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| Obuda University John von Neumann Faculty of Informatics | | | Institute for Cyber-Physical Systems | | |
| Name and code: Virtualised storage systems (NIXVT1CBNE) | | | Credits: 4 | | |
| Computer Science and Engineering BSc | | | 2020/21 year II. semester | | |
| Subject lecturers: Attila Farkas | | | | | |
| Prerequisites (with code): | | - | | | |
| Weekly hours: | Lecture: 1 | Seminar.: 0 | Lab. hours: 1 | Consultation: 0 | |
| Way of assessment: | mid-term mark | | | | |
| Course description: | | | | | |
| <i>Goal:</i> The main purpose of the course is to show the main features of data storage systems, by introducing data storage building blocks, and structures built upon them. By the end of the course students are expected to know the major data storage physical devices (disks, tapes, SSDs, etc.), data storage networks (SAN, NAS, FC, etc.), and generic storage solutions needed to use virtual facilities (like volumes, redundancy structures, multipathing) based on the physical devices. | | | | | |
| <i>Course description:</i> We start with introducing the fundamental terms of storage infrastructures, then introducing the physical data storage devices, followed by the widely used data storage networks. We follow the logical layered model of data storage architectures, at each layer showing the most frequently used virtualization solutions as well as parameters. The lab practices will correspond to the theoretical overview, where students are allowed to try out in practice what they learn in theory. | | | | | |

| Lecture schedule | |
|-----------------------|---|
| <i>Education week</i> | <i>Topic</i> |
| 1. | Storage fundamentals |
| 2. | Historical overview |
| 3. | Physical data storage devices |
| 4. | Data storage structures: JBOD, partitions, RAID |
| 5. | Data storage architectures 1, DAS, NAS |
| 6. | Break - National holiday |
| 7. | Data storage architectures 2, SAN |
| 8. | Data storage protocols 1, FC, AoE, FCoE |
| 9. | Break - Eastern Monday |
| 10. | Data storage protocols 2, FC, SCSI, iSCSI |
| 11. | File systems 1, local file systems |
| 12. | Midterm test |
| 13. | Midterm project presentation |
| 14. | Replacement of midterm test or the presentation |

| Midterm requirements | | | | | | | | | | | | | |
|---|--|-----------------|-------|----------|---------------|----------|----------|----------|-------------|----------|------------------|---------|------------|
| The midterm test has to be passed, and the project work has to be documented and presented. | | | | | | | | | | | | | |
| Midterm tests | | | | | | | | | | | | | |
| Education week | Topic | | | | | | | | | | | | |
| 12 | Midterm test | | | | | | | | | | | | |
| 13 | Presentation of project work | | | | | | | | | | | | |
| 14 | Replacement of midterm test or project work presentation | | | | | | | | | | | | |
| Final grade calculation methods | | | | | | | | | | | | | |
| <p>Digital education mode: The midterm test will be a Moodle test.</p> <p>Traditional education mode: Written midterm test.</p> <p>In both cases, the completed project work will modify the final result with -1/0/+1 grade.</p> | | | | | | | | | | | | | |
| <table> <tr> <th>Achieved result</th><th>Grade</th></tr> <tr> <td>89%-100%</td><td>excellent (5)</td></tr> <tr> <td>76%-88<%</td><td>good (4)</td></tr> <tr> <td>63%-75<%</td><td>average (3)</td></tr> <tr> <td>51%-62<%</td><td>satisfactory (2)</td></tr> <tr> <td>0%-50<%</td><td>failed (1)</td></tr> </table> | | Achieved result | Grade | 89%-100% | excellent (5) | 76%-88<% | good (4) | 63%-75<% | average (3) | 51%-62<% | satisfactory (2) | 0%-50<% | failed (1) |
| Achieved result | Grade | | | | | | | | | | | | |
| 89%-100% | excellent (5) | | | | | | | | | | | | |
| 76%-88<% | good (4) | | | | | | | | | | | | |
| 63%-75<% | average (3) | | | | | | | | | | | | |
| 51%-62<% | satisfactory (2) | | | | | | | | | | | | |
| 0%-50<% | failed (1) | | | | | | | | | | | | |
| Type of replacement | | | | | | | | | | | | | |
| In the 14 th week for the written midterm test / project presentation. | | | | | | | | | | | | | |
| Type of exam | | | | | | | | | | | | | |
| - | | | | | | | | | | | | | |
| Exam grade calculation method | | | | | | | | | | | | | |
| - | | | | | | | | | | | | | |
| References | | | | | | | | | | | | | |
| Mandatory: | | | | | | | | | | | | | |
| https://prezi.com/6mntpvs8oqts/ | | | | | | | | | | | | | |
| Recommended: | | | | | | | | | | | | | |
| Built into the mandatory one | | | | | | | | | | | | | |