TECHNISCHE UNIVERSITÄT KAISERSLAUTERN

## Module Handbook

TUK MODHB Homepage

# Course INF-42-51-K-6

## Stochastic Analysis of Distributed Systems (2V+1U, 4.0 LP)

### Course Type

| SWS | Type | Course Form | CP (Effort) | Presence-Time / Self-Study | |
|---|---|---|---|---|---|
| - | K | Lecture with exercise classes (V/U) | 4.0 CP | | 78 h |
| 2 | V | Lecture | | 28 h | |
| 1 | U | Exercise class (in small groups) | | 14 h | |
| (2V+1U) | | | 4.0 CP | 42 h | 78 h |

### Basedata

| | |
|---|---|
| SWS | 2V+1U |
| CP, Effort | 4.0 CP = 120 h |
| Position of the semester | 1 Sem. irreg. |
| Level | [6] Master (General) |
| Language | [DE/EN] German or English as required |
| Lecturers | Schmitt, Jens, Prof. Dr. (PROF \| DEPT: INF) |
| Area of study | [INF-VVS] Distributed and Networked Systems |
| Livecycle-State | [NORM] Active |

### Notice

Former title: "Performance Analysis of Distributed Systems"

### Possible Study achievement

- Verification of study performance: **proof of successful participation in the exercise classes (ungraded)**
- Details of the examination (type, duration, criteria) will be announced at the beginning of the course.

## Contents

The deterministic network calculus as method for worst-case analysis of distributed systems

- abstractions of arrival and service processes
- calculation of performance guarantees
- end-to-end analysis
- network analysis
- tool support

## Literature

- J.Y. Le Boudec and P. Thiran. Network Calculus - A Theory of Deterministic Queuing Systems for the Internet. Series: Lecture Notes in Computer Science, Volume 2050, 2001.
- C.S.Chang. Performance Guarantees in Communication Networks, Springer Verlag, 2000.

## Requirements for attendance (informal)

### Courses

- [MAT-02-12-K-1] Mathematics for Computer Science Students: Combinatorics, Stochastics, and Statistics (4V+2U, 8.0 LP)

## Requirements for attendance (formal)

**None**

## References to Course [INF-42-51-K-6]

| Module | Name | Context | |
|---|---|---|---|
| [INF-42-51-M-6] | Stochastic Analysis of Distributed Systems | P: Obligatory | 2V+1U, 4.0 LP |

| Course-Pool | Name |
|---|---|
| [INF-VVS_V-KPOOL-6] | Lectures of the teaching area Distributed and Networked Systems |