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| Module Name | **Service-Oriented Networks** |
| Module Responsibility | *Prof. Dr.-Ing. Heinz-Peter Höller* |
| Qualification Targets | *Students*  - *will get advanced knowledge on the requirements of multimedia*  *streams in networks,*  - *should be able to correlate deficiencies in the quality of network*  *services with properties of the network and traffic characteristics,*  - *will get advanced knowledge on the approach of quality of service and*  *congestion control,*  - *should be able to identify and to analyze quality of service as well as*  *congestion control approaches at all concerned OSI levels and*  - *should be able to react on shift and variation of quality of service when*  *programming distributed systems.* |
| Module Contents | *Modern applications and their requirements for networks*  *Congestion control*  *Quality of service*  • *classes of service*  • *signaling*  • *traffic management*  • *buffer management*  *TCP congestion control*  *quality of service at OSI level two (ATM, LAN, MPLS)*  *Internet quality of service*  • *Integrated services*  • *Differentiated services*  *Advanced transport control protocols* |
| Teaching Methods | *Seminar-like lecture (3 hours/week)*  *Exercises and discussions to deepen the knowing (1 hour/week)* |
| Requirements for Participation | *There are no formal prerequisites. Good knowledge in communication networks is expected.* |
| Literature / Multimedial-based Teaching Material | *Badach, A., Voice over IP Die Technik, Hanser, München, 2005.*  *Braun, T. & Zitterbart, M.. Hochleistungskommunikation, Band 2: Transportdienste und –protokolle.Oldenbourg Verlag 1996.*  *Kurose, J.F. & Ross, K.W. Computernetzwerke. Pearson Studium, München 2008.*  *Lu, G., Communication and Computing for Distributed Multimedia Systems.Artech House 1996.*  *Schmitz, R., Kiefer, R., Maucher, J., Schulze, J. &Suchy, T. Kompendium Medieninformatik. Mediennetze. Springer 2006.*  *Shin, J., Lee, D.C. &Kuo, C.-C.J., Quality of Service for Internet*  *Multimedia,Prentice Hall 2004*  *Siegel, E.D., Quality of Service. Solutions for the Enterprise.Wiley 2000 Stalling, W.. Quality of Service and Quality of Experience. The Internet Protocol Journal (2016, March), 14-40.* |
| Applicability | *„Service-Oriented Networks“ is compulsory in the master program. Gained expertise is essential where quality of service issues have to be considered.* |
| Effort / Total Workload | *Total 150 hours. Attendance: 60 hours, Self-Study: 45 hours, Exam Preparation 45 hours* |
| ECTS / Emphasis of the Grade for the final Grade | *5 CP (Emphasis of the Grade for the final Grade 5/120)* |
| Performance Record | *Oral examination* |
| Semester | *2nd semester* |
| Duration | *One semester* |
| Type of Course | *Obligatory* |
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