

# Course

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# Advanced Operating System Issues (AOSI)

Jörg Kaiser, IVS - EOS

Distributed OS  
and  
Embedded Systems



# General Course Information

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## Lecture:

Prof. Dr. Jörg Kaiser  
Institut für Verteilte Systeme (IVS)  
Arbeitsgruppe Eingebettete Systeme und Betriebssysteme

[kaiser@ivs.cs.uni-magdeburg.de](mailto:kaiser@ivs.cs.uni-magdeburg.de)

## Exercises:

Thomas Kiebel  
Institut für Verteilte Systeme (IVS)  
Arbeitsgruppe Eingebettete Systeme und Betriebssysteme

[kiebel@ivs.cs.uni-magdeburg.de](mailto:kiebel@ivs.cs.uni-magdeburg.de)



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## Time:

Lecture: Wednesday, 11:00 c.t.

Exercises: Monday, 15:00 c.t.; Thursday, 9:00 c.t.

## Location:

Lecture: G22B-103

Exercises: G29-334

## Qualifications:

Vordiplom, VL Betriebssysteme 1,  
VL Technische Informatik II.

## Creditpoints:

6 ECTS

## Conditions for

successful participation: exercises, exam



# General Course Information

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- Exercises, information etc. will be available on the web.
- Slides of the course will be made available on:

[http://ivs.cs.uni-magdeburg.de/eos/lehre/ss2008/v1\\_bs2/](http://ivs.cs.uni-magdeburg.de/eos/lehre/ss2008/v1_bs2/)

- information is also accessible via UNIVIS

Participation requires registration on the web-page !

[https://bode.cs.uni-magdeburg.de/eos/anmeldung/form\\_in.php](https://bode.cs.uni-magdeburg.de/eos/anmeldung/form_in.php)



# Basic knowledge from OS I

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Organization of a computer from the OS perspective  
Basic concepts and mechanisms of an OS  
Introduction to programming on low system levels

- memory and processor abstractions
- input/output and asynchronous operations
- processes and threads
- scheduling
- concurrency and synchronization



# roadmap for OS II:

- access control and protection
- models of distributed systems
- communication abstractions and programming models
- distributed storage systems
- OS for tiny embedded systems



# Goals OS II

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- Extending the basic knowledge of OS I
- Knowing the main principle problems and issues in the presented topics
- Understanding of the trade-offs and design decisions for the presented OS concepts
- Being able to assess the impact of a solution in an off-the-shelf OS



# Literature:

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Andrew S. Tanenbaum:

Moderne Betriebssysteme, 2. Auflage, Pearson Studium, 2003

William Stallings:

Betriebssysteme, Prinzipien und Umsetzung, 4. Auflage, Pearson Studium, 2003

G. Coulouris, J. Dollimore, T. Kindberg:

Verteilte Systeme - Konzepte und Design, Pearson Studium, 2002

further readings will be indicated during the course

