

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Description of a study course – CYBERSEC					
Title of a course	Communication Technologies				
Study programme	Specialist professional graduate study of Information Technology in Business Systems				
Status of a course	Obligatory				
Year of study	1	Semester (Winter/Summer)	W	ECTS credits	6
Goals of a course					
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.					
Conditions for enrolling course					
No conditions					
Learning outcomes on a level of a study programme which includes course					
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					
Expected learning outcomes on a level of a course					
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					
Content of a course					
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).					
Teaching modes	<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 _____		
Grading, evaluation and monitoring of students' work continuously during lectures and exams					
Grading is based upon evaluation 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.					