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| Module Name | | **Mobile Systems Mobile Systeme** | | | | | | | | |
| Module Responsibility | | *Prof. Dr. Michael Cebulla* | | | | | | | | |
| Qualific | ation Targets | *Students learn about substantial concepts and technologies for the development of smart, mobile applications. One focus area consists in the programming with sensor data.* | | | | | | | | |
|  | **Content** | | **Know** | **Understand** | **Apply** | **Analyze** | **Assess** | **Synthesize** |  |  |
|  | Location-based Services | | x | x | x | x | x | x |  |  |
|  | Communication | | x | x | x | x | x |  |  |  |
|  | Sensorics | | x | x | x | x | x |  |  |  |
|  | Activity Recognition | | x | x | x | x | x | x |  |  |
|  | Track & Trace | | x | x | x | x | x | x |  | |
| Module Contents | | *Concepts and technologies for the development of advanced mobile*  *applications. Special focus lies on the contextual dependencies of system behavior and the communication between different components. The following topics are examined:*   - *Location-based Services: application of different localization services*  *with different properties, services for the visualization of geographical*  *data, management of geographical data, geofencing, location-based*  *social networking (lbsn)*   - *Communication in mobile applications: bluetooth, NFC, http etc.*  - *Acquisition of environmental data using sensoric interfaces*  - *Activity Recognition*   *Track & Trace-applications: acquisition of position data and* -   *environmental data, collection and management of data, automated*  *situation monitoring and recognition* | | | | | | | | |
| Teaching Methods | | *Lecture (2 hours/week), excercise (2 hours/week)* | | | | | | | | |
| Requirements for Participation | | *Skills and Knowledge in Programming with Java and Android* | | | | | | | | |
| Literature /  Multimediabased Teaching Material | | *Bill Philips, Chris Stewart, Brian Hardy, Kristin Marsiciano, Android*   *Programming – The big Nerd Ranch Guide (2nd Edition), Big Nerd Ranch. Thomas Künneth, Android 5 - Apps entwickeln mit dem Android SDK, Galileo*  *Press, Bonn 2012*  *Greg Milette, Adam Stroud, Professional Android Sensor Programming, John*  *Wiley, Indianapolis 2012* | | | | | | | | |
| Applicability | | *Master of Applied Computer Science* | | | | | | | | |
| Effort/  Total Workload | | *150 hours: 60 hours presence, 45 hours self-study, 45 hours preparation of exam* | | | | | | | | |
| ECTS / Emphasis of the Grade for the final Grad | | *5 CP (Emphasis of the Grade for the final Grade 5/120)* | | | | | | | | |
| Performance Record | | *Written exam* | | | | | | | | |
| Semester | | *2nd semester* | | | | | | | | |
| Frequency of Occurrence | | *Once a year* | | | | | | | | |
| Duration | | *One semester* | | | | | | | | |
| Type of Course | | *Obligatory course from the area distributed and mobile systems* | | | | | | | | |