Computer Vision in Robotics and Automation					AR-219
Rota annually SS	**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) Computer Vision in Robotics and Automation (CVRA)	Lecture/ 2 SWS	30 h	60 h	3
	b) Computer Vision in Robotics and Automation (CVRA)	Tutorial/ 1 SWS	15 h	45 h	2
2	**Language** English				
3	**Content** 1. Camera Models 2. Image Segmentation 3. Object Recognition 4. Stereo Vision and PMD Cameras 5. Scan Matching and Pose Estimation 6. Visual Servoing 7. Vision Based Navigation and Localisation 8. Visual SLAM **Literature:** Slides				
4	**Goals** The students acquire profound knowledge of computer vision in the context of control systems and robotics including visual serving and vision based localization, mapping and navigation.				
5	**Examination Requirements** Practical assignments, oral exam				
6	**Formality of Examination** ☒ Module Finals ☐ Accumulated Grade				
7	**Module Requirements (Prerequisites)**				
8	**Allocation to Curriculum:** Program: Automation & Robotics, Field of study: Robotics, Cognitive Systems Program: Electrical Engineering und Information Technology (ETIT-270)				
9	**Responsibility/ Lecturer** *Prof. Dr. Torsten Bertram/* Dr. Frank Hoffmann				