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	Automation
1.4	Field of study	Systems engineering
1.5	Cycle of study	Master
1.6	Program of study/Qualification	Cyber-physical systems
1.7	Form of education	IF - Full time
1.8	Subject code	11.00

2. Data about the subject

2.1	Subject name			Project Cyber-physical systems 2			
2.2	Subject area			Systems engineering			
2.2	Course responsible/lecturer			Not necessary			
2.3	Teachers in charge of seminars			At the student's choice			
2.4 Year of study	1	2.5 Semester	2	2.6 Assessment		C	
2.7 Subject category	Formative category					DS	
	Optionality					DO	

3. Estimated total time

3.1 Number of hours per week	2	of which	3.2 Course	0	3.3 Seminar	0	3.3 Laborator	0	3.3 Proiect	2
3.4 Total hours in the curriculum	28	of which	3.5 Course	0	3.6 Seminar	0	3.6 Laborator	0	3.6 Proiect	28

3.7 Individual study:	
(a) Manual, lecture material and notes, bibliography	
(b) Supplementary study in the library, online and in the field	28
(c) Preparation for seminars/laboratory works, homework, reports, portfolios, essays	42
(d) Tutoring	
(e) Exams and tests	2
(f) Other activities	

3.8 Total hours of individual study (sum (3.7(a)…3.7(f)))	72
3.9 Total hours per semester (3.4+3.8)	100
3.10 Number of credit points	4

4. Pre-requisites (where appropriate)

4.1	Curriculum	Not necessary
4.2	Competence	Use of fundamental automation concepts

5. Requirements (where appropriate)

5.1	For the course	Not necessary
5.2	For the applications	Not necessary

6. Specific competences

Professional competences	Realization of professional and/or interdisciplinary research-development projects in compliance with quality, safety and security standards
Cross competences	Team work Scientific dissemination of results

7. Discipline objectives (as results from the *key competences gained*)

7.1	General objective	- Training of young engineers, researchers and developers; - Supporting master's students in the proper preparation of dissertations, research projects, dissemination of results; - Choosing strategies, methods, techniques and tools to develop and implement a project.
7.2	Specific objectives	- Acquiring of transdisciplinary and interdisciplinary knowledge

8. Contents

8.1. Lecture (syllabus)	Number of hours	Teaching methods	Notes
Not necessary			
Bibliography			
8.2. Seminars /Laboratory/Project	Number of hours	Teaching methods	Notes
Under the guidance of the coordinating teaching staff		Presentation of examples, discussions, practical applications	In case of force majeure, the online Teams platform will be used
Bibliography			

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

• The discipline meets the current requirements of development and evolution on a national and international level of higher technical education in the field of Systems Engineering;
• The students are provided with skills related to the needs of the current qualifications, a scientific and technical training corresponding to the master's level, which will allow them to quickly enter the labor market after graduation, but also the possibility of continuing their studies through doctoral programs;
• The study program is included in the policy and strategy of the Technical University of Cluj-Napoca, both in terms of content and structure, as well as in terms of learning outcomes and openness offered to students on the job market in Systems Engineering.

10. Evaluation

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
10.4 Course	Not necessary	Not necessary	
10.5 Project	Active participation during the semester in project activities	The master student is graded during the semester according to their active participation in the project activities	20%
	The content, complexity, originality, technical solutions used, innovation, practical results of the project	Grading of the research report based on the overall activity and oral presentation at the colloquium	80%
10.6 Minimum standard of performance			
Project grade>=5			

Date of filling in:		**Title Surname Name**	**Signature**
16.03.2023	Lecturer		
	Teachers in charge of application		

Date of approval in the department of Automation	Head of department Prof.dr.ing. Honoriu Vălean
Date of approval in the faculty of Automation and Computer Science	Dean Prof.dr.ing. Liviu Miclea