| Module title | | | Abbreviation |
|---|---|---|---|
| **3D Point Cloud Processing** | | | 10-I=3D-161-m01 |
| **Module coordinator** | | **Module offered by** | |
| holder of the Chair of Computer Science XVII | | 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**

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)
Module taught in: 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)

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).
Separate written examination for Master's students.
Language of assessment: German and/or English
creditable for bonus

**Allocation of places**

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**Additional information**

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IS,LR,HCI,GE

**Workload**

150 h

**Teaching cycle**

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

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**Module appears in**

Master's degree (1 major) Computer Science (2016)
Master's degree (1 major) Computer Science (2017)
Master's degree (1 major) Computer Science (2018)