Title of course	**Distributed Systems Advanced Chapters**
Responsible instructor	*Prof. Dr. Michael Cebulla*
Learning objectives	*Students extend and deepen their knowledge about architectures of distributed systems. They become acquainted with additional architectures and development platforms. They develop their programming skills concerning the development of distributed systems in practical exercises. Generally the focus lies on the concept of intelligent middleware.*
Course contents	*Advanced Topics in the Development of Distributed Systems:* *- Architectures of Distributed Systems: Structure and Properties* *- Serviceoriented Architectures: Properties, Solutions, Perspectives* *- Data-driven Systems: Stream Processing* *- Actor und Agent Systems* *- Clustering, Container, Cloud Computing*
Teaching methods	*Lectures (2 hrs/week), Exercise (2 hrs/week)*
Prerequisites	*Programming skills in Java*
Suggested reading	*Andrew S. Tanenbaum, Maarten van Steen, Distributed Systems: Principles and Paradigms, Pearson Prentice Hall 2007* *George F. Coulouris, Jean Dollimore, Tim Kindberg, Distributed Systems: Concepts and Design, Pearson Prentice Hall, 2003* *Nicolai M. Josuttis, SOA in Practice – The Art of Distributed Systems Design, O'Reilly 2007* *Raymond Roestenburg, Rob Bakker, Rob Williams, Akka in Action, Manning Publication 2016* *Fabio Bellifemine, Giovanni Caire, Dominic Greenwood, Developing Multi-Agent Systems with JADE, John Wiley & Sons, 2004*
Applicability	*Master of Applied Computer Science, Master Angewandte Medieninformatik*
Workload	*150 hours: Presence 60 hours, 45 hours self-study, 45 hrs exam preparation*
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	*1st or 3rd semester*
Frequency	*Every second year*
Duration	*one semester*

Course type	*Obligatory course from the area IT-Security*
Remarks	Teaching language is English.