Title of course	**Mobile Systems (Mobile Systeme)**
Responsible instructor	*Prof. Dr. Michael Cebulla*
Learning objectives	*Students learn about substantial concepts and technologies for the development of smart, mobile applications. One focus area consists in the programming with sensor data.*
Course 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)*
Prerequisites	*Skills and Knowledge in Programming with Java and Android*
Suggested reading	*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*
Workload	*150 hours: 60 hours presence, 45 hours self-study, 45 hours preparation of exam*
ECTS credit points and weighting factor	*5 CP (Emphasis of the Grade for the final Grade 5/120)*
Basis of student evaluation	*Written exam*
Time	*2nd semester*
Frequency	*Once a year*
Duration	One semester
Course type	*Obligatory course from the area distributed and mobile systems*

Remarks	Teaching language is English.