### Module Description

#### 1. Qualification Aims

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 or virtual machines.

The course is **principally** designed to impart technical skills 50 %, method skills 40 %, system skills 10 %, and social skills 10 %.

#### 2. Content

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

#### 3. Module Components

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Course type</th>
<th>Weekly hours per semester</th>
<th>CPs (according to ECTS)</th>
<th>Compulsory(C) / Compulsory Elective (CE)</th>
<th>Semester (WS / SS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System Design</td>
<td>L</td>
<td>3</td>
<td>6</td>
<td>C</td>
<td>WS</td>
</tr>
<tr>
<td>Tutorial</td>
<td>T</td>
<td>1</td>
<td>6</td>
<td>C</td>
<td>WS</td>
</tr>
</tbody>
</table>

#### 4. 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).

#### 5. Prerequisites for Participation

Basic (undergraduate) course on operating systems is required.
6. Target Group of Module
Master students of Computer Science and Computer Engineering

7. Work Requirements and Credit Points

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Calculation Factor</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence in lectures</td>
<td>3*15</td>
<td>45</td>
</tr>
<tr>
<td>Presence in tutorials</td>
<td>1*15</td>
<td>15</td>
</tr>
<tr>
<td>Pre- and postpreparation of classes</td>
<td>2*15</td>
<td>30</td>
</tr>
<tr>
<td>assignments</td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Exam preparation</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>180</strong></td>
</tr>
</tbody>
</table>

8. Module Examination and Grading Procedures

Oral examination

9. Duration of Module

1 semester

10. Number of Participants


11. Enrolment Procedures

See homepage of module at http://kbs.tu-berlin.de

12. Recommended Reading, Lecture Notes

Lecture notes available in paper form? yes ☐ no X
If yes, where can they be purchased?
Lecture notes in paper form are sometimes made available during class.
Lecture notes available in electronic form? yes X no ☐
If yes, please specify web address: http://kbs.tu-berlin.de

Recommended Reading:

13. Other Information

German name of module: „Betriebssystemkonzepte“