



# Operating System Design

**Module title:**

Operating System Design

**Credits:**

6

**Responsible person:**

Heiß, Hans-Ulrich

**Office:**

EN 6

**Contact person:**

No information

**Website:**<http://www.kbs.tu-berlin.de/>**Display language:**

Englisch

**E-mail address:**

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## Learning Outcomes

Students who have successfully finished this module have an advanced knowledge of operating systems. They are aware of different architectural approaches and know their advantages and disadvantages. They have acquired the ability for well-founded design decisions based on qualitative and quantitative arguments. They have a sound knowledge of modern approaches like microkernels, virtual machines, and distributed operating systems.

## Content

Operating system architecture, micro- and macrokernels, design principles, resource management, virtualization, distributed OS, modern file systems, queuing models

## Module Components

Course Name	Type	Number	Cycle	SWS
Operating System Design	UE	0432 L 525	WS	1
Operating System Design	VL	0432 L 525	WS	3

## Workload and Credit Points

Operating System Design (Übung)	Multiplier	Hours	Total
Assignments	1.0	45.0h	45.0h
Preparation and follow-up	15.0	1.0h	15.0h
Presence	15.0	1.0h	15.0h
			75.0h

Operating System Design (Vorlesung)	Multiplier	Hours	Total
Preparation and follow-up	15.0	1.0h	15.0h
Presence	15.0	3.0h	45.0h
			60.0h

Course-independent workload	Multiplier	Hours	Total
Exam preparation	1.0	45.0h	45.0h
			45.0h

The Workload of the module sums up to 180.0 Hours. Therefore the module contains 6 Credits.

## Description of Teaching and Learning Methods

The lecture conveys the material in traditional form. The tutorial encompasses interactive discussion of issues related to the lecture material. Students may present results of their assignments (homework).

## Requirements for participation and examination

### Desirable prerequisites for participation in the courses:

Basic bachelor knowledge on operating systems and computer architecture is required.

### Mandatory requirements for the module test application:

1.) [KBS] Operating System Design Assignments

## Module completion

**Grading:**

graded

**Type of exam:**

Schriftliche Prüfung

**Language:**

English

**Duration/Extent:**

120 minutes

## Duration of the Module

This module can be completed in 1 semester.

## Maximum Number of Participants

This module is limited to maximum capacity of 40

## Registration Procedures

See <http://www.kbs.tu-berlin.de>

## Recommended reading, Lecture notes

### Lecture notes:

unavailable

### Electronical lecture notes :

available

*Additional information:*

<http://www.kbs.tu-berlin.de/>

### Recommended literature:

Stallings, W.: Operating Systems: Internals and Design Principles, 5th ed., Prentice Hall, 2004. • Bacon, J.; Harris, T.: Operating Systems, Addison Wesley, 2003. • Deitel, H. M. et al.: Operating Systems, Prentice Hall, 2004. • Silberschatz, A. et al.: Operating System Concepts 7th ed., John Wiley, 2005. • Singhal, M.; Shivaratri, N.: Advanced Concepts in Operating Systems, McGraw-Hill, 1994. • Tanenbaum, A. S.; van Steen, M.: Distributed Systems, 2nd ed., Pearson, 2007. • Sinha, P. K.: Distributed Operating Systems, IEEE Press, 1997. • Chow, R.; Johnson, Th.: Distributed Operating Systems & Algorithms, Addison Wesley, 1997. • Galli, D.: Distributed Operating Systems, Prentice Hall, 2000. • Kleinrock, L.: Queueing Systems, Vol. I+II, John Wiley, 1975.

## Assigned Degree Programs

This module is used in the following module lists:

### Computer Engineering (Master of Science)

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

### Computer Science (Informatik) (Master of Science)

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

### Double-Degree-Masterstudiengang ICT Innovation (Master of Science)

MSc ICT Innovation PO 2014

Modullisten der Semester: SS 2017 WS 2017/18

MSc ICT Innovation StuPO 2016

Modullisten der Semester: SS 2017 WS 2017/18

MSc ICT Innovation StuPO 2017

Modullisten der Semester: WS 2017/18

### Elektrotechnik (Master of Science)

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

### Informatik (Master of Science)

MSc Informatik PO 2013

Modullisten der Semester: SS 2017 WS 2017/18

### Technische Informatik (Master of Science)

StuPO 2013

Modullisten der Semester: SS 2017 WS 2017/18

### Wirtschaftsinformatik / Information Systems Management (Master of Science)

StuPO 2013

Modullisten der Semester: SS 2017 WS 2017/18

StuPO 2017

Modullisten der Semester: WS 2017/18

### Wirtschaftsingenieurwesen (Master of Science)

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18

## Miscellaneous

The module is offered every year.