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	Master
1.6 Program of study / Qualification	Cybersecurity Engineering / Master
1.7 Form of education	Full time

2. Data about the subject

2.1 Subject name	***Dissertation Project Work***			Subject code	**19.00**
2.2 Course responsible / lecturer	Dissertation thesis' coordinator				
2.3 Teachers in charge of seminars / Laboratory / project	Decided by dissertation thesis' coordinator				
2.4 Year of study	II	2.5 Semester	2	2.6 Type of assessment (E - exam, C - colloquium, V – verification)	V
2.7 Subject category	Formative category: DA – advanced, DS – speciality, DC – complementary				DS
	Optionality: DI – imposed, DO – optional (alternative), DF – optional (free choice)				DI

3. Estimated total time

3.1 Number of hours per week	7	of which:	Course	0	Seminars	0	Laboratory	0	Project	7
3.2 Number of hours per semester	98	of which:	Course	0	Seminars	0	Laboratory	0	Project	98
3.3 Individual study:										
(a) Manual, lecture material and notes, bibliography										0
(b) Supplementary study in the library, online and in the field										0
(c) Preparation for seminars/laboratory works, homework, reports, portfolios, essays										108
(d) Tutoring										20
(e) Exams and tests										4
(f) Other activities:										20

3.4 Total hours of individual study (suma (3.3(a)…3.3(f)))	152
3.5 Total hours per semester (3.2+3.4)	250
3.6 Number of credit points	10

4. Pre-requisites (where appropriate)

4.1 Curriculum	Research Activity 1, 2 and 3, Dissertation Research and Work
4.2 Competence	Competences of subjects mentioned at 4.1

5. Requirements (where appropriate)

5.1. For the course	N/A
5.2. For the applications	Hardware and software specific to dissertation theme

6. Specific competence

6.1 Professional competences	perform ICT security testing perform data analysis identify ICT security risks perform risk analysis ensure information privacy monitor developments in field of expertise keep up with the latest information systems solutions execute ICT audits
6.2 Cross competences	develop an analytical approach taking a proactive approach developing strategies to solve problems being open minded coordinate engineering teams

7. Expected Learning Outcomes

Knowledge	ICT security standards security engineering cyber security cyber attack counter-measures information confidentiality information security strategy computer forensics ethical hacking principles risk management assessment of risks and threats attack vectors security threats ICT infrastructure ICT performance analysis methods
Skills	analyse ICT systems define technical requirements identify ICT security risks and weaknesses perform ICT security testing perform risk analysis collect cyber defence data perform scientific research report test findings and give live presentations solve ICT system problems address problems critically assess ICT knowledge execute ICT audits implement ICT security policies interpret technical texts
Responsibilities and autonomy	develop an analytical approach take a proactive approach develop strategies to solve problems be open-minded coordinate engineering teams

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

8.1 General objective	Elaborate the dissertation thesis' report in accordance to a complete and detailed understanding of the dissertation theme's domain (gained during the dissertation research and work), obtained results and drawn conclusions.

8.2 Specific objectives	1. Elaborate dissertation thesis' report in a way that is compliant with the Computer Science Department and UTCN's regulations regarding the elaboration of dissertation theses. 2. Establish a critical classification of existing solutions to the challenges and problems the dissertation thesis dealt with, including the solutions developed by the thesis' author. 3. Have a detailed and complete understanding of the dissertation theme's domain, and of the advantages and limitations of the solutions proposed and developed by the thesis' author. 4. Identify future research directions in the field of dissertation thesis.

9. Contents

9.1 Lectures	Hours	Teaching methods	Notes
N/A	N/A	N/A	N/A
Bibliography N/A			
9.2 Applications - Seminars/Laboratory/Project	Hours	Teaching methods	Notes
Review, update and extend the technical reports written during the previous phases on dissertation thesis' research and work, preparing them for integration in the final dissertation report.	98	Cooperation between dissertation supervisor and student	
Elaborate a critical analysis of the dissertation thesis' field, its specific problems, challenges, and existing solutions, including those developed by the thesis' author.			
Describe the minimum theoretical background needed to understand the thesis' field.			
Describe and analyze the proposed solutions and the design of the implemented prototype.			
Describe the technical details of the implemented prototype.			
Describe and analyze evaluation tests / benchmarks and their results, identify the limitations of the implemented prototype, and propose possible improvements.			
Describe final conclusions and future research directions.			
Cooperate with the dissertation thesis' coordinator, to bring the thesis report in the form compliant to specific regulations and coordinator' expectations.			
Prepare the presentation of dissertation thesis' work and report, including the demo scenarios needed to prove the functionality of developed system / application and obtained results.			
Bibliography Established by each supervisor for students she/he coordinates, specific to chosen dissertation themes.			

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

It is performed by periodic talks with important cybersecurity industry representatives.

10. Evaluation

Activity type	Assessment criteria	Assessment methods	Weight in the final grade
Project	Based on the contents and quality of the dissertation thesis' report, presentation, and demos.	Contents' quality *(summative assessment)* Format quality *(summative assessment)*	70% 30%
Minimum standard of performance Minimum numer of pages of the thesis report and compliance with required structure.			

Date of filling in 01.09.2025	**Responsible**	**Title First name Last name**	**Signature**
	Applications	Dissertation thesis coordinator	

Date of approval in the department 17.09.2025	Head of department, Prof.dr.eng. Rodica Potolea
Date of approval in the Faculty Council 19.09.2025	Dean, Prof.dr.eng. Vlad Mureșan