

### DESCRIPTION OF A STUDY COURSE – SYLLABUS

<b>Title of a course</b>	<b>Communication Technologies</b>				
<b>Head of course</b>	<b>Elvis Kukuljan, BSc of Civil Engineering</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>	1.	<b>Semester</b>	I	<b>ECTS credits</b>	6
<b>Teaching plan (L + E + S+ Pr)</b>	2+2+0+0				
<b>Goals of a course</b>					
To learn the basics of communication technologies: communication models as a basis for connecting open systems. Physical media. Transmission on the physical layer. Error and flow management. Patching management. Portable services and telecommunication services.					
<b>Conditions for enrolling course</b>					
No conditions					
<b>Learning outcomes on a level of a study programme which includes course</b>					
Outcome 1. Define communication model and tasks of communication protocols. Outcome 2. Identify removable media and their characteristics. Outcome 3. Define and interpret different ways of encoding data Outcome 4. Describe and interpret mechanisms for data flow control, error control, and fragmentation. Outcome 5. Describe and interpret routing methods in packet-switched networks					
<b>Expected learning outcomes on a level of a course</b>					
1. Define the communication model, the tasks of communication protocols 2. Apply the appropriate transmission medium with respect to project requirements 3. Prepare project documentation for information system development 4. Select the appropriate routing method in packet-overlapping networks 5. Select appropriate security mechanisms in LANs					
<b>Content of a course</b>					
Introduction into communications technologies: communication models as a base for connecting open systems. Physical media. Transfer on the physical layer. Error and process management. Congestion management. Transfer services and tele-services. Optical communication networks and networks technologies. LAN and WAN network structures. Service integration on a single network. Analysis of services quality. ISDN, ATM and broadband networks. Users' access to the network. Principles of communication and link in local networks. Standards. Network layer. Theory of graphs and networks. Routing and algorithms. Transport layer. Application of telecommunications networks. Communications networks security. Data transfer security. Security technologies: Firewalls, Virtual Private Network (VPN).					
<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>					
<b>Grading, evaluation and monitoring of students' work continuously during lectures and exams</b>					
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	Written test	Project documentation	Project defense	Commercial presentation	Threshold	Max
Outcome 1	7 %	5 %	13 %		12,5 %	25 %
Outcome 2	8 %	5 %	12 %		12,5 %	25 %
Outcome 3		5 %	15 %		10 %	20 %
Outcome 4		20 %			10 %	20 %
Outcome 5				10 %	5 %	10 %
Percentage of ECTS	0,9	2,1	2,4	0,6	-	-
Total	15 %	35 %	40 %	10 %	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	Written exam	Oral exam	Max
Outcome 1	7 %	18 %	25 %
Outcome 2	8 %	17 %	25 %
Outcome 3		20 %	20 %
Outcome 4		20 %	20 %
Outcome 5		10 %	10 %
Percentage of ECTS	0,9	5,1	-
Total	15 %	85 %	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. Authorized Lectures

**Additional literature**

1. A.S.Tanenbaum: "Computer Networks", Prentice-Hall, 4th edition, 2003
2. Pavlić, M.: Informacijski sustavi, Sveučilište u Rijeci, Rijeka 2009.

