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|---|--------------------------|---|
| <b>Module title</b>   |                          | <b>Abbreviation</b>                         |
| Autonomous Mobile Systems   |                          | 10-I=AMS-212-m01                            |
| <b>Module coordinator</b>   |                          | <b>Module offered by</b>                    |
| holder of the Chair of Computer Science XVII  |                          | Institute of Computer Science               |
| <b>ECTS</b>   | <b>Method of grading</b> | <b>Only after succ. compl. of module(s)</b> |
| 8   | numerical grade          | --  |
| <b>Duration</b>   | <b>Module level</b>      | <b>Other prerequisites</b>                  |
| 1 semester  | graduate                 | --  |
| <b>Contents</b>   |                          |   |
| (1) What are mobile robots? (2) Sensors (3) Sensor data processing (4) Locomotion and kinematics (5) Localization (6) Localization in maps (7) Mapping and SLAM (8) Navigation (9) Sensor data interpretation (10) Robot control architectures  |                          |   |
| <b>Intended learning outcomes</b>   |                          |   |
| Students know Bayesian concepts for sensor data processing for a mobile system and are able to apply the concepts to mobile robots. Derived concepts like Kalman filter, Particle filter, POMDPs, etc. are understood. They have learned the steps to build and program mobile systems.   |                          |   |
| <b>Courses</b> (type, number of weekly contact hours, language – if other than German)  |                          |   |
| V (4) + Ü (2)<br>Module taught in: English  |                          |   |
| <b>Method of assessment</b> (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)<br>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).<br>Creditable for bonus<br>Language of assessment: German and/or English |                          |   |
| <b>Allocation of places</b>   |                          |   |
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| <b>Additional information</b>   |                          |   |
| Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):<br>IT,KI,ES,LR,GE   |                          |   |
| <b>Workload</b>   |                          |   |
| 240 h   |                          |   |
| <b>Teaching cycle</b>   |                          |   |
| --  |                          |   |
| <b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)  |                          |   |
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| <b>Module appears in</b>  |                          |   |
| Master's degree (1 major) Computer Science (2021)   |                          |   |
| JMU Würzburg • generated 29.03.2024 • Module data record 140161   |                          |   |