Title of course	**Image Processing 2**
Responsible instructor	*Prof. Dr. Klaus Chantelau*
Learning objectives	*The students should be able to* *analyze typical problems of the processing of digital audio-visual signals* *to understand the most important mathematical and algorithmic methods for feature extraction, classification and 3D analysis of audio-visual signals.* *The student should be able to apply mathematical and algorithmic methods for the development of audio and image analysis software modules.*
Course contents	*Image acquisition and illumination, image conversion (front-background separation, transformations, ...), image enhancement (filtering, segmentation, labeling, ...), feature extraction, (geometry / contour descriptors, texture descriptors, ...), 3D scene analysis, classification and measurement*
Teaching methods	*Blackboard lectures, PowerPoint slides, computer exercises.*
Prerequisites	Blackboard lectures, PowerPoint slides, computer exercises.
Suggested reading	*„Handbuch zur Industriellen Bildverarbeitung“, FhG IRB Verlag, 2007 ISBN 978-3-8167-7386-3* *“Introduction to MPEG 7” - Manjunath, Salembier, Sikora Wiley 2003, ISBN 0-471-48678-7* *“Stereoanalyse und Bildsynthese”, O. Schreer, Springer 2005, ISBN 3-540-23439-X*
Applicability	*Master Medieninformatik, Master Applied Computer Science*
Workload	*Total 150 hours. Attendance: 60 hours, Self-Study: 45 hours, Exam Preparation 45 hours*
ECTS credit points and weighting factor	*3 CP*
Basis of student evaluation	*Written examination*
Time	*3rd semester*
Frequency	*Once during the academic year (winter semester)*
Duration	*One semester*
Course type	*Elective course*
Remarks	Teaching language is English.