SYLLABUS

1. Data about the program of study

1.1	Institution	The Technical University of Cluj-Napoca
1.2	Faculty	Faculty of Automotive Engineering, Mechatronics and Mechanics
1.3	Department	Automotive Engineering and Transportation
1.4	Field of study	Automotive Engineering
1.5	Cycle of study	Master in Science
1.6	Program of study/Qualification	Tehnici Avansate în Ingineria Autovehiculelor (Advanced Techniques in Automotive Engineering) - în limba engleză
1.7	Form of education	Full time
1.8	Subject code	20.00

2. Data about the subject

2.1	Subject name			Dissertation Project Work		
2.2	Subject area			Automotive Engineering		
2.2	Course responsible/lecturer			-		
2.3	Teachers in charge of seminars			-		
2.4 Year of study	II	2.5 Semester	II	2.6 Assessment		V
2.7 Subject category	Formative category					DA
	Optionality					DI

3. Estimated total time

3.1 Number of hours per week	7	of which	3.2 Course	0	3.3 Seminar	0	3.3 Laborator	0	3.3 Proiect	7
3.4 Total hours in the curriculum	98	of which	3.5 Course	0	3.6 Seminar	0	3.6 Laborator	0	3.6 Proiect	98

3.7 Individual study:	
(a) Manual, lecture material and notes, bibliography	0
(b) Supplementary study in the library, online and in the field	150
(c) Preparation for seminars/laboratory works, homework, reports, portfolios, essays	0
(d) Tutoring	0
(e) Exams and tests	2
(f) Other activities	-

3.8 Total hours of individual study (summ (3.7(a)...3.7(f)))	152
3.9 Total hours per semester (3.4+3.8)	250
3.10 Number of credit points	10

4. Pre-requisites (where appropriate)

4.1	Curriculum	
4.2	Competence	identification of advanced analysis methods used for the maintenance, repair and operation of the motor vehicle fleet

5. Requirements (where appropriate)

5.1	For the course	
5.2	For the applications seminarului / laboratorului / proiectului	

6. Specific competences

Professional competences	Expression by written and oral communication in technical language of the theoretical foundations underlying the elaboration of a technical project; Knowledge of the general principles and stages of the drafting of a project; Formulation and application of methods and techniques / principles studied for the design of equipment for motor vehicles; Explaining and interpreting specific projects, using theoretical concepts and graphical tools; Adoption of criteria and methods for evaluation of concepts, theories and programs for the design of motor vehicle equipment; The comparative analysis of the data and its evaluation based on the theories and the methods used in the applicative research specific to the motor vehicles; Appropriate use of standard assessment criteria and methods to objectively assess the theoretical and practical elements related to technologies related to the design, construction and operation of motor vehicles; Elaboration of projects, models and prototypes, using principles and methods established in the field;
Cross competences	Respecting the principles, norms and values of the professional ethics code by addressing a rigorous, efficient and responsible work strategy for problem solving and decision-making. Applying the techniques of multidisciplinary teamwork and multidisciplinary work, on different hierarchical levels, within the working team - specific project management. Appropriate use of effective lifelong learning methods and techniques; adequate use of information and oral and written communication in a European language.

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

7.1	General objective	Application of advanced methods in the design, construction, maintenance, repair and operation of vehicles.
7.2	Specific objectives	Identification of advanced analysis methods used in maintenance, repair and operation of vehicles. Identifying and designing solutions for vehicle equipment. The technical, economic and financial basis of the modernization decisions for vehicles.

8. Contents

8.1. Lecture (syllabus)	Number of hours	Teaching methods	Notes
1. Analysing the need for the project and the current state of the art. 2. Conceptual development of the project and analysis of the variants. 3. Establish the design solution and specify the initial data. 4. Elaboration of the project (elements of detail, choice of materials, setting of features, graphic representation, simulations, research / development elements, including practical achievements). 5. Project evaluation from an economic point of view and implementation. 6. Evaluation of the project in terms of its environmental impact in the context of sustainable mobility.			
8.2. Individual study	Number of hours	Teaching methods	Notes
1. Study of the literature for the current state of the art achievements and research in the field of the topic addressed 2. Standards for materials, graphics, machine parts, quality assurance, etc. 3. Analysis of existing variants of projects and synthesis materials 4. The study of the existing online / online literature			
8.3. Strategies and methods to elaborate the paper			
1. At the department level, the graduates present the basic elements regarding the elaboration of the diploma project; 2. Leaders of diploma projects support the graduate for the elaboration of the structure / content, the schedule with the elaboration schedule and the weekly consultation hours; 3. The project leader verifies during the elaboration stage the realization of the prologue and the correctness of the solved elements, constantly orienting the candidate; 4. The graduate must carry out a period of documentation on the project in economic units.			
Bibliography ✓ 5 titles, established together with the tutor			

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

Synthesis and interpretation of advanced methods of analysis of specific processes in the field of machines and installations in agriculture and food industry. Using basic principles and methods for project management and ensuring quality of services according to market requirements.

10. Evaluation

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
10.4 Course	-	-	-
10.5 Seminars /Laboratory/Project	Systematic preparation of activities provided in the project Acquiring the theoretical and practical knowledge specific to the project theme; Knowledge of assisted design methods	Periodic assessment of the semester The grade (A / R) is proposed by the coordinating teacher of the dissertation thesis	100%
10.6 Minimum standard of performance			
The ability to identify optimal methods in the field. The ability to identify the itinerary and organize the processes specific to the field. The ability to identify and design optimal solutions.			

Date of filling in:		**Title Surname Name**	**Signature**
10.06.2024	Lecture	-	
	Teachers in charge of application (masters program responsible)	Prof. PhD Habil. Eng. Bogdan VARGA	

Date of approval in the department ART ____26.06.2024_____	Head of department Prof.PhD.Eng. Barabás István
Date of approval in the faculty ARMM _____28.06.2024_____	Dean Prof.PhD.Eng. Filip Nicolae