Óbuda University John von Neumann Faculty of Informatics	Institute for Cyber-physical Systems

Name and code:	**Credits***: 3*

Cloud computing services I (NAIFS1SENE)
2021/22 year I. semester

Subject lecturers: Dr. habil. Róbert Lovas

Prerequisites (with code):	NAIVT1SENE			
Weekly hours: 2	Lecture: 2	Seminar.: 0	Lab. hours: 0	Consultation: 0
Way of assessment:	Written test *(or online: oral test on MS Teams)*			

Course description:

Goal:
The main aim of the subject is to get familiarised with cloud computing systems, and to provide theoretical grounding for widespread public, private, and hybrid cloud platforms both from the user's and from the cloud operator's point of view.
Introduce to and get practiced in the development of cloud-oriented software systems using the most widespread design patterns.
The course serves as the basis for the practical knowledge to be used for the deployment of an open-source cloud computing system during the practice labs later.

Course description: The students will acquire knowledge on service types offered by clouds (IaaS/PaaS/SaaS), and their related deployment characteristics, typical solutions, as well as their management and automation possibilities. In the course students learn about the practical approaches of developing cloud-based software systems. The course deals with developer and test environments, special development and programming models and design patterns, standard solutions, and best practices in development. The topics also cover the authentication and security issues of cloud-oriented software systems.

Lecture schedule	
Education week	*Topic*
1.	Clouds and software models
2.	IaaS: APIs, development and test tools
3.	PaaS / SaaS: APIs, development and test tools
4.	OpenNebula I.
5.	OpenNebula II.
6.	Design patterns I: Scalability
7.	Design patterns II: High Availability
8.	Design patterns III and IV: Static and dynamic data
9.	Holiday
10.	Design patterns V: Databases
11.	Design patterns VI: Data processing
12.	Design patterns VII: Throw-away environments
13.	Test
14.	Re-test (if necessary)

Midterm requirements
The written test has to be passed. *In case of on-line education: oral test on-line on MS Teams.*

Final grade calculation methods

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 exam
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Type of replacement
In the 14th week.

References
Obligatory: Barrie Sosinsky: Cloud Computing Bible, Wiley, 2011 Bill Wilder: Cloud Architecture Patterns, O'Reilly, 2012 Marcus Young: Implementing Cloud Design Patterns for AWS, PACKT, 2015
Recommended: See Moodle

2021/9/2