

Module name:	Advanced topic: Visual Computing
Abbreviation:	SVC
Study semester:	3 rd semester (WS), frequency: once a year
Responsible for module:	Frauke Sprengel
Teaching staff:	Volker Ahlers, Elisabeth Dennert-Möller, Frauke Sprengel
Language:	German, English
Place in curriculum:	Master 3 rd semester Compulsory subject for student majoring in "Graphics and Visualization"
Teaching methods/SWS:	2 SWS lecture with approx. 15 students 2 SWS exercise with approx. 15 students
Work required:	Lecture = 34 h Exercise = 34 h Own study time = 112 h
Credit points:	6 CP (= 180 h)
Prerequisites acc. to exam regulations:	None
Recommended prerequisites:	Geometric Modeling, Interactive Computer Graphics
Learning goals:	Technological skills: Acquisition of in-depth knowledge in a selected special field of visual computing, development of an understanding for applicable technologies and methods and their limits Methodological skills: Application of innovative methods in the selected field Analysis, design and realization skills: Students are able to formulate, formalize and solve problems from a new field in graphics and visualization currently under development
Contents:	A topic selected from the field of Visual Computing will be presented, e.g. medical visualization (registration and segmentation of computer tomography measurement data), digital image generation, artificial intelligence, machine learning, robotics (autonomous mobile systems), modeling and simulation (queue systems, planning of computer or logistics networks, physical simulation in computer animations, physical game engines). A main focus will be placed on current topics and developments. Research-related questions can serve as a basis for the Master thesis.
Examinations:	Examination (written or oral examination) and experimental work
Media forms:	Lecture: Presentation, board, examples, discussion Exercise: Independent task-solving in groups, project work, individual discussion
Literature:	Dependent on course contents