

# COURSE GUIDE 2019-2020



Dean, Prof. Daniela Tărniceriu

## 1. Program info

1.1 Higher education institution	"Gheorghe Asachi" Technical University of Iași
1.2 Faculty / Department	Electronics, Telecommunications and Information Technology
1.3 Department	Telecommunications and Information Technologies
1.4 Field	Electronic Engineering, Telecommunications and Information Technology
1.5 Study level	Bachelor's Degree Studies
1.6 Study program / Qualification	Telecommunications Systems and Technologies

## 2. Course info

2.1 Course name: Computer Networks and Operating Systems						Code: EDID403T	
2.2 Course organizer (lecturer)			Assoc. Prof. Luminița Scripcariu, PhD				
2.3 Teaching assistants			Lecturer Petre-Daniel Mătășaru, PhD				
2.4 Year of study	4	2.5 Semester	2	2.6 Assessment	C	2.7 Type of subject	DID

## 3. Estimated total time (hours per semester for teaching activities)

3.1 Number of hours per week	5	3.2 lecture	3	3.3 seminar/laboratory	2
3.4 Total number of hours in curricula	70	3.5 lecture	42	3.6 seminar/laboratory	28
Time distribution					hours
Textbook, course support, references and course notes study					28
Library, electronic platforms and on site documentation					14
Seminar/laboratory preparation, homework, reports, portfolios and essays					14
Tutoring					10
Assessment					8
Other activities					-
3.7 Total individual study hours	74				
3.9 Total hours per semester	144				
3.10 Number of credit points	6				

## 4. Prerequisites (where applicable)

4.1 curricula type	• No
4.2 competence type	• cognitive competencies on mathematics, physics and signals, circuits and systems, basics of telecommunication

## 5. Infrastructure (where applicable)

5.1. for lectures	• Conference room with video projector, projection shield and blackboard. The student is required to answer teachers' questions, solve the proposed exercises and deliver a written sheet with the results.
5.2. for laboratories	• Computer networks with specific software programs installed, oscilloscope, signal generators, cables (UTP, FTP, coaxial) and network tools. The laboratory activities are compulsory and each student presents a written report at the end of each class.



## 6. Specific competences

		ECTS <sup>i</sup>	6	ECTS Distribution <sup>ii</sup>
Professional competences	CP1	to explain the principles of computer networks		0.5
	CP2	to calculate (sub)network addresses		0.5
	CP3	to design LAN		0.5
	CPS1	to use specific telecommunication network software		0.5
	CPS2	to model, configure and analyze LAN		0.5
	CPS3	to simulate LAN		0.25
	CPS4	to analyze and implement network security methods		0.25
	CPS5	to identify and analyze types, characteristics and specific problems of LAN		0.25
Interdisciplinary competences	CPS6	to design, measure and test communication links		0.25
	CPS7	to design and analyze network topology		0.25
	CPS8	to configure network equipments		0.25
	CT1	developing teamwork abilities		0.4
	CT2	to communicate correctly		0.2
	CT3	to learn and continuous study		0.2
	CT4	to solve problems		0.2
	CT5	to develop technical creativity		0.3
	CTS5	to use specific computer software		0.4
	CTS6	to use specific telecommunication network terms		0.3

## 7. Course targets (as resulting from 6. Specific competences table)

7.1 Course main target	Forging the abilities needed in order to approach the design, simulation and configuration of local computer networks
7.2 Course specific targets	1. Acquiring theoretical knowledge on LAN 2. Completing team projects on LAN

## 8. Contents

8.1 Lectures	Teaching methods	Notes
Chapter 1. Principles of Computer Networks. Network Models and Architectures	Oral presentation of theory and numerical examples, Solving exercises, case studies.	6 hours
Chapter 2. Communication Protocols. IP Addresses. Subnetworks	Oral presentation of theory and numerical examples, Solving exercises, case studies.	9 hours
Chapter 3. LAN Standards	Oral presentation of theory and numerical examples, Solving exercises, case studies.	9 hours
Chapter 4. LAN equipments	Oral presentation of theory and numerical examples, Solving exercises, case studies.	6 hours
Chapter 5. Network Interconnection	Oral presentation of theory and numerical examples, Solving exercises, case studies.	6 hours
Chapter 6. Network Security Techniques	Oral presentation of theory and numerical examples, Solving exercises, case studies.	3 hours
Chapter 7. Operating Systems	Oral presentation of theory and numerical examples, Solving exercises, case studies.	3 hours
8.2 Laboratory	Teaching methods	Notes
Basic Notions on Computer Networks. Work Security Measures	Software applications	2 hours
Physical Installation of LAN	Software applications, code design	2 hours
Configuration of Network Interface Card	Software applications, code design	2 hours
Telecommunication Cables and Connectors	Hardware applications, Cable Parameters Measuring, Signal Visualization	2 hours
IP Addressing and Subnetworks	Software applications	2 hours
Configuring Internet connections	Software applications, numerical cases analysis	2 hours
Communication Protocols	Software applications, numerical cases analysis	2 hours
LAN Design	Software applications, team project (I)	2 hours
LAN simulation	Software applications, team project (II)	2 hours
Creating web pages	Software applications, individual project	2 hours
Linux Operating System	Software applications	3.5 hours
Final Test	quiz and testing practical abilities	2 hours
References:		



1. Luminița Scripcariu, "Bazele rețelilor de calculatoare", Ed. CERMI Iași 2005, ISBN 973-667-145-3
2. L. Scripcariu, „Rețele de calculatoare și sisteme de operare” (îndrumar de laborator), Iași, 2003 (format electronic)
3. Tanenbaum "Computer Networks",
4. E-course on <http://telecom.etti.tuiasi.ro/telecom/staff/lscipca/discipline%20predate/discipline%20predate.htm>
5. Slides: <http://edu.etti.tuiasi.ro> (Moodle).

**9. Course contents corroboration with the expectations of the epistemic community representatives, professional associations and relevant employers in the field of the program**

**The course is intended to provide basic knowledge and abilities to students which can work for telecommunication service providers.**

**10. Assessment**

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Percentage of final grade
10.4 Lectures	Basic Knowledge on Computer Networks and OS	Theory Quiz	80%
	Problem solving capabilities	Problem Solving	
	Knowing Abbreviation Meanings on Networking	Oral Quiz	
	Short Exercises	Solving in-class proposed exercises	
	Designing a LAN	Evaluating team projects	
10.5 Laboratory	Operating on specific software programmes	- discussions student – teacher - evaluating software operating student abilities	20%
	Using specific equipments	- presentation of experimental results	

**10.6 Minimum performance standard**

The student must be present at all evaluation meetings. Obtaining at least 45 % of the total points for the final grade is mandatory.

Completion date: Sept. 12, 2019

Course organizer signature,  
Assoc. Prof. Luminița Scripcariu

Teaching assistant signature,  
Assoc. Prof. Luminița Scripcariu

Department approval date,

Department director signature,  
Assoc. Prof. Luminița Scripcariu

16. SEP. 2019

18 SEP 2018