduction • Fundamentals • Wireless Propagation • Digital Signal Processing • Pulsed RADAR • Continuous-Wave RADAR • MIMO RADAR • Further Topics 		
Intended learning outcomes		
<p>Students will</p> <ul style="list-style-type: none"> • understand the fundamental principles of RADAR systems, including waveform generation, propagation and target detection, • apply statistical signal processing techniques for detection and estimation in RADAR systems, • analyse and apply pulse-Doppler RADAR signal processing methods, including matched filtering and pulse compression, • apply signal processing techniques specific to Continuous-Wave (CW) RADAR, such as Frequency Modulated CW (FMCW) RADAR, for range and velocity measurements, and • analyse and optimise Multiple-Input Multiple-Output (MIMO) RADAR systems, including waveform design, transmit/receive beamforming and target localisation. 		
Courses (type, number of weekly contact hours, language — if other than German)		
V (2) + Ü (2)		
Module taught in: German and/or English		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)		
<p>written examination (approx. 60 to 120 minutes)</p> <p>If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).</p> <p>Language of assessment: German and/or English</p> <p>creditable for bonus</p>		
Allocation of places		
--		
Additional information		
--		
Workload		
150 h		
Teaching cycle		
--		

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Master's degree (1 major) Computer Science (2023)

Master's degree (1 major) Aerospace Computer Science (2023)