

Module title		Abbreviation
3D Point Cloud Processing		10-I-3D-152-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	undergraduate	--
Contents		
Laser scanning, Kinect and camera models, basic data structures (lists, arrays, oc-trees), calculating normals, k-d trees, registration, features, segmentation, tracking, applications for airborne mapping, applications to mobile mapping.		
Intended learning outcomes		
Students understand the fundamental principles of all aspects of 3D point cloud processing and are able to communicate with engineers / surveyors / CV people / etc. Students are able to solve problems of modern sensor data processing and have experienced that real application scenarios are challenging in terms of computational requirements, in terms of memory requirements and in terms of implementation issues.		
Courses (type, number of weekly contact hours, language – if other than German)		
V (2) + Ü (2)		
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
written examination (approx. 60 to 120 minutes). 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). Language of assessment: German and/or English creditable for bonus		
Allocation of places		
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Additional information		
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Workload		
150 h		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
§ 22 II Nr. 3b		
Module appears in		
Bachelor' degree (1 major) Computer Science (2015) Bachelor' degree (1 major) Mathematics (2015) Bachelor' degree (1 major) Computational Mathematics (2015) Bachelor' degree (1 major) Aerospace Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor' degree (1 major) Aerospace Computer Science (2017) Bachelor' degree (1 major) Computer Science (2017) Bachelor' degree (1 major) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)		

Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)
Bachelor' degree (1 major) Aerospace Computer Science (2020)
Bachelor' degree (1 major) Artificial Intelligence and Data Science (2022)