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| Module Name | | **Semantic Technologies in Distributed Systems (Semantische Technologien in verteilten Systemen)** | | | | | | | |
| Module Responsibility | | *Prof. Dr. Michael Cebulla* | | | | | | | |
| Qualification Targets | | *Students understand concepts and technologies from the area „intellegent middleware“ and are able to apply them. They are able to analyze and assess existing solutions on the basis of these concepts.* | | | | | | | |
|  | **Contents** | | **Know** | **Understand** | **Apply** | **Analyze** | **Assess** | **Synthesize** |  |
| Ontologies | | x | x | x | x | x |  |
| SOA-platforms /  Enterprise Service Bus | | x | x | x | x | x |  |
| Situation monitoring/ Complex Event  Processing | | x | x | x | x | x |  |
| Module Contents | | *Concepts and technologies for intelligent middleware:*  - *Ontologies: concepts for semantic data management, ETL process,*  *ontology description languages, knowledge bases and inference*  *mechanisms*  - *Middleware platforms and architectures: Enterprise service bus, service*  *oriented architectures*  - *Process Mining*  - *Situation recognition: event-based architectures, event-based*  *programming, complex event processing* | | | | | | | |
| Teaching Methods | | *Lecture (2 SWS)* | | | | | | | |
| Requirements for Participation | | *Java Programming* | | | | | | | |
| Literature / Multimedia- based Teaching Material | | *Franz Baader, Deborah L. McGuinness, Daniele Nardi, Peter F. Patel-*  *Schneider, The Description Logic Handbook (2nd Edition), Cambridge*  *University Press, 2010*  *David Chappell, Enterprise Service Bus: Theory in Practice, O’Reilly 2004 David Luckham, The Power of Events: An Introduction to Complex Event*  *Processing in Distributed Systems, Addison-Wesley 2002*  *Wil M. P. van der Aalst, Process Mining – Data Science in Action, Springer 2016* | | | | | | | |
| Applicability | | *Master of Applied Computer Science, Master Angewandte Medieninformatik* | | | | | | | |
| Effort/  Total Workload | | *120 hrs, presence time 45 hours, self study 40 hrs, exam preparation 35 hrs* | | | | | | | |
| ECTS / Emphasis of the Grade for the final Grade | | *4 CP (Emphasis of the grade for the final grade 4/120)* | | | | | | | |
| Performance Record | | *Written exam* | | | | | | | |
| Semester | | *1st and 3rd Semester* | | | | | | | |
| Frequency of Occurrence | | *Every second year* | | | | | | | |
| Duration | | *One Semester* | | | | | | | |
| Type of Course | | *Selection area* | | | | | | | |