Óbuda 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* *2021/22 year II. semester*				
Subject lecturers: Márk Emődi				
Prerequisites (with code):	-			
Weekly hours:	Lecture: 1	Seminar.: 0	Lab. hours: 1	Consultation: 0
Way of assessment:	mid-term mark			

Course description:

***Goal*:** 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.

Course description: 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	
Education week	***Topic***
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.	**Holiday – 1848 Revolution Memorial Day**
7.	Data storage architectures 2, SAN
8.	Data storage protocols 1, FC, AoE, FCoE
9.	Data storage protocols 2, FC, SCSI, iSCSI
10.	File systems 1, local file systems
11.	**Holiday – Spring holiday**
12.	Midterm test
13.	Midterm project presentation
14.	Replacement of midterm test or the presentation

Midterm requirements

The midterm test must be passed, and the project work must be (well) 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

Digital education mode:
The midterm test will be held on Moodle.

Traditional education mode:
Written midterm test.

In both cases, the completed project work will modify the final result with -1/0/+1 grade.

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 14th 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