

### DESCRIPTION OF A STUDY COURSE – SYLLABUS

<b>Title of a course</b>	<b>Distributed Systems</b>				
<b>Head of course</b>	<b>PhD Marin Kaluža, College Professor</b>				
<b>Study programme</b>	<b>Specialist professional graduate study of Information Technology in Business Systems</b>				
<b>Status of a course</b>	Obligatory				
<b>Year of study</b>	2.	<b>Semester</b>	III	<b>ECTS credits</b>	4
<b>Teaching plan (L + E + S+ Pr)</b>	1L+2E				
<b>Goals of a course</b>					
Acquiring knowledge in the field of distributed systems. Acquiring competencies for planning and designing research work, presenting research, and analyzing other research work in the field of distributed systems.					
<b>Conditions for enrolling course</b>					
No conditions					
<b>Learning outcomes on a level of a study programme which includes course</b>					
<p>Outcome 1: Apply information and communication systems design methods.</p> <p>Outcome 3: Apply software engineering principles in the development of information systems.</p> <p>Outcome 6: Apply appropriate tools in the implementation of information and communication systems.</p> <p>Outcome 7: Apply methods and techniques for creating and managing databases.</p> <p>Outcome 8: Apply methods and techniques for managing security and data protection in information and communication systems.</p> <p>Outcome 11: Design and implement a distributed business information system.</p> <p>Outcome 15: Analyse and recommend the use of IT tools within a business organization.</p> <p>Outcome 16: Assess the place and role of ICT in the context of organization, management and business processes.</p> <p>Outcome 17: Present development and software solutions within a business organization.</p>					
<b>Expected learning outcomes on a level of a course</b>					
<ol style="list-style-type: none"> <li>1. Explain examples and characteristics of distributed systems, and compare distributed and centralized systems.</li> <li>2. Explain the properties of a distributed system, explain the types of distributed systems.</li> <li>3. Explain the operating principles of distributed computer systems, distributed information systems, and distributed databases.</li> <li>4. Plan research work, and analyse, compare and propose new technological and technical insights in the field of distributed systems.</li> </ol>					
<b>Content of a course</b>					
Concept, goals and characteristics of distributed systems. Technical basis of distributed systems, assemblies and programming support. Basic structures of distributed systems. Management of distributed databases and distributed processing. Special requirements for operating systems and other programming support. Internet as a distributed system, characteristics, services. Internet and electronic business. Advantages and disadvantages.					
<b>Teaching modes</b>	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
<b>Comments</b>					
<b>Students' obligations</b>					

**Grading, evaluation and monitoring of students' work continuously during lectures and exams**

Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.

**Continuous check-up:**

Outcomes	Theoretical exam (written exam)	Practical exam 1 - seminar work (research work)	Practical exam 2 - presentation (research work)	Practical exam 3 - activity (analysis of presented works)	Threshold	Max
Outcome 1	16%				8%	16%
Outcome 2	12%				6%	12%
Outcome 3	12%				6%	12%
Outcome 4		25%	15%	20%	30%	60%
Percentage of ECTS	1,6	1	0,6	0,8		
Total	40%	25%	15%	20%	50 %	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

**Exam term:**

Outcomes	Theoretical part (oral / written exam)	Practical part research work	Max
Outcome 1	16%		20%
Outcome 2	12%		20%
Outcome 3	12%		
Outcome 4		60%	60%
Percentage of ECTS	1,6	2,4	
Total	40%	60%	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

**Grading:**

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A
75,00 – 89,99	Very good (4)	B
60,00 – 74,99	Good (3)	C
50,00 – 59,99	Sufficient (2)	D
0,00 – 49,99	Insufficient (1)	F

**Obligatory literature**

1. Course materials Distributed Systems available on Moodle.

**Additional literature**

1. Tanenbaum, van Steen: Distributed Systems, Principles and Paradigms, Prentice Hall, 2002, [www.prenhall.com/tanenbaum](http://www.prenhall.com/tanenbaum)
2. Coulouris, Dollimore, Kindberg: Distributed Systems, Concepts and Design, Addison-Wesley, 2001, [www.cdk3.net](http://www.cdk3.net)

3. Krishna Nadiminti, Marcos Dias de Assunção, Rajkumar Buyya: Distributed Systems and Recent Innovations: Challenges and Benefits
4. Lee: Introduction to Distributed Systems, 2007

