

SYLLABUS

COMPUTER NETWORKS *Academic Year 2022-2023*

1. Program General Data

1.1. University	„1 Decembrie 1918”
1.2. Faculty	Faculty of Informatics and Engineering
1.3. Department	Mathematical, Informatic and Electronics Science and Engineering Department
1.4. Area	Computer Science
1.5. Level	undergraduate
1.6. Specialization	Computer Science

2. Subject General Data

2.1. Subject	<i>Computer networks</i>		2.2. Code	CSE203			
2.3. Course leader	Ceuca Emilian						
2.4. Teaching Assistant's Name	Incze Arpad						
2.5. Year	II	2.6. Semester	I	2.7. Evaluation form (E – final exam/C-examination /VP)	E	2.8. Status (C– Compulsory, Op – optional, F - Facultative)	C

3. Course Structure (Weekly number of hours)

3.1. Weekly number of hours	4	3.2. course	2	3.3. seminar, laboratory	2
3.4. Total number of hours according to the curricula	56	3.5. course	28	3.6. seminar, laboratory	28
Time distribution:					Hours
Individual study using the lecture notes					20
Documentation (library)					10
Homework, Essays, Portfolios					19
Tutoring					-
Evaluation (exams)					20
Other activities.....					-

3.7 Total number of hours for individual study	69
3.9 Total number of hours per semester	125
3.10 Credits	5

4. Prerequisites

4.1. Curricula prerequisites	
4.2. according to the general competencies	Basic knowledge in programming languages (C, Java) Computer architecture, Operating systems

5. Conditions

5.1. Conditions to support teaching	<i>Room A3 and Microsoft TEAMS</i>
5.2. Conditions for supporting seminar/laboratory activities	

6. Discipline specific competencies

Professional competences	<p><i>C6.1. The identification of base concepts and models for computer systems and computer networks.</i></p> <p><i>C6.2. The identification and explanation of base architectures for organizing and managing systems and networks.</i></p> <p><i>C6.3. The use of various techniques for installing, configuring and managing systems and networks.</i></p> <p><i>C6.4. The conducting of performance measurements for response times, resource consumption; establishing access rights.</i></p> <p><i>C6.5. The development of computer-network projects.</i></p>
Transversal competences	

7. Course objectives

7.1 General course objectives	<ul style="list-style-type: none"> - <i>Acquisition of knowledge about various types of computer networks,</i> - <i>Knowledge of techniques used to access the communication medium,</i> - <i>Knowledge about protocols for transmission and reception of messages,</i> - <i>Knowledge of services for users.</i>
7.2 Specific course objectives	

8. Course contents

Lectures	Didactic methods used	Observații
Introduction. Concepts, network types, characteristics, evolution, standards	<i>Lecture, discussions, examples</i>	2
ISO-OSI Reference model and Internet's TCP/IP protocol stack. OSI abstract model presentation, description of protocol functions for every layer. General presentation for TCP/IP protocol stack	Oral Presentations using multimedia and Microsoft Teams Q & A Interactive teaching	2
Data transmission techniques. Data transmission concepts, analog and digital transmission techniques, coding, communication channels		2
Types of computer networks. Architectures, evolution, topologies, physical parameters		2
Physical level. Transmission media, characteristics, performances, connectors, structured cabling system		2
Medium access control. Medium access techniques for local (wired and wireless) and wide area networks		2
Data Link level. Functions, problems, protocols, case study: HDLC.		2
Local Area Computer Networks. Fundamentals, architectures, evolution		2

Local Area Computer Networks. Systems, performances.		2
Computer Networks Interconnection. Devices for network interconnection; presentation of bridges, switches and routers		2
Internet access. IP (+ ICMP), IPv6 (+IGMP) protocols. Address resolution protocol. Routing protocols		2
Transport level protocols. TCP protocol; congestion control. TCP and UDP socket		2
General introduction to Internet applications. File transfer. Electronic mail, multimedia transmissions, network management.		2
Wireless Networks.		2

References

1. EMILIAN CEUCA – REȚELE DE CALCULATOARE SERIA DIDACTICA 2007
2. V.Dadarlat, E.Cebuc - Rețele Locale de Calculatoare - de la cablare la interconectare, Editura Albastra (Microinformatica), Cluj, 2006, ISBN 973-650-161-2
3. 2. W. Stallings, Data and Computer Communications; Prentice Hall , 2004-2014
4. 3. A. Tanenbaum – – Computer Networks, Prentice Hall, 2005- 2010 (A. S. Tanenbaum, Rețele de Calculatoare; Agora Press)
5. TANENBAUM, A.S., ``REȚELE DE CALCULATOARE, ED. 4'', BYBLOS SRL, 2003

Seminars-laboratories	Didactic methods used	
Labor protection. Training. General overview of the laboratories. Introduction to computer networks.	<i>laboratory works</i>	2
LAN networks topographies: structure, components, architectures.	Practical exercises Brief presentation of possible solutions Self testing programmes	2
Transmission media. Measurements, cabling.		2
The OSI model.		2
The IP addressing.		2
Interconnecting devices.		2
Web and FTP servers.		2
Configuring a network card. Installation in the Windows environment. Computing IP addresses.		2
Wireless components. Practical applications.		2
Case Study: LAN structure, presentation documents.		2
Practical laboratory applications.		2
Project presentation.		6

References

6. EMILIAN CEUCA – REȚELE DE CALCULATOARE SERIA DIDACTICA 2007
7. V.Dadarlat, E.Cebuc - Rețele Locale de Calculatoare - de la cablare la interconectare, Editura Albastra (Microinformatica), Cluj, 2006, ISBN 973-650-161-2
8. 2. W. Stallings, Data and Computer Communications; Prentice Hall , 2004-2014
9. 3. A. Tanenbaum – – Computer Networks, Prentice Hall, 2005- 2010 (A. S. Tanenbaum, Rețele de Calculatoare; Agora Press)
10. TANENBAUM, A.S., ``REȚELE DE CALCULATOARE, ED. 4'', BYBLOS SRL, 2003

9. Corroborating Course content expectations to the epistemic community representatives, professional associations and employers representative for the curricula

Course content is kept state of the art by using latest protocols and devices available on the market

10. Assessment

Activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage from the final mark
10.1 Course	Interactivity and initial preparation, intermediary and final written examinations	Written exam (2,5 h).	70%
	-	-	-
10.2 Seminar/laboratory	Quality of practical work, participation	Continuous assessment, final written colloquium	30%
	-	-	-
10.3 Minimum performance standard: Grade calculus: 30% laboratory + 70% final exam Conditions for participating in the final exam: Laboratory ≥ 5 Conditions for promotion: grade ≥ 5			

Completion date

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Instructor's signature

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Teaching assistant's signature

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Date of approval within the department

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Head of department's signature

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