SYLLABUS

1. Data about the

1. Data about the program of study

1.1 Institution	Technical University of Cluj-Napoca
1.2 Faculty	Faculty of Electronics, Telecommunications, and Information Technology
1.3 Department	Communications
1.4 Field of study	Electronic Engineering, Telecommunications, and Information Technologies
1.5 Cycle of study	Master of Science
1.6 Program of study / Qualification	Telecommunications/ Master
1.7 Form of education	Full time
1.8 Subject code	TC-E22.00

2. Data about the subject

2.1 Subject name	Field Specific Research for the Master Thesis						
2.2 Subject area	Theoretical area Methodological area Area of analysis						
2.3 Course responsible	Scientific advisor of the dissertation thesis						
2.4 Teacher in charge with seminar / laboratory / project	Scientific advisor of the dissertation thesis						
2.5 Year of study	2	2.6 Semester	4	2.7 Assessment	C	2.8 Subject category	DS/DI

3. Estimated total time

3.1 Number of hours per week	5	of which: 3.2 course	0	3.3 project	5
3.4 To Total hours in the curriculum	70	of which: 3.5 course	0	3.6 project	70
Distribution of time					hours
Manual, lecture material and notes, bibliography					40
Supplementary study in the library, online specialized platforms and in the field					50
Preparation for seminars / laboratories, homework, reports, portfolios and essays					40
Tutoring					40
Exams and tests					10
Other activities:					0

3.7 Total hours of individual study	180
3.8 Total hours per semester	250
3.9 Number of credit points	10

4. Pre-requisites (where appropriate)

4.1 curriculum	No
4.2 competence	English language

5. Requirements (where appropriate)

5.1. for the course	-
5.2. for the seminars / laboratories / projects	Cluj-Napoca

6. Specific competences

Professional competences	C1. Use of the fundamental elements related to devices, circuits, systems, instrumentation and electronic technology C4. Design, implementation and operation of data, voice, video and multimedia services. This is based on the understanding and the application of fundamental concepts in telecommunications and transmission of information C2. Applying the basic methods for the acquisition and processing of signals C3. Application of the basic knowledge, concepts and methods regarding the architecture of computer systems, microprocessors, microcontrollers, languages and programming techniques C5. Selecting, installing, configuring and operating fixed or mobile telecommunications equipment. Equipping a site with usual telecommunications networks C6. Solving specific problems of the broadband communications networks: propagation in different environment, circuits and equipment for high frequencies (microwaves and optical) C7. Design, implementation and testing of systems and of various types of applications (signal processing, classification, regression, detection, natural language processing, shape recognition) based on machine learning or deep learning techniques
Cross competences	CT1 Methodical analysis of the problems encountered in the activity, identifying the elements for which there are established solutions, thus ensuring the fulfillment of professional tasks. CT2 Defining the activities in each stage and distributing them to the subordinates with the complete explanation of the duties, according to the hierarchical levels. It ensures the efficient exchange of information and inter-human communication.

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

7.1 General objective	Practice for the elaboration of the dissertation thesis in order to graduate the specialization Artificial Intelligence and Signal Processing in Electronics and Telecommunications (in English)
7.2 Specific objectives	Obtaining experimental results and their interpretation

8. Contents

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

The discipline content and the acquired skills agree with the expectations of the professional competences acquired will be used in the following COR occupations (Telecommunications Engineer; Sound engineer; Head engineer of multimedia systems; Speech encryption engineer; Multimedia application development engineer; Multimedia consultant engineer) or in the new occupations proposed to be included in COR (Sale Support Engineer; Multimedia Applications Developer; Communications Systems Test Engineer; Project Manager; Traffic Engineer; Communications Systems Consultant).

10. Evaluation

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
10.4 Applications	Contribution to experiments, value of results and their interpretation *Assessment criteria:* • grade is granted in accordance with the relevance of the results obtained during the elaboration of the dissertation paper, being an estimate at this date of the grade that the supervisor will propose for the evaluation committeee.	Colloquium	100%
10.6 Minimum standard of performance			
Qualitative point of view: *Minimal theoretical knowledge:* ✓Practice for the elaboration of the dissertation thesis in order to graduate the specialization Telecommunications (in English) *Minimal practical competences:* ✓Obtaining experimental results and their interpretation ***Quantitative point of view:*** ✓ The mark at the verification must be at least 5			

Date of filling in:	**Responsible**	**Title First name SURNAME**	**Signature**
20.06.2024	Applications	Advisor	

Date of approval in the Council of the Communications Department 10.07.2024	Head of Communications Department Prof. Virgil DOBROTA, Ph.D.
Date of approval in the Council of the Faculty of Electronics, Telecommunications and Information Technology 11.07.2024	Dean Prof. Ovidiu POP, Ph.D.