

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Telecommunication Networks and Services				
Head of course	MSc Dean Noč, Titular Lecturer				
Study programme	Professional undergraduate study Telematics				
Status of a course	Obligatory				
Year of study	2.	Semester	IV	ECTS credits	5
Teaching plan (L + E + S+ Pr)	2+2+0+0				
Goals of a course					
Acquiring knowledge and competences on the structure, services, elements and protocols of the telecommunications network, methods of managing network traffic, and procedures for managing network parameters in order to achieve the services of the required quality level.					
Conditions for enrolling course					
No conditions					
Learning outcomes on a level of a study programme which includes course					
Outcome 1: Explain the basic mathematical, physical and technical principles of operation of electrotechnical, electronic and computer elements and circuits, measuring devices and electrical machines used in telematics systems.					
Outcome 7: Describe the development and implementation of communications systems, switching systems, and local and broadband networks.					
Outcome 8: Design and implement communications and computer networks, as well as network services.					
Outcome 11: Design and develop solutions for components, circuits and software for application in signal processing and telecommunications, with the preparation of supporting project documentation.					
Outcome 15: Participate in teamwork and independently present professional content in written and spoken form in Croatian and English.					
Expected learning outcomes on a level of a course					
1. Describe the different architectures and types of communication networks. Describe the structure of the transmission and switching network, analyse the characteristics and properties of different types of transmission media, analyse the losses in the switched channel networks and the delay in switched packet networks, analyse signal transmission by communication channels					
2. Analyse the properties of high-speed packet communication networks, explain the models and methods of analysis of information and communication systems and networks, explain the role and importance of signalling and synchronization network. Define the concept, architecture and organization of LANs, and analyse active and passive equipment in LANs					
3. Explain the role and importance of broadband access networks in the context of NGNs, describe access broadband technologies implemented on twisted pairs. Describe the new generations of fibre optic access networks					
4. Analyse protocol functions and services, as well as protocol interactions to direct network traffic, and explain methods for dealing with network congestion. Explain how the core telecommunications network works and the functions of network nodes					
5. Explain the basic elements and development of telecommunication systems, as well as network and customer services					
Content of a course					
Telephony; Telephone net; ISDN, ADSL technologies; Operators and Telecommunication units; VOIP, Internet Telephony; Speech Technology and Telephone Systems, IVR, ACD, Dialler, Call Centres, Contact Centres; Customer Relationship Management (CRM) and Call Statistics					
Teaching modes	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory		

	<input type="checkbox"/> distance learning <input type="checkbox"/> field classes	<input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____																																																																																																		
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1. William Stallings: Data and Computer Communications, Prentice Hall, 10th Edition, 2014, ISBN-13: 978-0-13-350648-8
2. Telekomunikacije-tehnologija i tržište, A. Bažant et. al., Element, 2004, Zagreb.
3. Osnove arhitekture mreža, A. Bažant et. al., Element, 2004, Zagreb.
4. Svjetlovodna tehnika, T.Brodić, G. Jurin; Tehnički fakultet, 1995, Rijeka.

