

SYLLABUS

1. Data about the program of study

1.1 Institution	The Technical University of Cluj-Napoca
1.2 Faculty	Faculty of Automation and Computer Science
1.3 Department	Computer Science
1.4 Field of study	Computer Science and Information Technology
1.5 Cycle of study	Bachelor of Science
1.6 Program of study/Qualification	Computer science/ Engineer
1.7 Form of education	Full time

2. Data about the subject

2.1 Subject name	Communication protocols and networks project			Subject code	56
2.2 Course responsible / lecturer	-				
2.3 Teachers in charge of seminars / Laboratory / project	Assoc. prof. dr. eng. Emil Cebuc - Emil.Cebuc@cs.utcluj.ro				
2.4 Year of study	IV	2.5 Semester	8	2.6 Type of assessment (E - exam, C - colloquium, V – verification)	C
2.7 Subject category	Formative category: DF – fundamental, DS – speciality, DC – complementary				DS
	Optionality: DOB – mandatory, DOP – optional (alternative), DFA – optional (free choice)				DOB

3. Estimated total time

3.1 Number of hours per week	2	of which:	Course	-	Seminars	-	Laboratory	-	Project	2
3.2 Number of hours per semester	28	of which:	Course	-	Seminars	-	Laboratory	-	Project	28
3.3 Individual study:										
(a) Manual, lecture material and notes, bibliography										-
(b) Supplementary study in the library, online and in the field										18
(c) Preparation for seminars/laboratory works, homework, reports, portfolios, essays										-
(d) Tutoring										-
(e) Exams and tests										4
(f) Other activities:										-
3.4 Total hours of individual study (suma (3.3(a)...3.3(f)))			22							
3.5 Total hours per semester (3.2+3.4)			50							
3.6 Number of credit points			2							

4. Pre-requisites (where appropriate)

4.1 Curriculum	Local Area Networks, 6-th semester
4.2 Competence	LAN protocols, LAN structure, LAN services

5. Requirements (where appropriate)

5.1. For the course	N/A
5.2. For the applications	Classroom, PC with internet access

6. Specific competence

6.1 Professional competences	C5 Designing, managing the lifetime cycle, integrating and ensuring the integrity of hardware, software and communication systems (1 credit) • C5.1 Specifying the relevant criteria regarding the lifetime cycle, quality, security and the computing system's interaction with the environment and the human operator • C5.2 - Using interdisciplinary knowledge for adapting an information system to application domain requirements • C5.3 Using fundamental principles and methods for ensuring the security, the safety and ease of exploitation of the computing systems • C5.4 - Adequate utilization of quality, safety and security standards in information processing • C5.5 Creating a project including the problem's identification and analysis, its design and development, also proving an understanding of the basic quality requirements
6.2 Cross competences	CT2 Identifying, describing, and conducting processes in the projects management field, assuming different roles inside the team and clearly and concisely describing, verbally or in writing, in Romanian and in an international language, the results from the activity field. (1 credit)

7. Expected Learning Outcomes

Knowledge	Describes, identifies, summarizes advanced concepts, models and methods regarding complex computer systems and infrastructures, distributed and parallel systems, networks and communication protocols
Skills	Designs medium-sized networks, identifies the necessary equipment, prepares an estimated cost estimate for the project implementation. Can configure the selected equipment in a simulation of the designed network.
Responsibilities and autonomy	Assumes responsibility for the quality, security and correctness of the solutions developed and demonstrate autonomy in organizing design and learning activities, collaborating effectively in teams and adapt to new requirements and emerging technologies.

8. Discipline objective (as results from the *key competences gained*)

8.1 General objective	Teamwork, working with partial and contradicting specifications
8.2 Specific objectives	A team of 3-4 students can design a medium size LAN

9. Contents

9.1 Lectures	Hours	Teaching methods	Notes
-			
Bibliography			
-			
9.2 Applications – Seminars/Laboratory/Project	Hours	Teaching methods	Notes
Introduction, team setup, project requirements and specifications	4	Brief presentation of possible solutions Refinement of project specifications.	
Project design stage 1	4		
Project design stage 2	4		
Project design stage 3	4		
Project documentation 1	4		
Project documentation 2	4		

Project presentation and colloquium	4		
Bibliography 1. Packet Tracer user manual 2. OpNet user Manual 3. Equipment data sheet available on Internet, specific to each equipment selected by students			

**Se vor preciza, după caz: tematica seminariilor, lucrările de laborator, tematica și etapele proiectului.*

10. Bridging course contents with the expectations of the representatives of the community, professional associations and employers in the field

Project content is kept state of the art by using latest devices available on the market.

11. Evaluation

Activity type	Assessment criteria	Assessment methods	Weight in the final grade
Course	-	-	-
Seminar	-	-	-
Laboratory	-	-	-
Project	Submitted project fulfils requirements	Each project is evaluated individually, Intermediate steps conformance and deadline.	80% 20%

Minimum standard of performance:

Students can select proper networking devices to fulfil design specifications. Students can configure equipment in a Packet Tracer simulation to fulfil specific functions.

Grade calculus: 100% final exam

Conditions for participating in the final exam: at most one absence, intermediate task fulfilled at due time

Conditions for promotion: grade ≥ 5

Date of filling in: 20.04.2026	Teachers	Title First name Last name	Signature
	Course	-	
	Applications	Assoc.prof.dr.eng. Emil CEBUC	

Date of approval in the department	Head of department, Prof.dr.eng. Rodica Potolea
Date of approval in the Faculty Council	Dean, Prof.dr.eng. Vlad Mureșan